Methods Paper

Get With The Guidelines AFIB
Novel Quality Improvement Registry for Hospitalized Patients With Atrial Fibrillation

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Background—Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia. It is a cause of stroke, heart failure, and death. Guideline-based treatment can improve outcomes in AF. Unfortunately, adherence to these guidelines is low. Get With The Guidelines is a hospital-based performance initiative, which has been shown to improve adherence over time. Get With The Guidelines-AFIB is a novel quality improvement registry designed to improve adherence to AF guidelines.

Methods and Results—Hospitals will be recruited by regional American Heart Association staff and key stakeholders. Inpatients or observed patients with AF or atrial flutter will be enrolled. Data collected will include demographic, medical history, and clinical characteristics including laboratory values and treatments. Decision support will guide adherence to achievement and quality measures designed to improve adherence to anticoagulation, heart rate control, safe antiarrhythmic drug use, and patient education and follow-up. Increased adherence to guidelines will be facilitated using rapid-cycle quality improvement, site-specific reporting including national and regional benchmarks and hospital recognition for achievement. Primary analyses will include adherence to American Heart Association/American College of Cardiology performance measures and guidelines. Secondary analyses will include processes of care, risk stratification, treatment of special conditions or populations and use of particular treatment techniques.

Conclusions—AF is common clinical problem with significant morbidity and mortality. Get With The Guidelines-AFIB is a national hospital-based AF quality improvement program designed to increase adherence to evidence-based guidelines for AF. (Circ Cardiovasc Qual Outcomes. 2014;7:770-777.)

Key Words: antiarrhythmia agents • anticoagulants • atrial fibrillation • atrial flutter • quality assurance, health care

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia and is associated with complications such as stroke, heart failure, and death.1,2 There are a half-million hospitalizations annually in the United States for which AF is the primary diagnosis. AF is estimated to contribute to >100,000 deaths per year in the United States.3 The total cost for treating patients with AF in the United States is ≈$26 billion annually.3

Fortunately, outcomes after the development of AF can improve with appropriate treatment, including anticoagulation to prevent stroke and systemic embolism,4 control of ventricular rate, and restoration of sinus rhythm.5 Despite guidelines from multiple specialty societies, there remain significant gaps in the care of AF.6

Get With The Guidelines (GWTG) is a hospital-based, national performance initiative from the American Heart Association (AHA), which has been shown to improve guideline adherence over time.7 The goal of the GWTG-AFIB module is to improve adherence to guidelines for AF management and treatment. The program’s additional objectives will be to increase the use of anticoagulation in appropriate patients, educate patients to improve the safety of anticoagulation, document appropriate rate control for patients with AF, and improve the safety and appropriate use of antiarrhythmic medications.

Methods

Objectives
The overall objective of GWTG is to improve cardiovascular health by providing resources, tools, and partnership to healthcare providers and patients. Expert recommended hospital-based treatment guidelines drive delivery of optimal therapies, validating and benchmarking
organizational performance. Measuring both hospital protocol and patient treatment adherence allows targeted improvement, primarily through education and support. Overall performance of program participants is also subject to investigator-based analysis that facilitates improvements.

The elements of GWTG-AFIB include site-specific institutional stakeholders, hospital recruitment, collaborative workshops and webinars for hospital teams, hospital tool kits, local clinical opinion leaders, and hospital recognition. Data collection and decision support are performed concurrently using an internet-based Patient Management Tool (Outcome, a Quintiles Company, Cambridge, MA). The collaborative learning model includes interactive learning sessions and other communication between multidisciplinary teams from hospitals to facilitate information transfer to produce system change. System change is generally achieved through the plan-do-study-act process.

**Site Selection**

All hospitals will be recruited to participate in GWTG-AFIB by local AHA staff and volunteers, working with key stakeholders in their regions. All hospitals volunteer based on their level of interest in quality improvement in AF care and capacity to fulfill the requirements of the program. Workshops include didactic presentation of clinical trial evidence and the AHA/American College of Cardiology (ACC)/Heart Rhythm Society guidelines for the treatment of AF, followed by examples of successful hospital implementation. These workshops are given by AHA staff and volunteers with expertise in clinical science and quality improvement and are also used for site recruitment.

**Patient Population**

Patients aged ≥18 years will be included if they are admitted to the hospital with a principal diagnosis of AF or atrial flutter (in this article, atrial flutter and AF will be considered together as AF). Hospitals are encouraged to enter patients with a secondary diagnosis of AF as well. In addition, hospitals may enter patients seen in observation and not admitted as inpatients. Patients are excluded if they are evaluated, treated, and discharged from the emergency department with no inpatient admission or observation status.

Case ascertainment of admissions for AF will be conducted by concurrent clinical identification (within the current hospitalization) or by retrospective identification using International Classification of Diseases, Ninth Revision (ICD-9) (2) discharge codes 427.31 or 427.32, followed by medical chart review to confirm case eligibility. The coding instructions indicate that a physician must confirm the diagnosis of AF. The AF must be sustained (>30 seconds) and must not have been precipitated by a transient reversible event (such as sepsis or pneumonia where the AF resolves with treatment) if the patient is discharged in normal sinus rhythm without specific AF therapy. The coding instructions also indicate that a physician must confirm the diagnosis of AF. The AF must be sustained (>30 seconds) and must not have been precipitated by a transient reversible event (such as sepsis or pneumonia where the AF resolves with treatment) if the patient is discharged in normal sinus rhythm without specific AF therapy. The coding instructions are explicit on which therapies are required for inclusion in this scenario. Patients with a documented history of AF are eligible for inclusion. Data from the first 30 patients entered in the Patient Management Tool at each hospital before the start of the intervention will be used as baseline data; the duration of baseline data collection may vary as a function of the hospitals’ admission volume. Hospitals will be characterized based on self-reported status as teaching versus nonteaching (≥1 residency training program) and hospital size (based on number of beds) status. Hospitals will also be characterized based on the presence or absence of a board-certified electrophysiologist on the staff and the presence or absence of an AF ablation program. Data will be collected by participating hospitals without financial compensation.

**Oversight and Funding Sources**

Oversight of the program is performed by the GWTG Executive and Steering Committees and the AHA Executive Database Steering Committee. Boehringer Ingelheim Pharmaceuticals, Inc, and Daiichi Sanyko, Inc, are national sponsors of the American Heart Association/American Stroke Association’s GWTG-AFIB program but provide no oversight on the goals, execution, or publications of the program.

**Data Collection and Components**

The data collection tool supports concurrent data collection as well as retrospective data entry; concurrent collection is encouraged as a process improvement goal in each hospital. The case report form is available in Appendix I in the online-only Data Supplement. The coding instructions for the elements of the case report form are in Appendix II in the online-only Data Supplement. The GWTG-AFIB data collection tool includes predefined logic features and user alerts to identify potentially invalid format or values entry. For each hospitalization, the data elements collected and entered into the Patient Management Tool (Table 1) provide the basis for describing the demographics as well as understanding the clinical course and therapy of AF for the individual patient and across the population (Figure). These data elements are common to other ACC/AHA clinical data standard efforts as well as align with other GWTG programs. Additional elements were added to assess the specific needs and therapies warranted for patients with AF based on the ACCF/AHA guidelines and reflect the core achievement, quality, reporting, and descriptive measures established by the GWTG working group.

Achievement measures reflect current AHA/ACC/American Medical Association perfor- mance measures for AF, coronary artery disease, and heart failure. Quality measures reflect current ACCF/AHA guidelines, which are not included as performance measures in AF and heart failure.

Elements such as demographic data and medical history are captured as they are used for assessing thromboembolic risk and denoting contraindications to various therapies. Information on medications, including specific antiarrhythmic, antiplatelet, and anticoagulant agents, prescribed before and during admission and at discharge (including discharge doses) are also collected so as to define medication utilization within health systems, as well as to determine adherence to evidence-based anticoagulation guidelines. As the current ACCF/AHA guidelines support the use of the CHA2DS2-VASc score in the evaluation of thromboembolic risk and the indication for anticoagulation therapy, assessment of each of the CHA2DS2-VASc score components as well as documentation of the score in the medical record is recorded. The CHA2DS2-VASc score gives a point for each of the following: congestive heart failure, hypertension, age ≥65 years, diabetes mellitus, female sex, and vascular disease (prior myocardial infarction, peripheral vascular disease, or aortic plaque) and 2 points for each of the following: prior stroke or transient ischemic attack and age ≥75 years. In the guideline, anticoagulation is recommended for patients with AF and a score of ≥2. The HAS BLED (bleeding risk factors of hypertension, renal disease, liver disease, stroke, labile INR age ≥65, medication usage predisposing to bleeding, and alcohol usage history) risk calculator is also available on the site. This score is used to calculate the risk of bleeding and includes the following risk factors: hypertension, renal disease, hepatic disease, prior stroke, prior major bleeding or risk of bleeding, labile international normalized ratio, age ≥65 years, medication use, which predisposes patients to bleeding and heavy alcohol use. The AF guideline does not recommend withholding anticoagulation from patients based on this risk score, however, and thus the calculator is provided for informational purposes only. As monitoring and optimization of drug therapy are critical to improving patient safety and outcomes, documentation of a QT interval after initiation of treatment with dofetilide or sotalol, as well as with any increase in dose is evaluated. In addition, documentation of discharge heart rate is obtained, with a target of ≤110 bpm. Finally, the provision of discharge planning (eg, anticoagulation follow-up) and comprehensive patient education on complications and management of AF is essential in making the transition from hospital to home; therefore, documentation of these efforts is evaluated.

Required fields are structured so that valid data must be entered before the form can be saved as a complete record and the data entered into the database. Range checks are used for inconsistent or out-of-range data and prompt the user to correct or review data entries that are outside a predefined range. All hospital personnel using the tool receive individual passwords to create an audit trail for data entered or changed. Training in the use of the tool will be provided online and via telephone for all users. This web-based system uses coding, deidentification, and secure transmission techniques that maintain patient confidentiality, in compliance with current federal privacy.

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Data collected by hospitals will not be independently audited by external medical chart review. The working group updates the protocols and data elements every 6 months.

**Rapid-Cycle Improvement**

One of the primary goals of GWTG-AFIB and other similar programs is to provide an evidence-based set of external metrics that institutions can adapt to facilitate rapid-cycle quality improvement. Passive diffusion of guidelines is rarely sufficient to enact large or lasting changes in clinical practice; additional interventions at the institutional or health system level are often necessary. Effective quality improvement interventions depend on multiple factors, and the most effective interventions usually require a multifaceted approach. A combination of education and outreach, integrated clinical decision support, ongoing audit and feedback, and organizational change geared toward improving specific processes or outcomes are all frequently required for sustained change and allow for rapid-cycle assessment and intervention. GWTG-AFIB encourages and facilitates systematic data acquisition that can be leveraged for quality improvement purposes.

**Hospital Recognition**

The GWTG-AFIB module will use a Performance Achievement Award recognition program similar to GWTG modules for acute myocardial infarction, heart failure, stroke, and resuscitation. The GWTG-AFIB Performance Achievement Award recognition program was created and will be used to publicly recognize participating hospitals meeting each of the individual GWTG-AFIB achievement measures (Table 2) in 85% of eligible hospitalizations. There are 3 levels of recognition based on the duration in which measure conformity at the required level has been demonstrated: bronze (1 calendar quarter); silver (1 year); and gold (≥22 years). Silver and gold award-winning GWTG-AFIB standards. Data collected by hospitals will not be independently audited by external medical chart review. The working group updates the protocols and data elements every 6 months.

### Table 1. Data Elements of the Patient Management Tool

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Specific Data Elements Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>arrival and admission</td>
<td>Date and time of admission Point of origin for admission Inpatient status</td>
</tr>
<tr>
<td>demographic</td>
<td>Age Sex Race and ethnicity Payment source</td>
</tr>
<tr>
<td>medical history</td>
<td>Specific comorbidities (cardiovascular and noncardiovascular) Other risk factors ( liable INR, prior major bleeding, predisposition to bleeding) Prior AF procedures</td>
</tr>
<tr>
<td>diagnosis</td>
<td>Atrial arrhythmia type Primary diagnosis</td>
</tr>
<tr>
<td>medications at admission</td>
<td>Medications according to therapeutic class Specific antiarrhythmic, anticoagulation, and antiplatelet agents</td>
</tr>
<tr>
<td>exams/laboratories before admission</td>
<td>Presenting symptoms related to AF Initial vital signs Initial presenting rhythm Initial EKG Laboratory values</td>
</tr>
<tr>
<td>inhospital care</td>
<td>Procedures during this hospitalization EF-quantitative EF-qualitative Oral medications during hospitalization Parenteral inhospital anticoagulation Documentation of the CHADS2 score Assessment of specific CHADS2 risk factors</td>
</tr>
<tr>
<td>discharge information</td>
<td>Discharge date Discharge disposition on day of discharge Documentation of comfort care measures Discharge heart rate Discharge blood pressure Discharge rhythm EKG findings (closest to discharge) Discharge EKG QRS morphology Laboratory values (closest to discharge)</td>
</tr>
<tr>
<td>discharge medications</td>
<td>ACE-inhibitor ARB Aldosterone antagonist Antiarrhythmic therapy Anticoagulation therapy Antiplatelet(s) Aspirin ß-blocker Calcium channel blocker Digoxin Statin therapy Hydralazine/nitrate Other medications at discharge Risk interventions Smoking cessation counseling given Planned or intended rhythm control or rate control strategy Education and resource material received by patient and caregiver Anticoagulation therapy education given PT/INR planned follow-up Date of PT/INR post discharge Type of provider who will be monitoring the PT/INR Reason for no follow-up PT/INR Documentation of therapeutic lifestyle change diet Documentation of obesity weight management Documentation of activity level Screening for obstructive sleep apnea (Berlin Questionnaire) Referral for evaluation for obstructive sleep apnea Discharge medication instructions provided</td>
</tr>
</tbody>
</table>

ACE indicates angiotensin-converting enzyme; AF, atrial fibrillation; ARB, angiotensin receptor blocker; CHADS2, stroke risk factors including hypertension, age >75, diabetes and stroke; EF, ejection fraction; EKG, electrocardiogram; INR, international normalized ratio; and PT, prothrombin time.
hospitals will be honored at national recognition events, listed by name in advertisements that appear annually in the Best Hospitals issue of US News & World Report, and included in the AHA national Heart Check interactive online map. Prior studies comparing hospitals enrolled in GWTG and receiving a Performance Achievement Award with other hospitals have demonstrated higher quality of care and better outcomes for patients with acute myocardial infarction and heart failure; the better outcomes were explained, at least in part, by better process of care provided by these recognized hospitals.24

Primary and Secondary Analyses

GWTG-AFIB was designed as a quality improvement program. Like other GWTG modules, however, it is expected that it will become a robust tool for observational studies. The primary analyses in the GWTG-AFIB program will assess adherence to the ACC/AHA guideline recommendations and the ACC/AHA AF performance measures,15–16 including those for stroke prevention, rate control, and maintenance of sinus rhythm. Measures were divided into achievement measures and quality measures. Percent adherence to each guideline will be reported back to hospitals. The numerator will be defined as those who met the measure minus exclusions and the denominator as those who qualify for the measure criteria minus exclusions (see Appendix III: Measure Definitions in the online-only Data Supplement). Adherence compared with national and regional averages will be reported to hospitals for benchmarking comparisons.

Secondary analyses will address multiple aspects of AF care including but not limited to adherence to AF guidelines, sex, race, ethnic, and geographical differences in quality of care, inhospital outcomes including stroke and death, outcomes linked to Medicare patients including mortality and readmission, temporal trends in quality of care, and outcome, and characteristics associated with the use of newer anticoagulant agents in patients with AF. A list of the initially planned analyses targeted at the current gaps in knowledge is listed in Appendix IV in the online-only Data Supplement. The GWTG-AFIB program will address both contemporary research priorities25 and those that arise in the lifetime of the program.

The GWTG-AFIB database will likely become a robust tool for answering key questions on the quality of care in patients with AF. Similar to the other Get With The Guidelines registry modules, analysis proposals are submitted to the GWTG Science Subcommittee and reviewed for feasibility, validity, and novelty.26 The database resides at the biostatistical core center and results of approved analyses are released to investigators.

Statistical Analyses

Continuous variables will be reported via medians with 25th and 75th percentiles, and categorical variables will be shown as counts with percentages. Univariate and multivariable approaches will be used to identify factors associated with measures of interest, including the use of guideline-indicated therapies. Associations between patient characteristics and outcomes of interest via logistic regression will be reported with odds ratios and 95% confidence intervals. Associations will be considered statistically significant when 2-sided \( \alpha \) is <0.05. To limit the influence of confounding, multivariable adjustment will be used, including inverse propensity weighting, instrumental variable analysis, or other techniques. Appropriate statistical corrections for repeated measures will be performed. Given the focus on the prevention of stroke and improved survival, standard adjustment models for stroke and all-cause death will be derived and validated for use throughout the program. Missing data will be addressed on an analysis-specific basis. Generalized estimating equations and hierarchical models will be used to adjust for clustering within hospitals when site-specific variance is a concern.

Discussion

Although there has been significant growth in the number of AF registries around the world,1,27–29 there are a relatively limited number of large, multicenter, prospective registries enrolling patients in the United States. The Atrial Fibrillation: Focus on Effective Clinical Treatment Strategies (AFFECTS) Registry examined practice patterns and guideline adherence among cardiologists treating AF in >1400 outpatients and included 1-year follow-up data. The AFFECTS investigators found that anticoagulation use was often not in line with practice guidelines.28 More recently, the Outcomes Registry for Better Informed Treatment of AF I & II has begun with a goal enrollment of >25,000 patients with both incident and prevalent AF across a heterogeneous mix of community practices (internal medicine, cardiology, electrophysiology).29

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**Figure.** Patient Management Tool. This figure shows one of the data entry screens from the Patient Management Tool. It documents that patients have been given education and counseling on tobacco cessation, atrial fibrillation, and anticoagulation. It also documents the treatment strategy for atrial fibrillation and the follow-up strategy for anticoagulation. INR indicates international normalized ratio; and PT, prothrombin time.
Table 2. Achievement, Quality, and Reporting Measures for Get With The Guidelines-AFIB

<table>
<thead>
<tr>
<th>Achievement measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACEI/ARB at discharge for LVSD</td>
</tr>
<tr>
<td>Assessment of thromboembolic risk factors</td>
</tr>
<tr>
<td>β-blocker at discharge for CAD and LVSD</td>
</tr>
<tr>
<td>Discharged on FDA-approved anticoagulation therapy</td>
</tr>
<tr>
<td>PT/INR planned follow-up for patients treated with warfarin</td>
</tr>
<tr>
<td>Statin at discharge in patients with AF with CAD, CVA/TIA, or PVD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldosterone antagonist at discharge for LVSD</td>
</tr>
<tr>
<td>Anticoagulation therapy education</td>
</tr>
<tr>
<td>Atrial fibrillation patient education</td>
</tr>
<tr>
<td>CHADS2, reported</td>
</tr>
<tr>
<td>Discharge heart rate &lt;110 bpm</td>
</tr>
<tr>
<td>Smoking cessation</td>
</tr>
<tr>
<td>Warfarin at discharge for patients with valvular atrial fibrillation or atrial flutter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antiarrhythmic at discharge</td>
</tr>
<tr>
<td>Anticoagulation during hospitalization</td>
</tr>
<tr>
<td>Antiplatelet agent at discharge (including aspirin)</td>
</tr>
<tr>
<td>Antiplatelet (including aspirin) and anticoagulant at discharge</td>
</tr>
<tr>
<td>Aspirin at discharge</td>
</tr>
<tr>
<td>Calcium channel blocker at discharge</td>
</tr>
<tr>
<td>QT interval measured after initiation or increase and sustained treatment with dofetilide or sotalol</td>
</tr>
<tr>
<td>Rhythm control/rate control strategy planned/intended</td>
</tr>
</tbody>
</table>

ACEI indicates angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; CAD, coronary artery disease; CHADS2, stroke risk factors of congestive heart failure including hypertension, age >75, diabetes and stroke; CVA, cerebrovascular accident; FDA, Food and Drug Administration; INR, international normalized ratio; LVSD, left ventricular systolic dysfunction; PT, prothrombin time; PVD, peripheral vascular disease; and TIA, transient ischemic attack.

These registries will follow patients for a minimum of 2 years. A similar international registry, Global Registry on Long-Term Oral Antithrombotic Treatment in Patients with Atrial Fibrillation is also enrolling patients in North America with newly diagnosed AF. Table 3 summarizes the current AF registries.

The GWTG-AFIB registry will complement these and other existing observational studies in several ways. As with other GWTG programs, GWTG-AFIB will be enrolling from a large number of US hospitals and will provide important national data from an inpatient perspective. The core objective of GWTG-AFIB is to provide quality improvement through iterative assessment of guideline-based care. In this way, GWTG-AFIB is unique and will seek to change behavior and improve adherence at the hospital level.

During the past 2 decades, risk factors for stroke in AF have been aggregated into scoring systems to classify patients. The European Society of Cardiology and, most recently, the AHA/ACC/Heart Rhythm Society guidelines have moved to recommending lower treatment thresholds for anticoagulation by changing from the CHADS2 score and adopting the CHA2DS2-VASc score. This adoption of lower treatment thresholds is, in large part, because of gains in safety and reduced risk of intracranial hemorrhage with new oral anticoagulants, contemporary international normalized ratio management with warfarin, and evidence against the use of aspirin as an effective antithrombotic agent. Therefore, contemporary risk stratification is geared toward sensitivity and negative predictive value; the goal is to identify patients with low stroke risk who do not require treatment, rather than only identifying patients at the highest risk of stroke who require treatment.

Despite guidelines from multiple specialty societies, there remain significant gaps in care of AF. Among patients with AF, women, the elderly, and blacks are less likely to be discharged on anticoagulation. Potential reasons for these gaps are multifactorial and may include variation in patient education, overtreatment, undertreatment, or differences in familiarity and experience with clinical guidelines.

The choice between rate and rhythm control is guided by the presence and severity of symptoms in AF, patient preference, and expected safety of antiarrhythmic drug therapy or catheter ablation. In particular, appropriate selection of antiarrhythmic agents in patients with structural heart disease is critical to minimize adverse events associated with antiarrhythmic drugs.

The ability of programs to improve adherence to guidelines in patients with AF has been variable. Johnston et al randomized 12 hospitals to using preprinted orders, education, and a physician champion. There was no difference between intervention and control hospitals in adherence to anticoagulation guidelines. In the Coverdell quality improvement stroke program, 195 hospitals and 4206 patients with stroke and AF were studied. More than 82% of eligible patients with AF received anticoagulation at discharge. This program used protocols, workshops, and order sets. Piccini et al did not demonstrate improved adherence to anticoagulation guidelines in patients with AF and heart failure in the GWTG Heart Failure program over time. Supporting the performance measure with prompts and making them the focus of the quality improvement program may increase adherence. Lewis et al found that adherence to anticoagulation guidelines did not increase in patients with a history of AF, where anticoagulation was not prompted, but did increase in patients when an ECG demonstrated AF during the hospitalization, where treatment was prompted. Under such circumstances, adherence to anticoagulation in patients with stroke and AF increased to >95%.

Limitations

GWTG-AFIB will have several limitations. The GWTG program is voluntary and the hospitals that participate are more likely to be larger teaching hospitals with a strong interest in AF and quality improvement. However, the patient populations in other GWTG registries have been demonstrated to be nationally representative, and there is growing evidence that the selection of participating hospitals in clinical registries does not necessarily result in substantial bias. Participating hospitals are instructed to include all consecutive AF admissions. However, because these processes are not audited, the potential exists for selection bias. Patient data are collected by medical chart review, which is dependent on the accuracy and completeness of documentation. Identifying patients with AF uniformly and accurately can be challenging. It is imperative
that registries and quality improvement programs accurately identify eligible patients and minimize variations in case ascertainment. Although trained GWTG abstractors using specific coding instructions may help to increase the accuracy of identifying the appropriate patient population, potential variation in case ascertainment may influence quality assessments and research findings from GWTG-AFIB. Some patients considered eligible for treatment who were not treated may have had contraindications or other reasons that prevented treatment but were not documented in the medical record. Certain data elements that are potentially important such as AF-specific health status instruments are not being collected. However, an audit of GWTG has shown >90% accuracy of these data. GWTG-AFIB defines quality of care using only predefined performance measures and quality measures that address acute and discharge AF care. Patients discharged from the emergency room will not be initially enrolled. Post discharge quality of care and outcomes will not be directly collected.

Conclusions

Although various treatment regimens are available for patients with AF that are effective in reducing morbidity and likely mortality, adherence to guidelines is low. Quality improvement programs such as GWTG-AFIB may increase adherence to guideline-based therapies and potentially improve outcomes.

Disclosures

Dr Piccini received research funding from ARCA Biopharma, GE Healthcare, ResMed, Johnson & Johnson, and Spectranetics; Dr Turakhia has received funding support from Medtronic, Gilead Sciences, St Jude Medical, Precision Health Economics, iRhythm, American Heart Association (AHA), Veterans Administration, Boehringer Ingelheim, and Janssen Pharmaceuticals; Dr Curtis has received funding support from Medtronic, St Jude Medical, Sanofi Aventis, Pfizer, Bristol Myers Squibb, Janssen, Daiichi Sankyo, and Biosense Webster; R.E. Suter from AHA; and Dr Fonarow from Johnson & Johnson and Medtronic. The other authors report no conflicts.

References


Table 3. Characteristics of Atrial Fibrillation Registries*

<table>
<thead>
<tr>
<th>Population</th>
<th>Countries</th>
<th>Sites</th>
<th>Enrollment</th>
<th>QI Components</th>
<th>Follow-Up</th>
<th>Study Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWTG-AFIB</td>
<td>Inpatient</td>
<td>United States only</td>
<td>...</td>
<td>Yes</td>
<td>2 y</td>
<td>2013 to present</td>
</tr>
<tr>
<td>ORBIT-AF II</td>
<td>Inpatient and outpatient</td>
<td>United States only</td>
<td>300 (United States)</td>
<td>15000</td>
<td>Yes</td>
<td>2 y</td>
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<tr>
<td>GARFIELD (cohort II)</td>
<td>Inpatient and outpatient</td>
<td>United States only</td>
<td>19</td>
<td>540</td>
<td>10600</td>
<td>No</td>
</tr>
<tr>
<td>ORBIT-AF I</td>
<td>Outpatient</td>
<td>United States only</td>
<td>184</td>
<td>10000</td>
<td>Yes</td>
<td>Minimum 2 y</td>
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<tr>
<td>REALIZE AF</td>
<td>Inpatient and outpatient</td>
<td>United States only</td>
<td>26</td>
<td>831</td>
<td>10523</td>
<td>No</td>
</tr>
<tr>
<td>RECORD AF</td>
<td>Inpatient and outpatient</td>
<td>United States only</td>
<td>21</td>
<td>532</td>
<td>5604</td>
<td>No</td>
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<tr>
<td>AFFECTS</td>
<td>Outpatients</td>
<td>United States only</td>
<td>248</td>
<td>1461</td>
<td>No</td>
<td>1 y</td>
</tr>
</tbody>
</table>

*AFFECTS indicates Atrial Fibrillation: Focus on Effective Clinical Treatment Strategies; CMS, Centers for Medicare and Medicaid Services; GARFIELD, Global Anticoagulant Registry in the FIELD; ORBIT-AF, Outcomes Registry for Better Informed Treatment of Atrial Fibrillation Registry; QI, quality improvement; REALIZE AF, Real Life Global Survey Evaluation Patients With Atrial Fibrillation Registry; and RECORD AF, Registry on Cardiac Rhythm Disorders Atrial Fibrillation Registry.

† Possible through linkage to CMS and other datasets.
Heart Association Task Force on Clinical Data Standards (Writing Committee to Develop Data Standards on Atrial Fibrillation); American College of Cardiology; American Heart Association. ACC/AHA key data elements and definitions for measuring the clinical management and outcomes of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Data Standards (Writing Committee to Develop Data Standards on Atrial Fibrillation). Circulation. 2004;109:3223–3243.

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SUPPLEMENTAL MATERIAL
Appendix 1
GWTG AFIB Case Report Form
### PMT FORM SELECTION: Atrial Fibrillation

#### ARRIVAL AND ADMISSION INFORMATION

<table>
<thead>
<tr>
<th>Internal Tracking ID</th>
<th>Physician/Provider NPI:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Arrival Date and Time:

```
__/__/______  __: ___
```

**Legend:** Elements in bold are required

#### Admit Date:

```
__/__/______
```

#### Point of Origin for Admission or Visit:

1. Non-Health Care Facility Point of Origin
2. Clinic
4. Transfer From a Hospital (Different Facility)
5. Transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
6. Transfer from another Health Care Facility
7. Emergency room
8. Information not available
9. Transfer from Hospice and is Under a Hospice Plan of Care or Enrolled in a Hospice Program

#### Was patient admitted as inpatient?

- [ ] Yes
- [ ] No

**If not admitted, was the patient observation status?**

- [ ] Yes
- [ ] No

### DEMOGRAPHIC DATA

#### Date of Birth: __/__/______

#### Gender:

- [ ] Male
- [ ] Female
- [ ] Unknown

#### Race:

- [ ] American Indian or Alaska Native
- [ ] Asian
- [ ] Asian Indian
- [ ] Chinese
- [ ] Filipino
- [ ] Japanese
- [ ] Korean
- [ ] Vietnamese
- [ ] Other Asian
- [ ] Black or African American
- [ ] Native Hawaiian or Pacific Islander
- [ ] Native Hawaiian
- [ ] Guamanian or Chamorro
- [ ] Samoan
- [ ] Other Pacific Islander

**Hispanic Ethnicity:**

- [ ] Yes
- [ ] No/UTD

**If yes,**

- [ ] Mexican, Mexican American, Chicano/a
- [ ] Puerto Rican
- [ ] Cuban
- [ ] Another Hispanic, Latino or Spanish Origin

#### Payment Source:

- [ ] Medicaid (Title 19)
- [ ] Medicare (Title 18)
- [ ] Medicare – Private/HMO/Other
- [ ] No Insurance/Not Documented/UTD
- [ ] Private/HMO/Other

#### Patient Postal Code: _________ - _________

### MEDICAL HISTORY

#### Medical History

- [ ] None
- [ ] Alcohol use/dependence >20 units/week
- [ ] Anemia
- [ ] Cancer
- [ ] Cardiac transplantation
- [ ] Cardiomyopathy
- [ ] Ischemic
- [ ] Non-Ischemic
- [ ] Cognitive impairment
- [ ] COPD
- [ ] Coronary Artery Disease
- [ ] CRT-D (cardiac resynchronization therapy w/ICD)
- [ ] CRT-P (cardiac resynchronization therapy-pacing only)
- [ ] CVA/TIA
- [ ] Ischemic Stroke
- [ ] ICH
- [ ] TIA
- [ ] Depression
- [ ] Diabetes
- [ ] Dialysis
- [ ] Illicit Drug Use
- [ ] Family History of AF
- [ ] Heart failure
- [ ] Hypertension History
- [ ] Uncontrolled, >160 mmHg systolic
- [ ] ICD only
- [ ] LAA Occlusion Device
- [ ] Left Ventricular Hypertrophy
- [ ] Liver Disease (Cirrhosis, Bilirubin >2x Normal, AST/ALT/AP >3x Normal)
- [ ] Mechanical Prosthetic Heart Valve
- [ ] Mitral Stenosis
- [ ] Obstructive Sleep Apnea
- [ ] CPAP
- [ ] Pacemaker
- [ ] Peripheral Vascular Disease
- [ ] Prior Hemorrhage
- [ ] Gastrointestinal
- [ ] Other
- [ ] Prior MI
- [ ] Prior PCI
- [ ] Bare metal stent
- [ ] Drug eluting stent
- [ ] Renal Disease (Dialysis, transplant, Cr >2.6 mg/dL or >200 µmol/L)
- [ ] Rheumatic Heart Disease
- [ ] Sinus Node Dysfunction/Sick Sinus Syndrome
- [ ] Smoker
- [ ] Thyroid Disease
- [ ] Hyperthyroidism
- [ ] Hypothyroidism

#### Other risk factors

- [ ] Labile INR (Unstable/high INRs or time in therapeutic range <60%)?
  - [ ] Yes
  - [ ] No
  - [ ] Unable to determine from the information available in the medical record
Prior Major Bleeding or Predisposition to Bleed (bleeding diathesis, anemia, etc.)?
- Yes
- No
- Unable to determine from the information available in the medical record

Prior AF Procedures:
- None
- Cardioversion
- Ablation
- AF Surgery (Surgical MAZE)

### DIAGNOSIS

#### Atrial Arrhythmia Type:
- **O Atrial Fibrillation**
  - If Atrial Fibrillation:
    - First Detected Atrial Fibrillation
    - Paroxysmal Atrial Fibrillation
    - Persistent Atrial Fibrillation
    - Permanent/long standing Persistent Atrial Fibrillation
    - Unable to Determine
- **O Atrial Flutter**
  - If Atrial Flutter:
    - Typical Atrial Flutter
    - Atypical Atrial Flutter
    - Unable to Determine

Was Atrial Fibrillation/Flutter the patient’s primary diagnosis?
- Yes
- No

If no, what was the patient’s primary diagnosis?
- Acute MI
- COPD
- CVA/TIA
- Heart Failure

Were any of the following first detected on this admission?
- None
- Acute MI
- Coronary Artery Disease
- Diabetes
- Heart Failure
- Liver Disease
- Mitral Stenosis
- Peripheral Vascular Disease
- Ischemic Stroke
- ICH
- TIA

### MEDICATIONS AT ADMISSION

**Medications Used Prior to Admission**

Select all that apply
- Patient on no meds prior to admission
- ACE inhibitor
- Aldosterone Antagonist
- Alpha Blockers
- Angiotensin receptor blocker (ARB)
- Antiarrhythmic
  - Amiodarone
  - Dofetilide
  - Dronedarone
  - Flecaïnide
  - Propafenone
  - Sotalol
  - Other
- Anticoagulation Therapy
  - Warfarin (Coumadin)
  - dabigatran (Pradaxa)
  - argatroban
  - Apixaban (Eliquis)
  - desirudin (Iprivask)
  - Fondaparinux (Arixtra)
  - rivaroxaban (Xarelto)
  - lepirudin (Refludan)
  - Other Anticoagulant
- Antiplatlet agent (not aspirin)
  - Aggrenox (Dipyridamole)
  - Brilinta (Ticagrelor)
  - Clopidogrel
  - Prasugrel (Effient)
  - Ticlid (Ticlopidine)
  - Other
- Aspirin
- Beta Blocker
- Ca channel blocker
  - Dihydropyridine
  - Non-dihydropyridine
  - Digoxin
  - Diuretic
  - Hydralazine Nitrate
  - NSAIDS/COX-2 Inhibitor
  - Statin

### EXAM/LABS AT ADMISSION

Presenting symptoms related to AF
Select all that apply
- No reported symptoms
- Chest pain/tightness/discomfort
- Exercise intolerance
- Palpitations
- Dyspnea at exertion
- Fatigue
- Syncope
- Dyspnea at rest
- Lightheadedness/dizziness
- Weakness
### Initial Vital Signs

- **Height**: _______ O inches O cm  □ Not documented
- **Weight**: _______ O lbs O kg  □ Not documented
- **BMI**: _______ (automatically calculated)  □ Not documented
- **Heart Rate**: _______ bpm  □ Not documented
- **Blood Pressure**: _______ / _______ mmHg (systolic/diastolic)  □ Not documented

### Initial Presenting Rhythm(s)

**Select all that apply**

- □ Atrial Fibrillation  □ Sinus Rhythm  □ Paced
- □ Atrial Flutter  □ Atrial Tachycardia  □ Other

**If paced, underlying Atrial Rhythm**

- □ Sinus Rhythm  □ Atrial fib/flutter  □ Sinus arrest  □ Unknown
- □ Atrial Pacing  □ Ventricular Pacing  □ Atrioventricular

**Automated ECG**

- O Yes  O No

### Initial EKG findings:

- **Resting Heart Rate (bpm)** □ Not Available
- **QRS duration (ms)** □ Not Available
- **PR interval (ms)** □ Not Available

**Labs:**

(closest to admission)

- **Platelet Count**: _______ mm$^3$  □ Not Available
- **SCr**: _______ O mg/dL O µmol/L  □ Not Available
- **Cockroft-Gault (GFR)**: _______ mL/min (auto-calculated)  □ Not Available
- **INR**: □ Not Available
- **Hematocrit**: _______ %  □ Not Available
- **Hemoglobin**: _______ g/dl  □ Not Available
- **TSH**: _______ mIU/L  □ Not Available
- **K**: _______ O mEq/L O mmol/L O mg/dL  □ Not Available
- **Mg**: _______ mg/dL  □ Not Available
- **BUN**: _______ O mg/dL O µmol/L  □ Not Available
- **NT-BNP**: _______ (pg/mL)  □ Not Available
- **BNP**: _______ O pg/mL O pmol/L O ng/L  □ Not Available

### IN-HOSPITAL CARE

**Procedures this hospitalization**

- □ No Procedures
- □ A-Fib Ablation
- □ A-Flutter Ablation
  
  *If A-Fib or A-Flutter Ablation selected above:*
  - □ Cryoablation
  - □ Radio Frequency Ablation
  - □ Cardioversion (check all that apply below)
    - □ Chemical
    - □ Electrical
    - □ TEE Guided
    - □ CRT-D (cardiac resynchronization therapy w/ICD)
  - □ CRT-P (cardiac resynchronization therapy-pacing only)
    - □ ICD only
    - □ LAA Occlusion Device
    - □ Mechanical Prosthetic Heart Valve
    - □ Pacemaker
    - □ PCI/Cardiac Catheterization
      - □ Bare metal stent
      - □ Drug eluting stent
      - □ Surgical MAZE

**EF – Quantitative**

- _______ %  □ Not available

**EF – Qualitative**

- □ Not applicable
- □ Normal or mild dysfunction
- □ Qualitative moderate/severe dysfunction
- □ Performed/results not available
- □ Planned after discharge
- □ Not performed

**Obtained:**

- O This Admission
- O W/in the last year
- O > 1 year ago
<table>
<thead>
<tr>
<th>Oral Medications during hospitalization</th>
<th>Select all that apply</th>
<th>Parenteral In-Hospital Anticoagulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ None</td>
<td>☐ Antiarrhythmic</td>
<td>☐ Unfractionated Heparin IV</td>
</tr>
<tr>
<td>☐ Antiarrhythmic</td>
<td>☐ Amiodarone</td>
<td>☐ full dose LMW Heparin</td>
</tr>
<tr>
<td>☐ Amiodarone</td>
<td>☐ Dofetilide</td>
<td>☐ Other IV Anticoagulant</td>
</tr>
<tr>
<td>☐ Dofetilide</td>
<td>☐ Dronedarone</td>
<td>☐ None</td>
</tr>
<tr>
<td>☐ Dronedarone</td>
<td>☐ Flecaïnide</td>
<td></td>
</tr>
<tr>
<td>☐ Flecaïnide</td>
<td>☐ Propafenone</td>
<td></td>
</tr>
<tr>
<td>☐ Propafenone</td>
<td>☐ Sotalol</td>
<td></td>
</tr>
<tr>
<td>☐ Sotalol</td>
<td>☐ Other</td>
<td></td>
</tr>
<tr>
<td>☐ Other</td>
<td>☐ Anticoagulant</td>
<td></td>
</tr>
<tr>
<td>☐ Warfarin</td>
<td>☐ Dabigatran</td>
<td></td>
</tr>
<tr>
<td>☐ Dabigatran</td>
<td>☐ Rivaroxiban</td>
<td></td>
</tr>
<tr>
<td>☐ Rivaroxiban</td>
<td>☐ Apixiban</td>
<td></td>
</tr>
<tr>
<td>☐ Apixiban</td>
<td>☐ Warfarin</td>
<td></td>
</tr>
<tr>
<td>☐ Warfarin</td>
<td>☐ Dabigatran</td>
<td></td>
</tr>
<tr>
<td>☐ Dabigatran</td>
<td>☐ Rivaroxiban</td>
<td></td>
</tr>
<tr>
<td>☐ Rivaroxiban</td>
<td>☐ Other</td>
<td></td>
</tr>
<tr>
<td>☐ Other</td>
<td>☐ Anticoagulant</td>
<td></td>
</tr>
<tr>
<td>☐ Warfarin</td>
<td>☐ Dabigatran</td>
<td></td>
</tr>
<tr>
<td>☐ Dabigatran</td>
<td>☐ Rivaroxiban</td>
<td></td>
</tr>
<tr>
<td>☐ Rivaroxiban</td>
<td>☐ Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parenteral In-Hospital Anticoagulation</th>
<th>O Unfractionated Heparin IV</th>
<th>O full dose LMW Heparin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O Other IV Anticoagulant</td>
<td>O None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHADS2 reported? (in medical record)</th>
<th>O Yes</th>
<th>O No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, total reported score in medical record</td>
<td>__________</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHADS2 Risk Factors Assessed</th>
<th>☐ All were assessed (Check all yes)</th>
<th>☐ Diabetes mellitus assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior stroke or TIA assessed</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>Age ≥ 75 years assessed</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>Hypertension assessed</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
</tbody>
</table>

| Medical reason(s) documented by a physician, nurse practitioner, or physician assistant for not assessing risk factors | O Yes | O No |

**DISCHARGE INFORMATION**

<table>
<thead>
<tr>
<th>Discharge Date/Time</th>
<th><strong>/</strong>/____   <strong><strong>:</strong></strong></th>
<th>☐ MM/DD/YYYY only</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>What was the patient’s discharge disposition on the day of discharge?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Home</td>
</tr>
<tr>
<td>2 – Hospice – Home</td>
</tr>
<tr>
<td>3 – Hospice – Health Care Facility</td>
</tr>
<tr>
<td>4 – Acute Care Facility</td>
</tr>
<tr>
<td>5 – Other Health Care Facility</td>
</tr>
<tr>
<td>6 – Expired</td>
</tr>
<tr>
<td>7 – Left Against Medical Advise/AMA</td>
</tr>
<tr>
<td>8 – Not Documented or Unable to Determine (UTD)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If Other Health Care Facility</th>
<th>O Intermediate Care facility (ICF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Skilled Nursing Facility (SNF)</td>
<td>O Other</td>
</tr>
<tr>
<td>O Inpatient Rehabilitation Facility (IRF)</td>
<td></td>
</tr>
<tr>
<td>O Long Term Care Hospital (LTCH)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When is the earliest physician/APN/PA documentation of comfort measures only?</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Day 0 or 1</td>
</tr>
<tr>
<td>O Day 2 or after</td>
</tr>
<tr>
<td>O Timing unclear</td>
</tr>
<tr>
<td>O Not Documented/UTD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vital Signs (closest to discharge)</th>
<th>BP-Supine</th>
<th>mmHg (systolic/diastolic)</th>
<th>☐ Not documented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Rate</td>
<td>_______</td>
<td>bpm</td>
<td>☐ Not documented</td>
</tr>
</tbody>
</table>

| Reason documented by a physician, nurse practitioner, or physician assistant for discharging patient with heart rate >110 bpm? | O Yes | O No |
|---------------------------------------------------------------------------------------------------------------|
| Discharge Rhythm(s) (closest to discharge) | ☐ Atrial Fibrillation | ☐ Sinus Rhythm | ☐ Paced |
| | ☐ Atrial Flutter | ☐ Atrial Tachycardia | ☐ Other |
### EKG findings (closest to discharge):

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resting Heart Rate (bpm)</td>
<td></td>
<td>□ Not Available</td>
</tr>
<tr>
<td>QTc (ms)</td>
<td></td>
<td>□ Not Available</td>
</tr>
<tr>
<td>PR interval (ms)</td>
<td></td>
<td>□ Not Available</td>
</tr>
</tbody>
</table>

### Discharge EKG QRS Morphology

- Normal
- RBBB
- LBBB
- NS-IVCD
- Not Available

### Labs (closest to discharge)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platelet Count</td>
<td></td>
<td>□ Not Available</td>
</tr>
<tr>
<td>SCr</td>
<td></td>
<td>□ Not Available</td>
</tr>
<tr>
<td>INR</td>
<td></td>
<td>□ Not Available</td>
</tr>
</tbody>
</table>

### DISCHARGE MEDICATIONS

#### ACEI

- Prescribed?: Yes, No
- Medication:
- Dosage:
- Frequency:
- Contraindicated?: Yes, No

#### ARB

- Prescribed?: Yes, No
- Medication:
- Dosage:
- Frequency:
- Contraindicated?: Yes, No

#### Aldosterone Antagonist

- Prescribed?: Yes, No
- Medication:
- Dosage:
- Frequency:
- Contraindicated?: Yes, No

#### Antiarrhythmic

- Prescribed?: Yes, No
- Medication:
- Dosage:
- Frequency:
- Were Dofetilide or Sotalol newly initiated or dose increased this hospitalization?: Yes, No
- If yes, was a QT interval documented after 5 doses and prior to discharge?: Yes, No, NA
- Contraindicated?: Yes, No

#### Anticoagulation Therapy

- Prescribed?: Yes, No
- Class:
- Medication:
- Dosage:
- Frequency:
- Are there any relative or absolute contraindications to oral anticoagulant therapy? (Check all that apply):
  - Allergy
  - Comorbid illness (e.g. renal/liver)
  - Patient refusal/preference
  - Unable to adhere/monitor
  - Physician preference
  - Occupational risk
  - Current pregnancy
  - High bleeding risk
  - Recent operation
  - Prior intracranial hemorrhage
  - Need for dual antiplatelet therapy
  - Frequent falls/frailty
- Contraindicated?: Yes, No

#### Antiplatelet(s)

- Prescribed?: Yes, No
- Medication:
- Dosage:
- Frequency:
- Contraindicated?: Yes, No

#### Aspirin

- Prescribed?: Yes, No
- Dosage:
- Frequency:
- Contraindicated?: Yes, No

#### Beta Blocker

- Prescribed?: Yes, No
- Medication:
- Dosage:
- Frequency:
- Contraindicated?: Yes, No

#### Calcium Channel Blocker

- Prescribed?: Yes, No
- Medication:
- Dosage:
- Frequency:
- Contraindicated?: Yes, No
<table>
<thead>
<tr>
<th>Medicine</th>
<th>Prescribed?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digoxin</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>If yes,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dosage:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequency:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statin Therapy</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Hydralazine Nitrate</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Other Medications at Discharge</td>
<td>□ Diuretic □ NSAIDS/COX-2 Inhibitor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RISK INTERVENTIONS**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking Cessation Counseling Given</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Rhythm Control/Rate Control Strategy Planned/Intended</td>
<td>O Rhythm Control Strategy Planned</td>
<td>O Rate Control Strategy Planned</td>
</tr>
<tr>
<td>Patient and/or caregiver received education and/or resource materials regarding all of the following:</td>
<td>□ All were addressed <em>(Check all)</em></td>
<td></td>
</tr>
<tr>
<td>Risk factors</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Stroke Risk</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Management</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Medication Adherence</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Follow-up</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>When to call provider</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Anticoagulation Therapy Education Given</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>PT/INR Planned Follow-up</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Who will be following patients INR?</td>
<td>O Home INR Monitoring</td>
<td>O Anticoagulation Warfarin Clinic</td>
</tr>
<tr>
<td>Date of INR test planned post discharge:</td>
<td><strong><strong>/</strong></strong>/______</td>
<td></td>
</tr>
<tr>
<td>System Reason for no PT/INR Planned Follow-up?</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>TLC (Therapeutic Lifestyle Change) Diet</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Obesity Weight Management</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Activity Level/Recommendation</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Screening for obstructive sleep apnea (Berlin Questionnaire)</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Referral for evaluation of obstructive sleep apnea if positive screen</td>
<td>O Yes</td>
<td>O No</td>
</tr>
<tr>
<td>Discharge medication instruction provided</td>
<td>O Yes</td>
<td>O No</td>
</tr>
</tbody>
</table>

**OPTIONAL FIELDS**

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<th>Field 1</th>
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**Additional Comments**

**ADMIN**

<table>
<thead>
<tr>
<th>ICD-9 Principal Diagnosis Code</th>
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<td>ICD-9 Other Diagnoses Codes</td>
<td>4.</td>
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<td>ICD-9-CM Principal Procedure Code</td>
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**ICD-9 Other Procedure Codes**

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**CPT Code**

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<tbody>
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</table>

**Was this Case Sampled?**

- Yes
- No

During this hospital stay, was the patient enrolled in a clinical trial in which patients with the same condition as the measure set were being studied?

- Yes
- No
### CHADS2 Calculation Tool (found on IN HOSPITAL Tab)

(Enabled if “No” is selected for CHADS2 Reported (in medical record)?)

- Prior stroke or TIA
- Age ≥ 75
- Hypertension
- Diabetes
- Congestive Heart Failure

### OTHER RISK SCORES

#### CHADS2-VASc Score

- Congestive Heart Failure
- Hypertension (blood pressure consistently above 140/90 or treated with hypertension medication)
- Age ≥ 75
- Age 65-74
- Diabetes
- Prior stroke/TIA/Thromboembolism
- Vascular Disease History (CAD, Prior MI, or PAD)
- Female Gender

---


---

**DISCLAIMER:** These tools (ATRIA and HAS-BLED) are presented for informational purposes only and not as an endorsement of their use in clinical decision making. Many of the same risk factors for warfarin-related hemorrhage are also risk factors for AF-associated ischemic stroke. The use of these tools as an exclusion for anticoagulation is not part of AHA/ACC guideline-recommended care for patients with AF. Additionally, some of the component elements in the HAS-BLED score, such as Labile INR and Prior Major Bleeding or Pre-Disposition to Bleeding may be difficult to reliably ascertain from the information available in the health record. The HAS-BLED score should be interpreted with this in mind.

#### ATRIA Risk Score

- Age ≥ 75 years
- Anemia (Defined as Hemoglobin < 13 g/dL in men and < 12 g/dL in women)
- Severe Renal Disease (defined as a GFR < 30ml/min or on dialysis)
- History of Hypertension
- Prior hemorrhage (intracranial, gastrointestinal, other hemorrhage)

---

### HAS-BLED Score

- Hypertension History (uncontrolled, >160 mmHg systolic)
- Renal Disease (Dialysis, transplant, Cr >2.6 mg/dL or >200 µmol/L)
- Liver Disease (Chronic Hepatic Disease, including (e.g.) Cirrhosis, Bilirubin >2x Normal, AST/ALT/AP >3x Normal)
- Stroke History
- Prior Major Bleeding or Predisposition to Bleeding (bleeding diathesis, anemia, etc.)
- Labile INR (Unstable/high INRs or time in therapeutic range <60%)
- Age > 65
- Medication Usage Predisposing to Bleeding (Antiplatelet agents, NSAIDs)
- Alcohol Usage History (>20 units per week)

Appendix 2
GWTG-AFIB Coding Instructions
Coding Instructions for the Atrial Fibrillation Patient Management Tool(TM)

Last Updated October 2013

TABLE OF CONTENTS

- ENTRY CRITERIA
- ARRIVAL AND ADMISSION INFORMATION
- DEMOGRAPHIC DATA
- MEDICAL HISTORY
- DIAGNOSIS
- MEDICATIONS AT ADMISSION
- EXAM/LABS AT ADMISSION
- IN-HOSPITAL CARE
- DISCHARGE INFORMATION
- DISCHARGE MEDICATIONS
- RISK INTERVENTIONS
- OPTIONAL FIELDS
- ADMIN
- OTHER RISK SCORES
- TABLES

ATRIAL FIBRILLATION PATIENT ENTRY CRITERIA

Include:

- Patients with a principal diagnosis of Atrial Fibrillation admitted to your hospital as an inpatient.
- Patients with a principal diagnosis of Atrial Flutter admitted to your hospital as an inpatient.
- Hospitals are encouraged to enter patients with a secondary diagnosis of Atrial Fibrillation or Atrial Flutter admitted to the hospital as inpatient.

Optional:

- Hospitals may choose to enter patients seen in observation and not admitted as inpatients.

Exclude:

- Patients evaluated, treated and discharged from the ED (with no inpatient admission or admission to observation status).
- Patients < 18 years of age.

Below are Atrial Fibrillation and Atrial Flutter ICD-9 Codes for your reference:

- 427.3 Atrial Fibrillation and flutter
- 427.31 Atrial Fibrillation
REQUİRED: Patient ID

The patient identification number is a unique patient ID number assigned to the patient by the site for that admission. Enter a de-identified number in order to track your patient. Do NOT use date of birth, social security numbers, medical record numbers or any other identifiable information. The Patient ID is case-sensitive.

Example: You might use numbers, letters or any combination, e.g. BMC019

ARRIVAL AND ADMISSION INFORMATION

- Internal Tracking ID
- Physician/Provider NPI
- Arrival Date/Time
- Admit Date
- Point of Origin for Admission or Visit
- Was patient admitted as inpatient?

OPTIONAL: Internal Tracking ID

Enter an additional non-identifiable number to track your patient. Do NOT use patient names, dates of birth, social security numbers, medical record numbers, or any other identifiable information.

OPTIONAL: Physician/Provider NPI

Use this field to capture a physician or other provider with an NPI number in order to track providers’ involvement in the care of the patient. Physician/Provider NPI is an optional field for each institution and can be assigned based on the Continuous Quality Improvement (CQI) needs of the institution.

National Provider ID (NPI) is assigned by CMS to all physicians. You do not need to know NPIs for your physicians, but rather, when adding or editing physicians in your Physician/Provider NPI list, a lookup tool will let you search by name, and assign the correct NPI for you.

For more information on adding a provider to the dropdown list, contact your administrator or the Outcome Help Desk.

REQUİRED: Arrival Date/Time

*Element definition from Specifications Manual for National Hospital Inpatient Quality Measures*

The earliest documented month, day, and year, and time the patient arrived at the hospital.

- MM = Month (01-12)
• DD = Day (01-31)
• YYYY = Year (2001 - Current Year)
• HH = Hour (00-23)
• MM = Minutes (00-59)
• UTD = Unable to Determine

Time must be recorded in military time format.
With the exception of Midnight and Noon:

- If the time is in the a.m., conversion is not required
- If the time is in the p.m., add 12 to the clock time hour

Examples:

- Midnight - 00:00, Noon - 12:00
- 5:31 am - 05:31, 5:31 pm - 17:31
- 11:59 am - 11:59, 11:59 pm - 23:59

Note: 00:00 = midnight. If the time is documented as 00:00 11-24-20XX, review supporting documentation to determine if the Arrival Date should remain 11-24-20XX or if it should be converted to 11-25-20XX. When converting Midnight or 24:00 to 00:00 do not forget to change the Arrival Date.
Example: Midnight or 24:00 on 11-24-20XX = 00:00 on 11-25-20XX

Notes for Abstraction (Date/Time)

- If the date/time of arrival is unable to be determined from medical record documentation, select "UTD."
- For times that include “seconds”, remove the seconds and record the time as is.
  - Example: 15:00:35 would be recorded as 15:00
- The medical record must be abstracted as documented (taken at "face value"). When the date/time documented is obviously in error (not a valid format/range or outside of the parameters of care [after the Discharge Date]) and no other documentation is found that provides this information, the abstractor should select "UTD."
- Examples Date:
  - Documentation indicates the Arrival Date was 03-42-20XX. No other documentation in the list of ONLY Acceptable Sources provides a valid date. Since the Arrival Date is outside of the range listed in the Allowable Values for "Day", it is not a valid date and the abstractor should select "UTD."
  - Patient expires on 02-12-20XX and all documentation within the ONLY Acceptable Sources indicates the Arrival Date was 03-12-20XX. Other documentation in the medical record supports the date of death as being accurate. Since the Arrival Date is after the Discharge Date (death), it is outside of the parameter of care and the abstractor should select "UTD."
- Examples Time:
  - Documentation indicates the Arrival Time was 3300. No other documentation in the list of ONLY ACCEPTABLE SOURCES provides a valid time. Since the Arrival Time is outside of the range in the Allowable Values for “Hour,” it is not a valid time and the abstractor should select “UTD”.
- Note: Transmission of a case with an invalid date as described above will be rejected from the QIO Clinical Warehouse and the Joint Commission’s Data Warehouse. Use of "UTD" for Arrival Date/Time allows the case to be accepted into the warehouse.
• Review the ONLY ACCEPTABLE SOURCES to determine the earliest date the patient arrived at the ED, nursing floor, or observation, or as a direct admit to the cath lab. Use the earliest date documented unless other documentation suggests the patient was not in the hospital on that date. The intent is to utilize any documentation which reflects processes that occurred in the ED or hospital.
  o In determining if there is documentation which suggests the patient was not in the hospital on a given date, sources outside of the ONLY ACCEPTABLE SOURCES list can be referenced. However, do not use dates described as hospital arrival on these sources for Arrival Date/Time.
  o Examples:
    - ED ECG dated/timed as 05-07-20xx 2142. ED Greet Date/Time 05-08-20xx 0125. ED Triage Date/Time 05-08-20xx 0130. EMS record shows patient was enroute at 05-08-20xx 0100. Enter 05-08-20xx for Arrival Date.
    - ED ECG timed as 1742. ED Greet Time 2125. ED Triage Time 2130. EMS record shows patient was enroute at 2100. Enter 2125 for Arrival Time.
    - ED face sheet noted arrival date/time as 02-27-20xx 2300. The first vitals are recorded at 02-28-20xx 0020. There is no documentation to support that the patient was not in the hospital on 02-27-20xx 2300. Enter 02-27-20xx for Arrival Date.
    - ED face sheet noted arrival time as 1000. The first vitals are recorded at 1120. There is no documentation to support that the patient was not in the hospital at 1000. Enter 1000 for Arrival Time.
    - ED Triage Date/Time 03-22-20xx 2355. ED rhythm strip dated/timed 03-23-20xx 0030. EMS report indicates patient was receiving EMS care from 0005 through 0025 on 03-23-20xx. Enter 03-23-20xx for Arrival Date.
    - ED Triage Time 0800. ED rhythm strip 0830. EMS report indicates patient was receiving EMS care from 0805 through 0825. Enter 0830 for Arrival Time.

• The source “Emergency department record” includes any documentation from the time period that the patient was an ED patient – e.g., ED face sheet, ED consent/Authorization for treatment forms, ED/Outpatient Registration/sign-in forms, ED vital sign record, triage record, ED physician orders, ECG reports, telemetry/rhythm strips, laboratory reports, x-ray reports.
• Do not use preprinted dates/times on a vital sign graphic record.
• The source “Procedure notes” refers to procedures such as cardiac caths, endoscopies, and surgical procedures. Procedure notes do not include ECG and x-ray reports.
• The arrival date/time may differ from the admission date/time.
• If the patient is in either an outpatient setting of the hospital other than observation status (e.g., dialysis, chemotherapy, cardiac cath) or a SNF unit of the hospital, and is subsequently admitted to acute inpatient, use the date/time the patient arrived at the ED or on the floor for acute inpatient care as the arrival date/time.
• Observation status:
  o If the patient was admitted to observation from an outpatient setting of the hospital, use the date/time the patient arrived at the ED or on the floor for observation care as the arrival date/time.
  o If the patient was admitted to observation from the ED of the hospital, use the date/time the patient arrived at the ED as the arrival date/time.
• Direct Admits:
  o If the patient is a “Direct Admit” to the cath lab, use the earliest date/time the patient arrived at the cath lab (or cath lab staging/holding area) as the arrival date/time.
  o For “Direct Admits” to acute inpatient or observation, use the earliest date/time the patient arrived at the nursing floor or in observation (as documented in the ONLY ACCEPTABLE SOURCES) as the arrival date/time.
If the patient was transferred from your hospital’s satellite/free-standing ED or from another hospital within your hospital’s system (as an inpatient or ED patient), and there is one medical record for the care provided at both facilities, use the arrival date/time at the first facility.

For inpatient strokes, enter the actual hospital arrival date/time and not the date/time of symptom discovery. Note this is not from the definition from Specifications Manual for National Hospital Inpatient Quality Measures.

**Suggested Data Sources:**

**ONLY ACCEPTABLE SOURCES:**

- Emergency department record
- Nursing admission assessment/admitting note
- Observation record
- Procedure notes
- Vital signs graphic record

**Inclusion Guidelines for Abstraction:** None

**Exclusion Guidelines for Abstraction:** Addressographs/stamps

**REQUIRED: Admit Date**

Element definition from Specifications Manual for National Hospital Inpatient Quality Measures

The month, day, and year of admission to acute inpatient care.

- MM = Month (01-12)
- DD = Day (01-31)
- YYYY = Year (20xx)

Note: For CMS, only dates that are equal to or less than 120 days from the Discharge Date will be accepted into the QIO Clinical Warehouse. Refer to the Data Transmission section of this manual for further guidance related to data transmission.

**Notes for Abstraction:**

- The intent of this data element is to determine the date that the patient was actually admitted to acute inpatient care. Because this data element is critical in determining the population for all measures, the abstractor should NOT assume that the claim information for the admission date is correct. If the abstractor determines through chart review that the date from billing is incorrect, for purposes of abstraction, she/he should correct and override the downloaded value.
- If using claim information, the ‘Statement Covers Period’ is not synonymous with the ‘Admission Date’ and should not be used to abstract this data element. These are two distinctly different identifiers:
  - The Admission Date (Form Locator 12) is purely the date the patient was admitted as an inpatient to the facility.
  - The Statement Covers Period (“From” and “Through” dates in Form Locator 6) identifies the span of service dates included in a particular claim. The “From” Date is the earliest date of service on the claim.
• For patients who are admitted to Observation status and subsequently admitted to acute inpatient care, abstract the date that the determination was made to admit to acute inpatient care and the order was written. Do not abstract the date that the patient was admitted to Observation.
  o Example:
  o Medical record documentation reflects that the patient was admitted to observation on 04-05-20xx. On 04-06-20xx the physician writes an order to admit to acute inpatient effective 04-05-20xx. The Admission Date would be abstracted as 04-06-20xx; the date the determination was made to admit to acute inpatient care and the order was written.
• If there are multiple inpatient orders, use the order that most accurately reflects the date that the patient was admitted. The admission date should not be abstracted from the earliest admission order without regards to substantiating documentation. If documentation suggests that the earliest admission order does not reflect the date the patient was admitted to inpatient care, this date should not be used.
  o Example:
  o Preoperative Orders are dated as 04-06-20xx with an order to admit to Inpatient. Postoperative Orders, dated 05-01-20xx, state to admit to acute inpatient. All other documentation supports that the patient presented to the hospital for surgery on 05-01-20xx. The admission date would be abstracted as 05-01-20xx.
• For inpatient strokes, enter the actual hospital admit date and not the date of stroke symptom discovery. Note this is not from the definition from Specifications Manual for National Hospital Inpatient Quality Measures.

Suggested Data Sources:
ONLY ALLOWABLE VALUES

1. Physician orders
2. Face Sheet
3. UB-04, Field Location: 12

Excluded Data Sources
UB-04, Field Location: 06

Inclusion Guidelines for Abstraction: None
Exclusion Guidelines for Abstraction:

• Admit to observation
• Arrival date

REQUIRED: Point of Origin for Admission or Visit

A code indicating the point of patient origin for this admission.

Allowable Values:

  o 1 Non-Health Care Facility Point of Origin
    The patient was admitted to this facility upon order of a physician. Usage Note: Includes patients coming from home, a physician’s office, or workplace
  o 2 Clinic
    The patient was admitted to this facility as a transfer from a freestanding or non-freestanding clinic.
  o 4 Transfer From a Hospital (Different Facility)
    The patient was admitted to this facility as a hospital transfer from an acute care facility where

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he or she was an inpatient or outpatient. Usage Note: Excludes Transfers from Hospital Inpatient in the Same Facility (See Code D).

- 5 Transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
  The patient was admitted to this facility as a transfer from a SNF or ICF where he or she was a resident.

- 6 Transfer from another Health Care Facility
  The patient was admitted to this facility as a transfer from another type of health care facility not defined elsewhere in this code list.

- 7 Emergency Room
  The patient was admitted to this facility after receiving services in this facility’s emergency room. Usage Note: Excludes patients who came to the emergency room from another health care facility.

- 9 Information not Available
  The means by which the patient was admitted to this hospital is unknown.

- F Transfer from Hospice and is Under a Hospice Plan of Care or Enrolled in a Hospice Program
  The patient was admitted to this facility as a transfer from hospice.

Notes for Abstraction:

- The intent of this data element is to focus on patients’ place or point of origin rather than the source of a physician order or referral.
- The point of origin is the direct source for the particular facility.
  - **Example 1:** A SNF patient has chest pain is taken to the emergency department of Hospital A where it is determined that she is suffering an acute myocardial infarction. The patient is then transferred to Hospital B for admission as an inpatient. The Point of Origin for Hospital A would be 5 – Transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF); the point of origin code for Hospital b would be 4 – Transfer from a Hospital.
  - **Example 2:** An auto accident victim was taken to the emergency department of Hospital A by EMTs, stabilized, then transferred to Hospital B where he receives additional treatment in the ED, and then is admitted as an inpatient to Hospital B. The Point of Origin code for Hospital A is 7 – Emergency Room; the point of origin for Hospital B would be 4 – Transfer from a Hospital.

- The emergency room code is limited to patients who receive unscheduled emergency services in the ER not originating from another health care facility. As in the auto accident example above, a victim brought to the ER would be coded as 7 since the patient was not previously at any other kind of health care facility. Code 7 also includes self-referrals in emergency situations that require immediate medical attention.

Usage Notes:

**Transfers - From an Another Facility**

- **Overall Scenario:** While at another acute care hospital/facility, the patient is seen by the emergency room physicians. The patient is then transferred to a second facility through the emergency room.
- The Point of Origin code would be Code 4 - Transfer from a Hospital (Different Facility) due to the patient being seen at the first acute care facility's emergency room.
- If the decision to admit was not made by the first facility's emergency room personnel and instead was made by the second facility's emergency room doctor, the Point of Origin code would still be 4. Even though the decision to admit was not made by the first facility, the patient was still seen by the second facility's emergency room personnel and a decision to transfer was made by them.
• The patient is seen by the first facility's emergency room physician; the patient arrives at the second emergency room, but receives no additional emergency room care at the second facility. Instead, the patient is transferred immediately to the Heart Catheterization Department of the second facility, the Point of Origin code would still be 4. Since the patient is seen by a different hospital's emergency room personnel, the decision to transfer the patient is first made by the first facility. The arrival of the patient at the receiving hospital's emergency room and subsequent transfer to the Heart Catheterization Department is secondary to the transfer from the previous facility transfer.

Transfers - Skilled Nursing Facility

• Overall Scenario: A resident from a skilled nursing facility is taken to an acute care hospital for medical care.
• The Point of Origin code would be Code 5 - Transfer from a Skilled Nursing Facility.
• The patient's family stopped by to pick-up the patient for a routine doctor's office visit (regularly scheduled); but while at the doctor's office the doctor sends the patient to the emergency room of the acute care hospital. The Point of Origin code would be 5 as the original Point of Origin is the skilled nursing facility. The subsequent visit to the doctor's office (or even the emergency room of the hospital) is secondary to the events that took place earlier that day.

Suggested Data Sources:

• Emergency department record
• Face sheet
• History and physical
• Nursing admission notes
• Progress notes
• UB-04, Field Location: 15

REQUIRED: Was patient admitted as inpatient?

• Yes: Patient was admitted to your hospital as an inpatient.
• No: Patient was evaluated in the Emergency Department (ED), found to have a diagnosis of atrial fibrillation or atrial flutter and was never admitted to your hospital as an inpatient. Include here patients that are discharged from observation status without ever being admitted as an inpatient.

Notes for Abstraction:

• Select “No” if the patient was discharged from the hospital as an observation stay (and was never admitted as an inpatient stay), regardless of the physical location or billing status of the patient during the course of their treatment. Typically these patients are found in the ED/observation treatment unit, holding units, or in observation status beds in the inpatient area.
• Observation status should be determined based upon the patient’s hospital stay and the intent of the medical team, and not based upon billing status or physical location of the patient. For example, if the medical team documents that the patient should be admitted as an inpatient, but the claim is later denied as inpatient stay (and is instead reimbursed at observation level) you would still enter this patient as an inpatient as the intent of the medical team was for this patient to be admitted as an inpatient stay. In this case, select “Yes” for this data element.
If not admitted, was the patient observation status?

- **Yes**: Patient was evaluated in the ED and discharged from observation status without a qualifying inpatient admission.
- **No**: Patient was evaluated and discharged from the Emergency Department (ED) without observation status. Include here patients that are transferred from the ED to another acute care hospital, those that are discharged directly from the ED to home or other location, those that leave against medical advice (AMA) from the ED, those that die in the ED, and those that are discharged from observation status without ever being admitted as an inpatient.

Notes for Abstraction:

- Observation status should be determined based upon the patient’s hospital stay and the intent of the medical team, and not based upon billing status or physical location of the patient. For example, if the medical team documents that the patient should be admitted as an inpatient, but the claim is later denied as inpatient stay (and is instead reimbursed at observation level) you would still enter this patient as an inpatient as the intent of the medical team was for this patient to be admitted as an inpatient stay. In this case, select “Yes” for this data element.
- If you select “No”, do not complete the CRF as the patient does not meet inclusion criteria. At this time, patients evaluated, treated and discharged from the ED (with no inpatient admission or observation stay) are to be excluded.

DEMOGRAPHIC DATA

- **Date of Birth**
- **Gender**
- **Race**
- **Hispanic Ethnicity**
- **What is the patient’s source of payment for this episode of care?**
- **Payment Source**
- **Patient Postal Code**

REQUIRED: Date of Birth

*Element definition from Specifications Manual for National Hospital Inpatient Quality Measures*

The month, day, and year the patient was born.

**Note:** Patient's age (in years) is calculated by Admission Date minus Birthdate. The algorithm to calculate age must use the month and day portion of admission date and birthdate to yield the most accurate age.

- Date: MM/DD/YYYY

Notes for Abstraction:
• Because this data element is critical in determining the population for all measures, the abstractor should NOT assume that the claim information for the birthdate is correct.
• If the abstractor determines through chart review that the date is incorrect, she/he should correct and override the downloaded value.
• If the abstractor is unable to determine the correct birthdate through chart review, she/he should default to the date of birth on the claim information.

Suggested Data Sources:
• Emergency department record
• Face sheet
• Registration form
• UB-04, Field Location: 10

Inclusion Guidelines for Abstraction: None
Exclusion Guidelines for Abstraction: None

REQUIRED: Gender

Element definition from Specifications Manual for National Hospital Inpatient Quality Measures
The patient's documented sex on arrival at the hospital.

• Male
• Female
• Unknown

Notes for Abstraction:

• Collect the documented patient’s sex at admission or the first documentation after arrival.
• Consider the sex to be unable to be determined and select “Unknown” if:
  o The patient refuses to provide their sex.
  o Documentation is contradictory.
  o Documentation indicates the patient is a Transsexual.
  o Documentation indicates the patient is a Hermaphrodite.

Suggested Data Sources:

• Consultation notes
• Emergency department record
• Face sheet
• History and physical
• Nursing admission notes
• Progress notes
• UB-04, Field Location: 11

Inclusion Guidelines for Abstraction: None
Exclusion Guidelines for Abstraction: None

REQUIRED: Race

Select the patient's self-assessed race/ethnicity, or if not available, the physician or institution's assessment. Assumptions should not be made based on physical characteristics. This data allows for analysis of race-related
patterns of care. If patient is multi-racial, select each race they designate. Select all that apply from the list provided. Hold down the "Ctrl" key on the keyboard to select multiple options or to deselect an option. Select all that apply from the list provided. If the patient is Asian or Native Hawaiian/Pacific Islander, select the specific sub-category (or sub-categories) of race if known. Selection of a race sub-category is optional.

Options include:

- **American Indian/Alaska Native**: A person having origins in any of the original peoples of North and South American (including Central America) and who maintains tribal affiliation or community attachment (e.g., any recognized tribal entity in North and South America (including Central America), Native American).
- **Asian**: A person having origins in any of the original peoples of the Far East, southeast Asia, or the Indian subcontinent, including for example, India, China, Philippines, Japan, Korea, Vietnam, or Other including, but not limited to Cambodia, Malaysia, Hmong, and Thailand. If Asian, select the specific sub-category (or sub-categories). Select all that apply from the list provided.
  - Asian Indian
  - Chinese
  - Filipino
  - Japanese
  - Korean
  - Vietnamese
  - Other Asian: The patient identified as some other Asian sub-category not provided in the options above or did not identify a sub-category.
- **Black or African American**: A person having origins in any of the black racial groups of Africa. Terms such as “Haitian” or “Negro” can be used in addition to “Black or African American”.
- **Native Hawaiian/Pacific Islander**: A person having origins in any of the other original peoples of Hawaii, Guam or Marianas Islands, Samoa, or other Pacific Islands. If Native Hawaiian/Pacific Islander, select the specific sub-category (or sub-categories). Select all that apply from the list provided.
  - Native Hawaiian
  - Guamanian or Chamorro
  - Samoan
  - Other Pacific Islander: The patient identified as some other Native Hawaiian/Pacific Islander subcategory not provided in the options above or did not identify a subcategory.
- **White**: Patients race is White or a person having origins in in any of the original peoples of Europe, Middle East or North Africa (e.g., Caucasian, Iranian, White)
- **UTD (Unable to determine)**: Unable to determine the patient’s race or not stated (e.g., not documented, conflicting documentation or patient unwilling to provide). The data element Hispanic Ethnicity is required in addition to this Race data element.

**Notes for Abstraction:**

- The data element, Hispanic Ethnicity, is required in addition to this data element.
- Although the terms "Hispanic" and "Latino" are actually descriptions of the patient's ethnicity, it is not uncommon to find them referenced as race. If the patient's race is documented only as Hispanic/Latino, select "White". If the race is documented as mixed Hispanic/Latino with another race, use whatever race is given (e.g., Black-Hispanic - select "Black"). Other terms for Hispanic/Latino include Chicano, Cuban, H (for Hispanic), Latin American, Latina, Mexican, Mexican-American, Puerto Rican, South or Central American, and Spanish.
- If the Asian or Native Hawaiian/Pacific Islander patient does not identify a subcategory, leave the sub-category blank.

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REQUIRED: Hispanic Ethnicity

Documentation that the patient is of Hispanic ethnicity or Latino.

- Yes: Patient is of Hispanic ethnicity or Latino.
- If the patient is of Hispanic ethnicity or Latino, select the specific sub-category (or sub-categories) identified by the patient.
  - Mexican, Mexican American, Chicano/a
  - Puerto Rican
  - Cuban
- Another Hispanic, Latino, or Spanish Origin: The patient identified as some other Hispanic, Latino or Spanish origin not provided in the options above.
- Notes for Abstraction: If the patient did not identify a subcategory, leave this field blank
- No/UTD: Patient is not of Hispanic ethnicity or Latino or unable to determine from medical record documentation.

Inclusion Guidelines for Abstraction: A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race is to be considered of Hispanic or Latino ethnicity. The term, "Spanish origin", can be used in addition to "Hispanic or Latino".

Examples:

- Black-Hispanic
- Chicano
- H
- Hispanic
- Latin American
- Latino/Latina
- Mexican-American
- Spanish
- White-Hispanic

Exclusion Guidelines for Abstraction: None

REQUIRED: What is the patient’s source of payment for this episode of care?

- Medicare: The patient has Medicare as a payment source.
- Non-Medicare: The patient does not have Medicare as a payment source or unable to determine from medical record documentation.

Notes for Abstraction:

- If Medicare is listed as the primary, secondary, tertiary, or even lower down on the list or payers, select “1”.
- If the patient is an Undocumented Alien or Illegal immigrant, select “ 1.” Undocumented Alien: Section 1011 of the Medicare Modernization Act of 2003 allows for reimbursement for services rendered to patients who are: Undocumented or illegal aliens (immigrants), Aliens who have been paroled into a United States port of entry and Mexican citizens permitted to enter the United States on a laser visa.
• The data element Payment Source – Medicare should not be used for determining the Initial Patient Population and Sample counts. Refer to the data element Initial Patient Population Size – Medicare Only/Non-Medicare Only and Sample Size – Medicare Only/Non-Medicare Only within the Transmission Alphabetical Data Dictionary section.
• Medicare includes, but is not limited to:
  o Medicare Fee for Service (includes DRG or PPS)
  o Black Lung
  o End Stage Renal Disease (ESRD)
  o Railroad Retirement Board (RRB)
  o Medicare Secondary Payer

REQUIRED: Payment Source

What is the source of payment for the services provided to the patient for this episode of care? Record ALL payment sources.

• Medicaid (Title 19): Medicaid is listed as a payment source.
• Medicare (Title 18): Medicare is listed as a payment source and has a standard Patient HIC Number. This would include Medicare Fee for Service (include DRG or PPS), Black Lung, End Stage Renal Disease (ESRD), Railroad Retirement Board (RRB) and Medicare coverage as a secondary payer and may include Medicare HMO/Medicare Advantage.
• Medicare – Other: Medicare is listed as a payment source and does not have a standard Patient HIC Number. This would include Undocumented Alien (Illegal immigrant) status and may include Medicare HMO/Medicare Advantage.
• No Insurance/Not Documented/UTD: The patient has no insurance coverage, the payment source is not documented, unable to determine the payment source, or the payment source does not coincide with one of the above options.
• Other: There is a payment source other than Medicare or Medicaid (e.g., Veterans Administration [VA], CHAMPUS [TRICARE], Workers' Compensation or private insurance).

Notes for Abstraction:

• Refer to the CMS National Hospital Quality Measure Data Transmission sub-section, within the Transmission section, for valid patient HIC# format.
• If Medicare is the patient’s primary payment source, but the HIC# is not documented within the medical record, select “Medicare Other.”
• Undocumented Alien: Section 1011 of the Medicare Modernization Act of 2003 allows for reimbursement for services rendered to patients who are: Undocumented or illegal aliens (immigrants), Aliens who have been paroled into a United States port of entry and Mexican citizens permitted to enter the United States on a laser visa.
• If checking "Self Pay/No Insurance" or "Not Documented", then no other selections should be checked. Patients may have a combination of "Medicare", "Medicaid", and "Private/VA/Champus/Other Insurance".
• Socioeconomic Demographics. States may use alternative names for Medicaid within their respective states. Be mindful of your states name for medicaid (e.g., MassHealth).
REQUIRED: Patient Postal Code

Record the postal code of the patient's residence. For the United States zip codes the hyphen is implied. If the patient is determined to not have a permanent residence, then the patient is considered homeless and Homeless should be checked.

If the patient resides in another country, the zip or postal code from that country should be entered as a string of alpha-numeric characters. E.G. the zip code for a patient who lives in Bras d'Or, Canada should have their zip code entered as "B1Y3X9" with no spaces.

If the postal code of the patient is unable to be determined from medical record documentation, enter the provider's postal code.

MEDICAL HISTORY

- Medical History
- Other risk factors
- ALabile INR (Unstable/high INRs or time in therapeutic range <60%)?
- Prior Major Bleeding or Predisposition to Bleeding (bleeding diathesis, anemia etc.)?
- Prior AF Procedures

REQUIRED: Medical History

Identify from the following list what the patient's past medical history includes.

Notes for Abstraction:

- Select these elements if the conditions are known to exist prior to this encounter. Do not include elements that were newly diagnosed during hospitalization and were not previously part of medical history. Therefore, in a case of a patient with newly-diagnosed carotid stenosis, do not select carotid stenosis in the medical history even if it is clear that the stenosis existed prior to the hospitalization.
- This should include secondary diagnoses relevant to this admission as well as risk factors.
- Make the selection even when a condition (for example, hyperlipidemia) is well-controlled or normalized because of ongoing medication or treatment.

Options:

- **None**: The patient has no history of the below listed conditions prior to this encounter.
- **Alcohol use > 20 units/alcohol dependency**: Patient has a current history of consuming 20 or more units of alcohol per week. If documentation indicates that the patient consumes less than 20 units of alcohol per week, do NOT select.
  - In the absence of documentation regarding quantity of alcohol consumed, documentation of current alcohol dependency or alcohol use disorder, or current treatment for alcohol dependency is acceptable.
  - Do NOT select if the patient has a past history of alcohol dependency but does not currently consume greater than 20 units or currently have an alcohol use disorder or dependency.

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• **Anemia:** Patient with a history of chronically low hemoglobin. This includes a past medical history of anemia and/or notation of low hemoglobin content (less than the lower limit of normal). For men, less than 13.0 grams per deciliter (130 grams per liter). For women, 12.0 grams per deciliter (120 grams per liter).
  o Do NOT select anemia based on lab values in the medical record. There must be a confirmed diagnosis.

• **Cancer:** Patient has a history of any cancer EXCEPT non-melanoma skin cancers.

• **Cardiac transplantation:** History of the patient having received a heart transplant prior to this encounter.

• **Cardiomyopathy:** Patient has a history of cardiomyopathy including dilated, hypertrophic, restrictive, arrhythmogenic right ventricular dysplasia (ARVD), or other specific cardiac muscle disease.
  If the patient has a history of cardiomyopathy, indicate whether the etiology is ischemic or non-ischemic. If the etiology or cause is not documented, leave this blank.

• **Ischemic:** The patient’s cardiomyopathy etiology is ischemic heart disease and may be documented as a history of heart attack, MI, or CAD.

• **Non-Ischemic:** The patient’s cardiomyopathy etiology is not ischemic heart disease and may be documented as a history of hypertension, alcohol or drug abuse, chemotherapy, viral, postpartum, familial, unknown or idiopathic.

• **Cognitive impairment:** Patient has a history of impairment of mental activities associated with thinking, learning, and memory. Examples may include documentation of cognitive impairment, cognitively impaired, confused, dementia, memory loss, mentally retarded, or obtunded.

• **COPD:** Patient has a history of chronic obstructive pulmonary disease (eg, chronic bronchitis and emphysema) or currently receiving long-term treatment with inhaled or oral pharmacological therapy (eg, beta-adrenergic agonist, anti-inflammatory agent, leukotriene receptor antagonist, or steroid) for the indication of lung disease.

• **Coronary Artery Disease:** Patient has a previous history of any of the following: Coronary artery stenosis 50% (by cardiac catheterization or other modality of direct imaging of the coronary arteries), Previous CABG surgery, Previous PCI, Previous MI.

• **CRT-D (cardiac resynchronization therapy w/ICD):** History of the patient undergoing CRT-D (CRT combined with implantable cardioverter defibrillator) prior to this encounter. CRT is also known as Bi-Ventricular Pacing.

• **CRT-P (cardiac resynchronization therapy-pacing only):** History of the patient undergoing CRT-P pacing only placement prior to this encounter. CRT is also known as Bi-Ventricular Pacing.

• **CVA/TIA:** Patient has a history ischemic stroke, hemorrhagic stroke or TIA prior to this encounter. This diagnosis should be confirmed by a physician. Do NOT select simply based upon a CT or MRI available in the medical record or ICD-9 codes from prior encounters.
  If the patient has a history of CVA/TIA, indicate type.

  • **Ischemic Stroke:** Previous history of ischemic stroke (i.e. any focal neurological deficit of abrupt onset caused by a disturbance in blood supply that did not resolve within 24 hours) confirmed by a standard neurological examination with or without a positive imaging study, or an event of presumed ischemic origin that did not resolve within 24 hours, but the imaging showed a new lesion.)
    o **ICH:** Previous history of bleeding into or around the brain including: hemorrhagic conversion of a primary ischemic stroke, subarachnoid hemorrhage, intracerebral hemorrhage, or subdural and epidural hematomas).
    o **TIA:** Previous history of transient ischemic attack (i.e. patient has a history of any sudden new focal neurological deficit of presumed ischemic origin as determined by a standard neurological exam that resolved completely within 24 hours, with a brain image study not revealing a new lesion.)

• **Depression:** Patient has a history of treated depression or currently taking antidepressant medication.
• **Diabetes:** Patient has a history of physician diagnosed Type I or Type II diabetes or currently receiving treatment with oral hypoglycemic agents or insulin. Do NOT select diabetes based on a patient’s statement about high sugars or elevated glucose. Do NOT select diabetes based on lab values in the medical record. There must be a confirmed diagnosis. This does not include gestational diabetes.

• **Dialysis:** The patient has a history of receiving renal dialysis treatments either by hemodialysis or peritoneal dialysis prior to this encounter.

• **Illicit Drug Use:** The patient has a history of current, recent, or remote abuse of any illicit drug (e.g., cocaine, methamphetamine, marijuana) or controlled substance.

• **Family History of AF:** The patient has a first degree relative (mother, father, sister, brother) who had onset of atrial fibrillation at less than 60 years of age.

• **Heart failure:** The patient has a history of being in a state of heart failure prior to this encounter. This includes evidence or knowledge of symptoms prior to this encounter consistent with a diagnosis of heart failure including dyspnea, fluid retention, low cardiac output secondary to cardiac dysfunction; or rales, jugular venous distention (JVD), pulmonary edema, or cardiogenic shock whether or not the patient is on prescribed medications. A previous hospital admission with principal diagnosis of heart failure is considered evidence of heart failure history. A low ejection fraction alone, without clinical evidence of heart failure, does not qualify as heart failure.

• **Hypertension:** The patient has a history of high blood pressure defined as resting blood pressure >140mmHg systolic and/or >90mmHg diastolic on at least 2 occasions prior to this encounter or currently receiving antihypertensive pharmacologic treatment.

• **Uncontrolled, >160 mmHg systolic:** If the patient has a history of hypertension, indicate whether the patient’s blood pressure is uncontrolled, defined as systolic blood pressure greater than 160 mm Hg.

• **ICD only:** History of the patient having received an implantable cardioverter defibrillator (ICD) prior to this encounter. Select this field only if an ICD alone without biventricular pacing (CRT) was placed prior to this encounter.

• **LAA Occlusion Device:** History of the patient having received a left atrial appendage (LAA) occlusion device prior to this encounter.

• **Left Ventricular Hypertrophy:** Patient has a previous diagnosis or documentation of left ventricular hypertrophy (preferably confirmed by echocardiography or MRI).

• **Liver Disease (Cirrhosis, Bilirubin >2x Normal, AST/ALT/AP >3x Normal):** Patient has a history of chronic liver disease, cirrhosis or biochemical evidence of significant hepatic derangement (eg, bilirubin greater than 2 times normal, AST/ALT/AP greater than 3 times upper limit of normal.
  - Do NOT select liver disease based on lab values in the medical record. There must be a confirmed diagnosis.

• **Mechanical Prosthetic Heart Valve:** History of the patient having received a mechanical prosthetic heart valve prior to this encounter. Only select this if the patient received a mechanical valve. Do NOT select if the patient has a bioprosthetic valve only.

• **Mitral Stenosis:** Patient has a history of moderately severe or severe mitral stenosis (defined by estimated mitral valve area by catheterization or echocardiography of less than 1.0 cm²). prior to this encounter.

• **Obstructive Sleep Apnea:** The patient has a history or previous diagnosis of obstructive sleep apnea.

• **CPAP:** If the patient has a history of obstructive sleep apnea, does the patient regularly use a continuous positive airway pressure (CPAP) machine.

• **Pacemaker:** History of the patient having received permanent pacemaker implantation prior to this encounter. This includes ventricular-single chamber and atrial-ventricular dual chamber pacemakers. DO NOT select this field if the patient has an implantable cardioverter defibrillator (ICD) or biventricular pacemaker (CRT) implantation prior to the current encounter.

• **Peripheral Artery Disease:** The patient has a history of lower extremity peripheral artery disease (PAD) (from iliac to tibials). This includes documentation that the patient has had any of these conditions, symptoms of PAD or interventions: arterial and venous thrombosis intermittent claudication,
previous vascular reconstruction, bypass surgery, or percutaneous revascularization on the abdominal aorta or the lower extremity vessels, abdominal or thoracic surgery. Excludes renal, coronary, cerebral, and mesenteric vessels and aneurysm.

- **Prior Hemorrhage:** The patient has a history of any major or minor bleeding prior to this encounter (i.e. gastrointestinal, retroperitoneal, intracranial etc.). This would include any prior outpatient or inpatient ICD-9 diagnosis code of hemorrhage, including by specific organ system.
- If the patient has a history of hemorrhage, select the site.
- **Gastrointestinal:** The patient has a history of gastrointestinal bleeding prior to this encounter.
- **Other:** The patient has a history of bleeding involving a site other than gastrointestinal. This would include intracranial hemorrhage.
- **Prior MI:** The patient has a history of physician diagnosed MI, hospital admission for MI, or EKG evidence of an old MI prior to this event.
- **Prior PCI:** History of the patient having undergone PCI of any type (balloon angioplasty, atherectomy, stent, intracoronary brachytherapy, or other) prior to the current encounter.
- If PCI was a stent, select the type of stent.
  - Bare metal stent
  - Drug eluting stent
- **Renal Disease (Dialysis, transplant, SCr >2.6 mg/dL or >200 µmol/L):** The patient has a history of renal transplantation, receives chronic dialysis or has serum creatinine greater than 2.6 mg/dL or 200 µmol/L prior to this encounter.
  - Do NOT select renal disease based on lab values in the medical record. There must be a confirmed diagnosis.
- **Rheumatic Heart Disease:** The patient has a history of rheumatic heart disease or rheumatic valvular disease prior to this encounter. This includes, history of acute rheumatic fever/carditis (usually determined through correspondence with major and minor criteria or history of valve disease with echocardiographic findings suggestive of or diagnostic of rheumatic valvular disease
- **Sinus Node Dysfunction/Sick Sinus Syndrome:** The patient has a history of sinus node dysfunction or sick sinus syndrome and may include documentation of sinus bradycardia, sinus arrest, sinoatrial exit block, tachycardia-bradycardia syndrome prior to this encounter.
- **Smoker:** The patient has smoked cigarettes anytime during the year prior to hospital arrival.

**Notes for Abstraction:**

- If there is definitive documentation anywhere in the ONLY ACCEPTABLE SOURCES that the patient either currently smokes or is an ex-smoker that quit less than one year prior to arrival, select “Yes,” regardless of whether or not there is conflicting documentation.
- If there is NO definitive documentation of current smoking or smoking within one year prior to arrival in any of the ONLY ACCEPTABLE SOURCES select “No.” The following examples would not count as inclusions:
  - “Smoked in the last year: ?”
  - “Probable smoker”
  - “Most likely quit 3 months ago”
- Classify a form as a nursing admission assessment if the content is typical of nursing admission assessments (e.g., med/surg/social history, current meds, allergies, physical assessment) AND the form is completed/reviewed by a nurse or labeled as a “nursing” form.
- For the History and physical (H&P) source, use only the H&P report for the current admission. The H&P may be a dictated report, a handwritten report on an H&P form, or a separate entry labeled as the H&P in the progress notes. Additional documentation such as a "history" or "physical" existing only as a sub-section within a progress note or consultation note should NOT be used.

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Disregard documentation of smoking history or history of tobacco use if current smoking status or timeframe that patient quit is not defined (e.g., "20 pk/yr smoking history", "History of tobacco abuse").

If there is documentation of current smoking or tobacco use, or smoking or tobacco use within one year prior to arrival, and the type of product is not specified, assume this refers to cigarette smoking and select "Yes."

Do not include documentation of smoking history referenced as a "risk factor" (e.g., "risk factor: tobacco," "risk factor: smoking," "risk factor: smoker"), where current smoking status is indeterminable.

**Guidelines for Abstraction:**

### Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>o + smoker, type of product not identified</td>
<td>o chewing tobacco use only</td>
</tr>
<tr>
<td>o + tobacco use, type of product not identified</td>
<td>o cigar smoking only</td>
</tr>
<tr>
<td>o History of smoking and documentation that the patient quit &quot;several months ago&quot;</td>
<td>o Cigarette smoking within one year prior to arrival, or any of the other inclusion terms, described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table</td>
</tr>
</tbody>
</table>

- **Thyroid Disease:** The patient has a history of hyperthyroidism including prior medical treatment for hyperthyroidism such as radioactive iodine treatment, thyroidectomy or anti-thyroid medications (propylthiouracil and methimazole (Tapazole)) or hypothyroidism including currently taking thyroid supplementation for hypothyroidism.

- If the patient has a history of thyroid disease, indicate whether it is hyper or hypothyroidism.
  - Hyper
  - Hypo

**REQUIRED: Other risk factors**

**REQUIRED: Labile INR (Unstable/high INRs or time in therapeutic range <60%)?**

Does the patient have a history of unstable or high INR or time on therapeutic range less than 60%?

- Yes: Patient has a history of unstable or high INR or time on therapeutic range less than 60%.
- No: Patient does NOT have a history of unstable or high INR or time on therapeutic range less than 60%.
- Unable to determine from the information available in the medical record

**Notes for Abstraction:**
• Therapeutic range is defined as INR 2 to 3 inclusive.
• Documentation indicating the patient has highly variable INR, unstable INR, high INRs or labile INR would be acceptable to select “Yes”.
• It is acceptable to use records outside of the hospitalization to determine INR status.
  o Time in therapeutic range may be determined from clinic records or other outpatient records the abstractor can access.

REQUIRED: Prior Major Bleeding or Predisposition to Bleeding (bleeding diathesis, anemia etc.)?

• Yes: Patient has a history of prior major bleeding or a history of predisposition to bleeding.
• No: Patient does NOT have a history of prior major bleeding or a history of predisposition to bleeding.
• Unable to determine from the information available in the medical record.

Notes for Abstraction:

• Prior major bleeding is defined as history of bleeding requiring hospitalization and/or causing a decrease in hemoglobin level of greater than 2 g/L and/or requiring blood transfusion. Do NOT include history of hemorrhagic stroke. If hemorrhagic stroke is the ONLY prior major bleeding history and the patient has no predisposition to bleeding, select “No”.
• A history of predisposition to bleeding may include bleeding diathesis, anemia or patient taking antiplatelet NSAID/Cox 2 prior to admission.

REQUIRED: Prior AF Procedures

Indicate whether the patient underwent any of these procedures for the treatment of atrial fibrillation prior to this encounter.

• **Cardioversion**: Patient underwent intentional therapy (electrical or chemical) of atrial fibrillation prior to this encounter.
• **Ablation**: Patient underwent catheter based atrial fibrillation ablation including radio frequency ablation, cryoablation, or other techniques prior to this encounter.
• **AF Surgery (Surgical MAZE)**: Patient underwent atrial fibrillation surgery including MAZE, other surgical techniques, and ablation applied during surgery prior to this encounter.

Notes for Abstraction:

• DO NOT select the procedure if it was ONLY performed during this encounter. Only select the procedure if it was performed prior to this encounter.
• Select the procedure even if it was unsuccessful.
• Only select the procedure if it was performed for the treatment of atrial fibrillation. If cardioversion or ablation was performed but there is no documentation that it was to treat atrial fibrillation it is acceptable to select the procedure.
• Electrical cardioversion includes transthoracic electrical cardioversion or transvenous electrical cardioversion.
DIAGNOSIS

- **Atrial Arrhythmia Type**
- **Was Atrial Fibrillation/Flutter the Patients Primary Diagnosis?**
- **Were any of the following first detected on this admission?**

**Atrial Arrhythmia Type**

Indicate whether the patient’s atrial arrhythmia was atrial fibrillation or atrial flutter.

- **Atrial Fibrillation**: The patient’s atrial arrhythmia is atrial fibrillation or it is unclear from medical record documentation whether the atrial arrhythmia is atrial fibrillation or atrial flutter.
  - If Atrial Fibrillation: If the patients atrial arrhythmia is atrial fibrillation, select the classification.
    - First Detected Atrial Fibrillation: Atrial fibrillation has not been detected prior to this encounter and is not part of the patient’s medical history.
    - Paroxysmal Atrial Fibrillation: Atrial fibrillation has been detected prior to this encounter but was self-terminating within 7 days of recognized onset.
    - Persistent Atrial Fibrillation: Atrial fibrillation has been detected prior to this encounter but was self-terminating beyond 7 days or was terminated electrically or pharmacologically.
    - Permanent/long standing Persistent Atrial Fibrillation: Atrial fibrillation continues for longer than 1 year or cardioversion failed or was not attempted.
    - Unable to Determine: Unable to determine the type of atrial fibrillation based information available in the medical record.
  - **Atrial Flutter**: The patient’s atrial arrhythmia is atrial flutter.
  - If Atrial Flutter: If the patients atrial arrhythmia is atrial flutter, select the classification.
    - Typical Atrial Flutter
    - Atypical Atrial Flutter
    - Unable to Determine

**Notes for Abstraction:**

- The atrial arrhythmia type must be confirmed and documented by a physician. Abstractors should not make an interpretation based upon an ECG present in the medical record.
- If it is unclear from medical record documentation whether the atrial arrhythmia is atrial fibrillation or atrial flutter (i.e. atrial fib/flutter) select “Atrial Fibrillation” and then select the appropriate classification.
- In determining classification (type) of atrial fibrillation use only the physician documented classification. Use the classification closest to the time of discharge as classification can change from admission to discharge.
  - Examples:
    - Patient 001 is admitted with a diagnosis of paroxysmal atrial fibrillation. During the hospitalization, electrical cardioversion is performed but was not successful. Select “Permanent/long standing Persistent Atrial Fibrillation.”
    - Patient 002 is admitted with a diagnosis of permanent atrial fibrillation. During the hospitalization chemical cardioversion is performed and is successful and patient is discharged in sinus rhythm. Select “Persistent Atrial Fibrillation.”
- If you are unable to determine atrial fibrillation classification, select “Unable to Determine”
- If you are unable to determine the atrial flutter classification select “Unable to Determine”
REQUIRED: Was Atrial Fibrillation/Flutter the Patients Primary Diagnosis?

Was atrial fibrillation or atrial flutter the primary diagnosis for the admission, as determined by the judgment of the physician at the time of hospital discharge?

Yes: Atrial fibrillation or atrial flutter is the principal diagnosis for the admission, as determined by the judgment of the physician at the time of hospital discharge.

No: Atrial fibrillation/flutter is NOT the principal diagnosis for the admission, as determined by the judgment of the physician at the time of hospital discharge.

Notes for Abstraction:

- This is the final diagnosis defined in the Uniform Hospital Discharge Data Set (UHDDS) as "that condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care." and not the suspected diagnosis at the time of admission. Select the patient's diagnosis based on the clinical information found in the medical record. If uncertain, consult ICD-9-CM diagnosis code.
- The determination of this principal diagnosis should be done independently of the ICD-9-CM code assigned and should be based upon the physicians clinical diagnosis. Ideally the physician’s clinical diagnosis should be equivalent to the final ICD-9-CM code. However, in some circumstances another ICD-9-CM code may be chosen. When there is a discrepancy, please consult your hospital’s physician lead and/or the hospital administrator responsible for assigning ICD-9 codes.
- This could include principal ICD-9 codes: 427.3- Atrial Fibrillation and flutter, 427.31- Atrial Fibrillation and 427.32- Atrial Flutter.

REQUIRED: If no, what was the patient’s primary diagnosis?

If the patient’s primary diagnosis is not atrial fibrillation/flutter, select the patient’s primary diagnosis for the admission, as determined by the judgment of the physician at the time of hospital discharge.

- Acute MI: Includes patients with a physician confirmed diagnosis of acute MI that could include discharges with an ICD-9-CM diagnosis code of 410.0 – 410.92.
- COPD: Includes patients with a physician confirmed diagnosis of COPD that could include discharges with an ICD-9 diagnosis code of 490- Bronchitis, not specified as acute or chronic, 491-Chronic bronchitis, 492-Emphysema, 493 Asthma, 494 Bronchiectasis, 495 Extrinsic allergic alveolitis, 496 Chronic airway obstruction, not elsewhere classified
- CVA/TIA: Includes patients with a physician confirmed diagnosis of ischemic or hemorrhagic stroke, transient ischemic attack or stroke not specified that could include discharges with an ICD-9-CM diagnosis code of 430-436.
- Heart Failure: Includes patients with a physician confirmed diagnosis of heart failure that could include discharges with an ICD-9-CM diagnosis code of 428, 402.01, 402.11 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93.
- Surgery: Includes patients who have undergone planned cardiac surgery and were not admitted for medical treatment of an acute cardiac condition (i.e. valve replacement/repair, elective CABG etc.) Do NOT include elective PCI or other catheter based procedures.
- Other: The patient’s diagnosis cannot be accurately captured under or is something other than those provided.

Notes for Abstraction:
- This is the final diagnosis defined in the Uniform Hospital Discharge Data Set (UHDDS) as "that condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care." and not the suspected diagnosis at the time of admission. Select the patient's diagnosis based on the clinical information found in the medical record. If uncertain, consult ICD-9-CM diagnosis code.
- The determination of the primary diagnosis should be done independently of the ICD-9-CM code assigned and should be based upon the physicians clinical diagnosis. Ideally the physician’s clinical diagnosis should be equivalent to the final ICD-9-CM code. However, in some circumstances another ICD-9-CM code may be chosen. When there is a discrepancy, please consult your hospital’s physician lead and/or the hospital administrator responsible for assigning ICD-9 codes.

REQUIRED: Were any of the following first detected on this admission?

Select all of the conditions below that were not part of the patient’s previous medical history but were newly diagnosed during this admission. This should include secondary diagnoses as well as risk factors newly identified during this admission.

- Acute MI: A new diagnosis of acute MI was made any time during the hospitalization in a patient without a prior medical history of MI.
- Coronary Artery Disease: A new diagnosis of coronary artery disease was made any time during the hospitalization or hospitalization in a patient without a prior medical history of coronary artery disease.
- Diabetes: A new diagnosis of diabetes mellitus was made any time during the hospitalization in a patient with no prior medical history of diabetes mellitus.
- Heart Failure: A new diagnosis of heart failure was made any time during the hospitalization in a patient without a prior medical history of heart failure.
- Mitral Stenosis: A new diagnosis of moderately severe or severe mitral stenosis was made any time during the hospitalization in a patient without a prior medical history of mitral stenosis.
- Liver Disease: A new diagnosis of liver disease (i.e. cirrhosis) was made any time during the hospitalization in a patient without a prior medical history of liver disease.
- Peripheral Arterial Disease: A new diagnosis of peripheral arterial disease was made any time during the hospitalization in a patient without a prior medical history of peripheral arterial disease.
- Stroke: A new diagnosis of ischemic or hemorrhagic stroke was made any time during the hospitalization in a patient without a prior medical history of stroke.
- TIA: A new diagnosis of transient ischemic attack (TIA) was made any time during the hospitalization in a patient without a prior medical history of TIA.

Notes for Abstraction:

- Do NOT select conditions based on lab values or other test/procedure results in the medical record. There must be a confirmed physician diagnosis. EXCEPTIONS include:
  - Select “Coronary Artery Disease” if the patient has an acute MI, receives PCI or CABG or if a report from cardiac catheterization or other modality of direct imaging of the coronary arteries done during this hospitalization has documentation of coronary artery stenosis greater than or equal to 50% AND past medical history does NOT include MI, PCI or CABG or CAD.
  - Select “Mitral Stenosis” if the patient has an estimated mitral valve area by catheterization or echocardiography of less than 1.0 cm2.
  - Select “Peripheral Arterial Disease” if the patient has newly diagnosed lower extremity (from iliac to tibials) or upper extremity (from subclavian to brachials) peripheral artery disease (PAD). This includes documentation that the patient has undergone vascular reconstruction, bypass...
surgery, or percutaneous revascularization on the abdominal aorta or the lower extremity vessels, abdominal or thoracic surgery during this admission, newly diagnosed arterial and venous thrombosis.

- Peripheral Arterial Disease does not include renal, coronary, cerebral, and mesenteric vessels and aneurysm.

MEDICATIONS AT ADMISSION

- Medications Used Prior to Admission

REQUIRED: Medications Used Prior to Admission

Select all medications that were used prior to admission. Include only those medications which are part of an outpatient medical regimen prior to presentation to the hospital. The recorded medications should reflect maintenance/ scheduled medications and doses taken by the patient. Do not record medications that have been discontinued more than 14 days prior to admission. Do not record additional medications administered after presentation to the hospital. Do not include PRN medications unless they have been taken within 14 days prior to admission.

o See Table 1 for ACEIs
o See Table 2 for Aldosterone Antagonist
o See Table 3 for Alpha Blockers
o See Table 4 for ARBs
o See Table 5 for Other Antiarrhythmics: In addition to the specific antiarrhythmic drugs listed on the CRF, select “Other” if the patient was taking any other Class I (Sodium Channel Blockers), Class III (Potassium Channel Blockers) or unclassified antiarrhythmic drugs listed in Table 5 as these drugs are not captured under other specific medication classes collected in this element. Class II - Beta Blockers, Class IV- Calcium Channel Blockers and Digoxin are captured under the respective drug classes.

o See Table 6 for Anticoagulation Therapy
o See Table 7 for Aspirin and Aspirin Containing Medications
o See Table 8 for Beta Blockers
o See Table 9 for Calcium Channel Blockers
o See Table 10 for Diuretics
o See Table 11 for Hydralazine and Nitrate Medications
o See Table 12 for NSAIDS/COX-2 Inhibitor: Select if taken on average more than once per week.

o See Table 13 for Statin Medications

EXAM/LABS AT ADMISSION

- Presenting symptoms related to AF
- Initial Vital Signs
- If paced, underlying Atrial Rhythm

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• If paced, pacing type
• Automated EKG
• Initial EKG findings
• Labs (closest to admission)

OPTIONAL: Presenting symptoms related to AF (Select all that apply)

Select all patient symptoms present at the time of the initial evaluation or reported by the patient as being present prior to arrival.

• No reported symptoms: The patient did not report any symptoms related to atrial fibrillation or was asymptomatic.
• Chest pain/tightness/discomfort: Patient experiencing chest pain, pressure or tightness jaw pain, arm pain or other angina equivalent.
• Exercise intolerance: Patient describes a reduced ability to perform activities because of symptoms of dyspnea or fatigue.
• Dyspnea at exertion: Patient describes uncomfortable awareness of breathing while exerting him/herself.
• Palpitations: Patient experiencing unpleasant sensations of irregular and/or forceful beating of the heart.
• Fatigue: Patient experiencing unusual tiredness and inability to perform usual activities. Fatigue or lack of energy.
• Syncope: Patient experienced a sudden loss of consciousness not related to anesthesia, with spontaneous recovery as reported by patient or observer.

Notes for Abstraction:

• Select any of the symptoms reported by the patient as either present on or prior to arrival regardless of whether they are documented as being related to atrial fibrillation.
• For patients in whom atrial fibrillation or flutter was not detected or suspected on arrival or admission to the hospital but experience onset of symptoms related to atrial fibrillation during the inpatient admission, select the symptoms present when atrial fibrillation was suspected/detected.

Initial Vital Signs

Record the vital signs first measured at your hospital. These should be the vital signs first recorded in the ED. If there are not documented vital signs recorded in the ED, record the vital signs closest to hospital admission.

OPTIONAL: Height: Enter the height of the patient documented at your hospital. Indicate if this is measured in inches or cm. If information is not available, select the “Not documented” checkbox.

OPTIONAL: Weight: Enter the first documented weight of the patient. Indicate if these are measured in lbs or kg. If information is not available, select the “Not documented” checkbox.

OPTIONAL: BMI: BMI will be calculated automatically.

REQUIRED: Heart Rate (bpm): Enter the patient’s heart rate in beats/minute. Enter the patient's first measurement upon presentation to your hospital. Heart rate may be ascertained from ECG tracing or from record of physical examination. If initial heart rate is not documented select the “Not documented” checkbox.
REQUIRED: Blood Pressure (mm Hg): Enter the patient’s blood pressure in mmHg (systolic/diastolic). Enter the patient's first measurement upon presentation to your hospital. If initial blood pressure is not documented select the “Not documented” checkbox.

REQUIRED: Initial Presenting Rhythm(s) (Select all that apply)
What was the first documented cardiac rhythm at your hospital?

- Atrial Fibrillation
- Atrial Flutter
- Atrial Tachycardia
- Other: The first documented cardiac rhythm is something other than those listed (e.g., ventricular tachycardia, supraventricular tachycardia).
- Paced: The first documented cardiac rhythm is paced. Sinus Rhythm

Notes for Abstraction

- The rhythm must be confirmed and documented by a physician, physician assistant or advanced practice nurse. The abstractor should not interpret the EKG present in the medical record or use automated EKG interpretation unless the automated EKG is signed by a physician.
- The cardiac rhythm can be determined by single lead rhythm strip or 12 lead EKG whichever is performed first.

REQUIRED: If paced, underlying Atrial Rhythm
If the initial presenting rhythm is paced, select the underlying atrial rhythm.

- Sinus Rhythm
- Atrial fib/flutter
- Sinus arrest
- Unknown: The underlying atrial rhythm is documented as unknown or there is no documentation regarding underlying atrial rhythm

Notes for Abstraction

- The rhythm must be confirmed and documented by a physician, physician assistant or advanced practice nurse. The abstractor should not interpret the EKG present in the medical record or use automated EKG interpretation unless the automated EKG is signed by a physician.
- The underlying atrial rhythm can be determined by single lead rhythm strip or 12 lead EKG whichever is performed first.

REQUIRED: If paced, pacing type
If the initial presenting rhythm is paced, select the pacing type.

- Atrial Pacing: The EKG indicates atrial pacing.
- Ventricular Pacing: The EKG indicates ventricular pacing.
- Atrioventricular: The EKG indicates both atrial and ventricular pacing.
Notes for Abstraction

- Select the type of pacing present on the EKG and not the type of pacemaker the patient has.
- Pacing type must be confirmed and documented by a physician, assistant or advanced practice nurse. The abstractor should not interpret the EKG present in the medical record or use automated EKG interpretation unless the automated EKG is signed by a physician.

OPTIONAL: Automated EKG

- Yes: Select if the initial ECG performed provided automated measurements, including heart rate, QRS duration, QTc and PR interval.
- No: Select no, if the initial ECG performed did not provide automated measurements.

REQUIRED: Initial EKG findings

Record the measurements for heart rate, QRS duration, QTc and PR interval from the first 12 Lead EKG obtained after arrival to your hospital. Initial EKG findings should include automated measurements. In the absence of automated measurements, manual measurements documented by the physician are acceptable.

- Resting Heart Rate (bpm): Enter the patient’s resting heart rate in beats per minute. Enter the resting heart rate obtained from the first EKG obtained after arrival to your hospital. If resting heart rate from the first EKG is not documented select the “Not available” checkbox.
- QRS duration (ms): Enter the patients QRS duration measured on the resting EKG in milliseconds (ms). Enter the QRS duration from the first EKG obtained after arrival to your hospital. The upper limit of normal duration of the QRS is less than 120 milliseconds. If QRS from the first EKG is not documented select the “Not available” checkbox.
- QTc (ms): Enter the patient’s QTc in milliseconds (ms). Enter the QTc from the first EKG obtained after arrival to your hospital. If QTc from the first EKG is not documented select the “Not available” checkbox.
- PR Interval (ms): Enter the patient’s PR interval in milliseconds (ms). Enter the PR Interval from the first EKG obtained after arrival to your hospital. If PR Interval from the first EKG is not documented select the “Not available” checkbox. If “Initial Presenting Rhythm” = “Atrial Fibrillation” or “Atrial Flutter” this data element will be disabled.

Notes for Abstraction:

- Enter the measurements recorded on the first 12 Lead EKG obtained after arrival to your hospital.

Labs (closest to admission)

Record the first labs measured at your hospital.

- REQUIRED: Platelet Count (mm3): Enter the patient’s first platelet count obtained after arrival to your hospital. If platelet count is unavailable select the “Not Available” check box.
- REQUIRED: SCr: Enter the patient's first serum creatinine value obtained after arrival to your hospital. Indicate whether the value is in mg/dL or µl/L. If SCr is unavailable select the “Not Available” check box.

Notes for Abstraction:
• It is often abbreviated as Cr. It is part of the standard set of blood chemistries (e.g. electrolytes) typically ordered when patients arrive at the hospital. It is different from urine creatinine, and also creatine phosphokinase (CPK) which is frequently measured to exclude heart attack. It is often reported out with the Blood Urea Nitrogen (BUN) value and typically ranges from 0.8 - 1.4 mg/dL in healthy individuals. Enter the number rounded to one decimal point.

• **Cockcroft-Gault (GFR) (mL/min):** Cockcroft-Gault (GFR) will be calculated automatically.

• **REQUIRED: INR:** Enter the patient’s first International Normalized Ratio (INR) obtained after arrival to your hospital.. Enter the number rounded to one decimal point. This numerical value reflects the degree of anticoagulation for patients on long-term warfarin therapy. It is not valid for patients who are currently receiving argatroban. If INR is unavailable or the patient is currently receiving argatroban select the “Not Available” check box.

• **OPTIONAL: Hematocrit:** Enter the patient’s first hematocrit obtained after arrival to your hospital.. If hematocrit is unavailable select the “Not Available” check box.

• **REQUIRED: Hemoglobin:** Enter the patient’s first hemoglobin obtained after arrival to your hospital.. If hemoglobin is unavailable select the “Not Available” check box.

• **REQUIRED: TSH (mlU/L):** Enter the patient’s first thyroid stimulating hormone value after arrival to your hospital.. If TSH is unavailable select the “Not Available” check box.

• **OPTIONAL: K:** Enter the patient’s first potassium value obtained after arrival to your hospital. Indicate whether the value is in mEq/L, mmol/L, or mg/dL. If K is unavailable select the “Not Available” check box.

• **OPTIONAL: Mg (mg/dL):** Enter the patient’s first magnesium value obtained after arrival to your hospital.. If Mg is unavailable select the “Not Available” check box.

• **OPTIONAL: BUN:** Enter the patient’s first BUN value obtained after arrival to your hospital. Indicate whether the value is mg/dL or µmol/L. If BUN is unavailable select the “Not Available” check box.

• **OPTIONAL: NT-BNP (pg/mL):** Enter the patient’s first N-terminal pro- BNP value obtained after arrival to your hospital. If NT-BNP is unavailable select the “Not Available” check box.

• **OPTIONAL: BNP:** Enter the patient’s first B type natriuretic peptide value obtained after arrival to your hospital.. Indicate whether the value is pg/mL, pmol/L, or ng/L. If BNP is unavailable select the “Not Available” check box.

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**IN-HOSPITAL CARE**

• **Procedures this hospitalization**

• **EF – Quantitative**

• **Ejection Fraction - Qualitative**

• **Oral Medications during hospitalization**

• **Parenteral In-Hospital Anticoagulation**

• **CHADS2 reported? (in medical record)**

• **If yes, total reported score in medical record**

• **CHADS2 Risk Factors Assessed**

• **Medical reason(s) documented by a physician, nurse practitioner, or physician assistant for not assessing risk factors**

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**REQUIRED: Procedures this hospitalization**
Select all procedures that were performed during this hospitalization.

- **No Procedures:** The patient did not undergo any of the specified procedures.
- **A-Fib Ablation:** Patient has undergone catheter based atrial fibrillation ablation including radio frequency ablation, cryoablation, or other techniques during this admission.
- **A-Flutter Ablation:** Patient has undergone catheter based atrial flutter ablation including radio frequency ablation, cryoablation, or other techniques during this admission.
  - If patient has undergone A-Fib or A-Flutter ablation select whether cryoablation or radio frequency ablation was used.
    - Cryoablation
    - Radio Frequency Ablation
- **Cardioversion (check all that apply below):** Patient has undergone intentional therapy (electrical or chemical) of a cardiac arrhythmia during this admission. If the patient has undergone cardioversion, select the therapy used.
  - Chemical: Patient has undergone chemical cardioversion using antiarrhythmic drug(s).
  - Electrical: Patient has undergone electrical cardioversion.
  - TEE Guided: Patient has undergone TEE guided cardioversion. Select this in addition to either chemical or electrical.
- **CRT-D (cardiac resynchronization therapy w/ICD):** Patient has undergone CRT-D pacing with ICD. (CRT combined with implantable cardioverter defibrillator) CRT is also known as Bi-Ventricular Pacing.
- **CRT-P (cardiac resynchronization therapy-pacing only):** Patient has undergone CRT-P pacing only. CRT is also known as Bi-Ventricular Pacing.
- **ICD only:** Patient has received an implantable cardioverter defibrillator (ICD) during this admission. The device allows physicians to perform only one operation on patients who need both defibrillators and pacemakers. Select this field only if an ICD alone without biventricular pacing was placed (i.e., no CRT).
- **LAA Occlusion Device:** Patient has undergone placement of a left atrial appendage occlusion device during this admission.
- **Mechanical Prosthetic Heart Valve:** Patient has undergone valve replacement with a mechanical heart valve during this admission. DO NOT select if the patient has received a bioprosthetic heart valve only.
- **Pacemaker:** Patient has undergone placement of a permanent pacemaker.
- **PCI/Cardiac Catheterization:** Patient has undergone a percutaneous cardiac intervention (PCI) which includes techniques capable of relieving coronary narrowing (rotational atherectomy, directional atherectomy, extraction atherectomy, laser angioplasty, balloon angioplasty, implantation of intracoronary stents and other catheter devices for treating coronary atherosclerosis) or patient has undergone a coronary angiography without intervention.
  - If PCI was a stent, select the type of stent:
    - Bare metal stent
    - Drug eluting stent
- **Surgical MAZE:** Patient has undergone atrial fibrillation surgery including MAZE during this admission.

**REQUIRED: EF – Quantitative**

Enter the ejection fraction as a two-digit %. EF is defined as the proportion of blood ejected during each ventricular contraction compared with the total ventricular filling volume. The ejection fraction is an index of...
ventricular function. If a numeric value has been recorded, enter here as a two-digit %. If description was recorded, enter it in the Ejection Fraction - Qualitative question. Indicate whether this value was obtained during this admission, within the last year, or more than 1 year ago.

Notes for Abstraction:

- If both a numeric value and narrative description are documented in reference to the same LVF/LVEF assessment, use the numeric value.
- The numeric EF may be documented as a percentage (%), whole number, or decimal. Convert all decimals to percentages (e.g., 0.40 = 40). The value should be between 5 and 80.
- If EF was reported as a range, use the midpoint and consider this an estimated value (e.g., LVEF of 35-45%. Use 40% as an estimated EF value).
- If the LV Function has been determined twice during the admission, enter the results of the test closest to the day of discharge. If unable to determine which assessment was performed closest to the day of discharge, use the lowest or most severe LVF/LVEF.
- If two or more numeric values or descriptions are provided in reference to the same LVF/LVEF assessment, use the lowest value or most severe description.
- If both calculated and an estimated values are documented, use the calculated value.
- If the EF is documented as less than (<) or greater than (>) a given number, use the value one whole number below or above the given number (e.g., EF < 40% - Use 39%; EF > 40% - Use 41%).
- If the EF is not documented as a whole number, round fractions to the nearest whole number (e.g., 39.5% = 40%, 39.4% = 39%)

Obtained:
Indicate when the quantitative ejection fraction was obtained.

- This Admission
- W/in the last year
- > 1 year ago

REQUIRED: Ejection Fraction - Qualitative

Enter the Ejection Fraction description. Terms such as below normal, poor, or above normal which are recorded in lieu of the percentage should be selected from the dropdown list here. If a numeric value has been recorded, enter it in the Ejection Fraction - Quantitative question as a two-digit %. Indicate whether this value was obtained during this admission, within the last year, or more than 1 year ago.

Severity Classifications/Descriptions:

- Not applicable: if the patient did not require a LVF/LVEF assessment during hospitalization.
- Normal or mild dysfunction: includes normal, good, adequate, at the lower limits of normal, borderline normal, good, hyperkinetic, intact, left ventricle described as normal/good, normal, preserved, satisfactory, wall motion described as normal/good, within normal limits, mild, mild-moderate.
- Qualitative moderate/severe dysfunction: includes moderate-severe, low, abnormal, compromised, decreased, depressed, diffuse hypokinesis (degree of severity not specified), diminished, dysfunction (degree of severity not specified), generalized hypokinesis (degree of severity not specified), impaired, low, moderate, moderately severe, reduced, significant, very severe, very low, poor, global, marked, very low, very poor, very severe.
o Performed/Results not available: if there is documentation of an assessment, but the results are unavailable or cannot be found.
o Planned after discharge: if there is physician documentation only of a plan to assess LVF/LVEF after discharge.
o Not Performed: if an LVF/LVEF was not performed during hospitalization and there are no physician documented plans to perform an assessment after discharge.

A common question is, if an EF was not measured during this admission, how far back prior to hospital admission may we take a documented EF value? (Example, patient admitted with CAD in February, but had EF measured two months earlier in December admission.) The answer is that, if the reason EF was not measured during this admission was because clinicians decided the earlier EF assessment was sufficient to make their decisions, then the earlier assessment should be entered.

Obtained:
Indicate when the quantitative ejection fraction was obtained.

- This Admission
- W/in the last year
- > 1 year ago

OPTIONAL: Oral Medications during hospitalization (Select all that apply)

Select all oral medications that were administered any time during the hospitalization:

- None: None of the following medications was administered during the hospitalization.
- Antiarrhythmic: Documentation that an antiarrhythmic drug was administered to the patient during hospitalization. In addition to the specific antiarrhythmic drugs listed on the CRF, select “Other” if the patient was taking any other Class I (Sodium Channel Blockers), Class III (Potassium Channel Blockers) or unclassified antiarrhythmic drugs listed in Table 5 as these drugs are not captured under other specific medication classes collected in this element. Class II - Beta Blockers, Class IV- Calcium Channel Blockers and Digoxin are captured under the respective drug classes.
- Anticoagulants: Documentation that an anticoagulant drug was administered to the patient during hospitalization. See Table 6 for a list of anticoagulant drugs.
- Antiplatelet agent (not aspirin): Documentation that an antiplatelet agent other than aspirin was administered to the patient during hospitalization.
- Aspirin: Documentation that aspirin was administered to the patient during hospitalization. See Table 7 for a list of aspirin containing drugs.
- Beta-Blocker: Documentation that a beta blocker was administered to the patient during hospitalization. See Table 8 for a list of Beta-Blockers.
- Ca channel blocker: Documentation that a calcium channel blocker was administered to the patient during hospitalization. See Table 9 for a list of calcium channel blocker.
- Digoxin: Documentation that digoxin (Lanoxin) was administered to the patient during hospitalization.

OPTIONAL: Parenteral In-Hospital Anticoagulation

Select if the patient received an intravenous anticoagulant medication from the list provided. Check all that apply.

- Unfractionated Heparin IV: Documentation that unfractionated heparin IV was administered to the patient during the hospitalization.
• full dose LMW Heparin: Documentation that full dose LMW heparin (dalteparin (Fragmin), enoxaparin (Lovenox), tinzaparin (Innohep)) was administered to the patient during the hospitalization.
• Other IV Anticoagulant: Documentation that another IV anticoagulant (lepirudin (Refludan)) was administered to the patient during the hospitalization.
• None: The patient did not receive IV anticoagulation during the hospitalization.

REQUIRED: CHADS2 reported? (in medical record)

Was a CHADS2 score documented in the medical record?

• Yes: A CHADS2 score was documented in the medical record.
• No/ND: A CHADS2 score was NOT documented in the medical record.

Notes for Abstraction:

• In order to select “Yes”, an actual score must be documented in the medical record. The abstractor should NOT select “Yes” if the CHADS2 score was calculated retrospectively based upon documentation of the individual CHADS2 risk factors in the medical record.
• The CHADS2 score must be documented by a physician, physician assistant advanced practice nurse or RN.

REQUIRED: If yes, total reported score in medical record

If a CHADS2 score is documented in the medical record, what is the total score recorded.

REQUIRED: CHADS2 Risk Factors Assessed

Select the CHADS2 risk factors for which the patient was assessed?

• Prior stroke or TIA assessed: There is documentation in the medical record regarding whether the patient has a history of stroke or TIA or new diagnosis of stroke or TIA during this hospitalization.
• Age ≥ 75 years assessed: There is documentation in the medical record of the patient’s age.
• Hypertension assessed: There is documentation in the medical record regarding whether the patient has a history of or new diagnosis of hypertension.
• Diabetes mellitus assessed: There is documentation in the medical record regarding whether the patient has a history of or new diagnosis of Type I or Type II diabetes.
• Heart failure or impaired LV systolic function assessed: There is documentation in the medical record regarding whether the patient has a history of or new diagnosis of heart failure or whether the patient has impaired left ventricle systolic function.

Notes for Abstraction:

• If there is documentation that the patient has a medical history or new diagnosis of stroke, TIA, hypertension, diabetes, heart failure or impaired LV systolic function consider the risk factor to be assessed.
• In the absence of documentation indicating the patient has a medical history or new diagnosis of stroke, TIA, hypertension, diabetes, heart failure or impaired LV systolic function there is must be documentation indicating that the patient DOES NOT have these risk factors or conditions in order to consider them to be assessed. If there is NO documentation regarding the risk factors, DO NOT select.
If the patient does not have a medical history or new diagnosis of the CHADS2 risk factors and there is a past medical history checklist in the medical record, consider a blank check box next to the condition to indicate that the patient was assessed for the risk factor and select “Yes”.

- If there is documentation of a quantitative or qualitative ejection fraction consider systolic function to be assessed.
- If a CHADS2 score is documented in the medical record, select “Yes” to all. If a CHADS2 score is documented, this will be autopopulated in the eCRF.

REQUIRED: Medical reason(s) documented by a physician, nurse practitioner, or physician assistant for not assessing risk factors

If thromboembolic risk factors were not assessed, is there a documented medical reason for not assessing risk factors?

- Yes: There is a documented medical reason for not assessing risk factors.
- No: There is no documented reason for not assessing risk factors.

Notes for Abstraction:

- Medical reasons for not assessing risk factors should only include the following:
  - Documented contraindications to anticoagulation therapy such as allergy to warfarin or risk of bleeding.
    - Reasons for not prescribing anticoagulation therapy must be documented by a physician, advance practice nurse or physician assistant. And must be mentioned in the context of anticoagulation therapy, do not make inferences (e.g., do not assume that anticoagulation therapy was not prescribed because of a bleeding disorder unless documentation explicitly states so).
    - If you answered “Yes” to the data element “Anticoagulation Therapy Contraindicated” in the Discharge Medications section, it is acceptable to select “Yes” to this data element.
  - Patient left AMA or discontinued care
  - There is documentation that the patient’s CHADS2 risk factors could not be assessed because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and an accurate medical history cannot be obtained.
  - Patient was referred to palliative care or was made CMO any time during the hospitalization.

OPTIONAL: CHADS2 Calculation Tool

Click on (Show/Hide) to display the risk factors from the CHADS2 risk score. The total will be computed automatically from these risk factors. Completing the CHADS2 calculation tool is optional but may be helpful if the CHADS2 score was not documented in the medical record.

DISCHARGE INFORMATION

- Discharge Date and Time
- What was the patient’s discharge disposition on the day of discharge?
- If Other Health Care Facility
- When is the earliest documentation of comfort measures only?
- Vital Signs (Closest to Discharge)
- Discharge Rhythm(s) (closest to discharge)
- EKG findings (closest to discharge)
- Discharge EKG QRS Morphology
- Labs (closest to discharge)

**REQUIRED: Discharge Date and Time**

Record the month, day, and year and time the patient was discharged from acute care, left against medical advice, or expired during this stay.

For Date use the format MM/DD/YYYY.
For Time use military time: HH:MM.

If the Date is known but the time is unable to determine, select the format precision "MM/DD/YYYY". If the Date is UTD, select the format precision "Unknown".

**Notes for Abstraction:**

- Because this data element is critical in determining the population for all measures, the abstractor should NOT assume that the claim information for the discharge date is correct. If the abstractor determines through chart review that the claim date is incorrect, she/he should correct and override the downloaded value. If the abstractor is unable to determine the correct discharge date through chart review, she/he should default to the claim discharge date.

- **Please note:** Discharge time is not a Joint Commission data element.
- If the patient is never admitted to your facility (i.e. you answered the data element of “Was patient admitted as inpatient?” as “No” enter the date of discharge from the observation unit.”

**REQUIRED: What was the patient’s discharge disposition on the day of discharge?**

*Element definition from Specifications Manual for National Hospital Inpatient Quality Measures*

Definition: The final place or setting to which the patient was discharged on the day of discharge.
Allowable Values:
1 Home
2 Hospice - Home
3 Hospice – Health Care Facility
4 Acute Care Facility
5 Other Health Care Facility
6 Expired
7 Left Against Medical Advice/AMA
8 Not Documented or Unable to Determine (UTD)

**Notes for Abstraction:**
• Only use documentation from the day of or the day before discharge when abstracting this data element. Example: Documentation in the Discharge Planning notes on 04-01-20xx state that the patient will be discharged back home. On 04-06-20xx the physician orders and nursing discharge notes on the day of discharge reflect that the patient was being transferred to skilled care. The documentation from 04-06-20xx would be used to select value "5" (Other Health Care Facility).

• Consider discharge disposition documentation in the discharge summary, a post-discharge addendum, or a late entry as day of discharge documentation, regardless of when it was dictated/written.

• The medical record must be abstracted as documented (taken at “face value”). Inferences should not be made based on internal knowledge.

• If there is documentation that further clarifies the level of care that documentation should be used to determine the correct value to abstract. If documentation is contradictory, use the latest documentation. Examples:
  o Discharge summary dictated 2 days after discharge states patient went “home”. Physician note on day of discharge further clarifies that the patient will be going "home with hospice”. Select value “2” (“Hospice - Home”).
  o Discharge planner note from day before discharge states “XYZ Nursing Home”. Discharge order from day of discharge states “Discharge home”. Contradictory documentation, use latest. Select value “1” (“Home”).
  o Physician order on discharge states “Discharge to ALF”. Discharge instruction sheet completed after the physician order states patient discharged to “SNF”. Contradictory documentation, use latest. Select value “5” (“Other Health Care Facility”).

• If documentation is contradictory, and you are unable to determine the latest documentation, select the disposition ranked highest (top to bottom) in the following list. See Inclusion lists for examples.
  o Acute Care Facility
  o Hospice – Health Care Facility
  o Hospice – Home
  o Other Health Care Facility
  o Home
  o Hospice (values “2” and “3”) includes discharges with hospice referrals and evaluations.

• If the medical record states only that the patient is being discharged to another hospital and does not reflect the level of care that the patient will be receiving, select value “4” (“Acute Care Facility”).

• If the medical record identifies the facility the patient is being discharged to by name only (e.g., “Park Meadows”), and does not reflect the type of facility or level of care, select value “5” (“Other Health Care Facility”).

• If the medical record states only that the patient is being “discharged” and does not address the place or setting to which the patient was discharged, select value “1” (“Home”).

• When determining whether to select value “7” (“Left Against Medical Advice/AMA”):
  o Explicit “left against medical advice” documentation is not required. E.g., “Patient is refusing to stay for continued care” – Select value “7”.
  o Documentation suggesting that the patient left before discharge instructions could be given does not count.
  o A signed AMA form is not required, for the purposes of this data element.
  o Do not consider AMA documentation and other disposition documentation as “contradictory”. If any source states the patient left against medical advice, select value “7”, regardless of whether
the AMA documentation was written last. E.g., AMA form signed and discharge instruction sheet states “Discharged home with belongings” – Select “7”.

**Suggested Data Sources:**
- Discharge instruction sheet
- Discharge planning notes
- Discharge summary
- Nursing discharge notes
- Physician orders
- Progress notes
- Social service notes
- Transfer record

**Excluded Data Sources:**
- Any documentation prior to the last two days of hospitalization
- Coding documents
- UB-04

**Inclusion Guidelines for Abstraction:**

**Home (Value 1):**
- Assisted Living Facilities (ALFs) – Includes ALFs and assisted living care at nursing home, intermediate care, and skilled nursing facilities
- Court/Law Enforcement – includes detention facilities, jails, and prison
- Home – includes board and care, foster or residential care, group or personal care homes, retirement communities and homeless shelters
- Home with Home Health Service
- Outpatient Services including outpatient procedures at another hospital, Outpatient Chemical Dependency Programs and Partial Hospitalization

**Hospice – Home (Value 2):**
- Hospice in the home (or other “Home” setting as above in Value 1)

**Hospice - Health Care Facility (Value 3):**
- Hospice - General Inpatient and Respite
- Hospice - Residential and Skilled Facilities
- Hospice - Other Health Care Facilities

**Acute Care Facility (Value 4):**
- Acute Short Term General and Critical Access Hospitals
- Cancer and Children’s Hospitals
- Department of Defense and Veteran’s Administration Hospitals

**Other Health Care Facility (Value 5):**
- Extended or Immediate Care Facility (ECF/ICF)
- Long Term Acute Care Hospital (LTACH)
- Nursing Home or Facility including Veteran’s Administration Nursing Facility
- Psychiatric Hospital or Psychiatric Unit of a Hospital
- Rehabilitation Facility including Inpatient Rehabilitation Facility/Hospital or Rehabilitation Unit of a Hospital
- Skilled Nursing Facility (SNF), Sub-Acute Care or Swing Bed
- Transitional Care Unit (TCU)

**Exclusion Guidelines for Abstraction:**
None

**REQUIRED: If Other Health Care Facility**
If Other Health Care Facility is selected for Discharge Disposition, select the specific facility to which the patient was discharged.

- **Skilled Nursing Facility (SNF)**: Patient was discharged or transferred to a skilled nursing facility (SNF) previously captured as Discharge Status (03) Dsch/Trans to skilled nursing facility (SNF) and (61) Dsch/Trans to hospital-based Medicare approved swing bed. This would include patients discharged to:
  - skilled nursing facility (SNF),
  - SNF rehabilitation unit (a unit within the SNF),
  - Sub-Acute Care,
  - Transitional Care Unit (TCU),
  - Swing Bed (patients discharged/ transferred to a SNF level of care within the hospital's approved swing bed arrangement), or
  - Skilled nursing facility with hospice referral only (has not accepted hospice care by a hospice organization).
- **Inpatient Rehabilitation Facility (IRF)**: Patient was discharged or transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital previously captured as Discharge Status (62) Dsch/Trans to an inpatient rehabilitation facility (IRF).
- **Long Term Care Hospital (LTCH)**: Patient was discharged or transferred to a Medicare certified long term care hospital (LTCH or LTACH) or a nursing facility certified under Medicaid but not certified under Medicare previously captured as Discharge Status (63) Dsch/Trans to Medicare certified long term care hosp and (64) Disch/Trans to a nursing facility certified under Medicaid but not certified under Medicare. LTCH Usage Note: For hospitals that meet the Medicare criteria for LTCH certification. A Long-term care hospital or long-term care facilities provide acute inpatient care with an average length of stay greater than 25 days.
- **Intermediate Care facility (ICF)**: Patient was discharged or transferred to an intermediate care facility (ICF) previously captured as Discharge Status (04) Dsch/Trans to a facility that provides custodial or supportive care. This would include patients discharged to:
  - ECF (Extended Care Facility),
  - ICF (Intermediate Care Facility),
  - Nursing Home,
  - Nursing facility for non-skilled/custodial/residential level of care,
  - Veteran’s Administration Nursing Facility,
  - Nursing facility with neither Medicare nor Medicaid certification
  - Nursing facility with hospice referral only (has not accepted hospice care by a hospice organization).
- **Other**: The patient was discharged or transferred to a Psychiatric Hospital or Psychiatric Unit of a Hospital previously capture as Discharge Status (65) Dsch/Trans to a psychiatric hospital or psychiatric distinct part unit of a hospital or other healthcare facility not defined in above options.

**REQUIRED: When is the earliest documentation of comfort measures only?**

Indicate if there is any evidence that the patient's care was restricted to "Comfort Measures Only". Physician/advanced practice nurse/physician assistant (physician/APN/PA) documentation of comfort measures only. Commonly referred to as "comfort care" in the medical community and "comfort care" by the general public. Comfort care includes attention to the psychological and spiritual needs of the patient and support for the dying patient and the patient's family. Comfort Measures Only are not equivalent to the following: Do Not Resuscitate (DNR), living will, no code, no heroic measure.
• Day 1 or 2: The earliest day the physician/APN/PA documented comfort measures only was the day of arrival (Day 1) or day after arrival (Day 2).
• Day 3 or after: The earliest day the physician/APN/PA documented comfort measures only was two or more days after arrival day (Day 3+).
• Timing unclear: There is physician/APN/PA documentation of comfort measures only during this hospital stay, but whether the earliest documentation of comfort measures only was on day 1 or 2 OR after day 2 is unclear.
• Not Documented/UTD: There is no physician/APN/PA documentation of comfort measures only, or unable to determine from medical record documentation.

Notes for Abstraction:

• Only accept terms identified in the list of inclusions. No other terminology will be accepted.
• Physician/APN/PA documentation of comfort measures only (hospice, comfort care, etc.) mentioned in the following contexts suffices:
  o Comfort measures only recommendation
  o Order for consultation or evaluation by a hospice/palliative care service
  o Patient or family request for comfort measures only
  o Plan for comfort measures only
  o Referral to hospice care service
• Determine the earliest day the physician/APN/PA DOCUMENTED comfort measures only in the ONLY ACCEPTABLE SOURCES. Do not factor in when comfort measures only was actually instituted
• "Discussed comfort care with family on arrival" noted in day 3 progress note - Select "Day 3 of After."
• POLST order for comfort care dated prior to arrival - Select "Day 1 or 2."
• Consider comfort measures only documentation in the discharge summary as documentation on the last day of the hospitalization, regardless of when the summary is dictated.
• Documentation of an Inclusion term in the following situations should be disregarded. Continue to review the remainder of the ONLY ACCEPTABLE SOURCES for acceptable Inclusion terms. If the ONLY documentation found is an Inclusion term in the following situations, select “not documented/UTD”:
  o Do not use documentation that is dated prior to arrival or documentation which refers to the pre-arrival time period (e.g., comfort measures only order in previous hospitalization record, "Pt. on hospice at home" in MD ED note.
  o EXCEPTION: State-authorized portable orders (SAPOs). SAPOs are specialized forms, Out-of-Hospital DNR (OOH DNR) or Do Not Attempt Resuscitation (DNAR) orders, or identifiers authorized by state law, that translate a patient's preferences about specific-end-of-life treatment decisions into portable medical orders. Examples:
    • DNR-Comfort Care form
    • MOLST (Medical Orders for Life-Sustaining Treatment)
    • POLST (Physician Orders for Life-Sustaining Treatment)
  o Pre-printed order forms signed by the physician/APN/PA:
    • Disregard an Inclusion term in a statement that is not part of the order or that is not clearly selected (on a form that offers options to select from).
    • Examples:
    • Inclusion term used only in the title of the form (e.g., "DNR-Comfort Care" form, option "Comfort Care" is not checked)
Inclusion term used only in the pre-printed instruction for completing the form (e.g. "Copy of form to hospice", "Instructions" section of the form further defines the option "Comfort Care")

If there is a specific option for “Comfort Measures Only” (or other Inclusion term) that is unchecked, then disregard documentation on that form, regardless of whether that Inclusion term might be used in a different option that is checked.

- Example: POLST form - The “Limited Additional Interventions” option checked is described as “In addition to care described in Comfort Measures Only, use medical treatment, antibiotics, ...

- Inclusion term clearly described as negative.
  Examples:
  - “No comfort care"
  - “Not a hospice candidate"
  - "Not appropriate for hospice care"
  - “I offered hospice care consult to discuss end of life issues. Family did not show any interest.
  - “Patient declines hospice care at this time but I feel this will be an important plan of care when his condition deteriorates further”
  - “Comfort care would also be reasonable - defer decision for now”

- Comfort measures made conditional upon whether or not the patient arrests. Examples:
  - "DNRCCA" (Do Not Resuscitate - Comfort Care Arrest)
  - Comfort Care Protocol will be implemented in the event of a cardiac arrest or a respiratory arrest"
  - Family requests comfort measures only should the patient arrest"

- Documentation of "CMO" should be disregarded if documentation makes clear it is not being used as an acronym for Comfort Measures Only (e.g., "hx dilated CMO" - Cardiomyopathy context).

- If there is documentation of an Inclusion term clearly described as negative in one source and an Inclusion term NOT described as negative in another source, that second source would still count for comfort measures only.
  - Examples:
    - On Day 1 the physician documents “The patient is not a hospice candidate.” On Day 4, the physician orders a hospice consult. Select “2”.
    - On Day 2 the physician documents the patient is comfort measures only. On Day 3 the physician documents “The patient is refusing CMO.” Select “1”.

- For inpatient strokes, assess earliest documentation of comfort measures only from date/time of discovery of stroke symptoms. If comfort measures was instituted prior to the date/time of discovery of stroke symptoms, select "Day 1 or 2".

Example: Patient 070 arrived to the hospital on 4/1/2012 and was admitted the same day for acute MI. On 4/3/2012 the nurse finds the patient unable to speak and unable to move his right side. The stroke team is consulted and it is determine that the patient had an ischemic stroke. The neurologist orders a consultation for palliative care services on 4/4/2012. Select "Day 1 or 2" as the day of discovery of stroke symptoms (4/3/2012) is day 1 for inpatient strokes.

Suggested Data Sources:
PHYSICIAN/APN/PA DOCUMENTATION ONLY IN THE FOLLOWING ONLY ACCEPTABLE SOURCES:

- Discharge Summary
- DNR/MOLST/POLST forms
- Emergency department record

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Excluded Data Sources: Restraint order sheet

Inclusion Guidelines for Abstraction:
Inclusion

- Brain dead
- Brain death
- Comfort care
- Comfort measures
- Comfort measures only (CMO)
- Comfort only
- DNR-CC
- End of life care
- Hospice
- Hospice care
- Organ harvest
- Terminal care

Exclusion Guidelines for Abstraction: None

Vital Signs (Closest to Discharge)

Record the vital signs done closest to the time of discharge or death.

REQUIRED: BP-Supine (mm Hg): Enter the patient’s blood pressure in mmHg (systolic/diastolic). Enter the patient's measurement closest to the time of discharge or death. If there is no blood pressure documented select the “Not documented” checkbox.

REQUIRED: Heart Rate (beats/minute): Enter the patient’s resting heart rate closest to the time of discharge in beats/minute. Heart rate may be ascertained from EKG tracing or from record of physical examination. If there is no heart rate documented select the “Not documented” checkbox.

Notes for Abstraction:

- Do not enter BP or heart rate done greater than 24 hours prior to discharge. If a BP or heart rate is not documented within 24 hours of discharge, select the “Not documented” checkbox.

REQUIRED: Reason documented by a physician, nurse practitioner, or physician assistant for discharging patient with heart rate >110 bpm?

- Yes: There is a reason documented for discharging the patient with a heart rate greater than 110 beats per minute.
- No: There is no reason documented for discharging the patient with a heart rate greater than 110 beats per minute.

Notes for Abstraction:

- Reasons must be documented by a physician, advance practice nurse or physician assistant.
• Reasons must be explicitly documented and make mention of elevated heart rate, do not make inferences (i.e. do not assume that because the patient is stable or asymptomatic that the heart rate of greater than 110 is appropriate).

• Documented reasons for discharging a patient with a heart rate greater than 110 could include the following:
  o Patient is on maximum medical therapy (greater than or equal to 2 agents used, OR limited by blood pressure, etc)
  o Documentation of a plan to continue uptitration of rate control agents as an outpatient.
  o Patient has concurrent medical problem resulting in inability to control heart rate such as thyrotoxicosis, infection, etc.
  o Patient is being transfer to another hospital for further rhythm therapy.
  o Patient refusal to stay in the hospital.

**REQUIRED: Discharge Rhythm(s) (closest to discharge)**

What was documented cardiac rhythm closest to discharge?

• Atrial Fibrillation
• Atrial Flutter
• Sinus Rhythm
• Atrial Tachycardia
• Other: The documented cardiac rhythm at discharge is something other than those listed (e.g., ventricular tachycardia, supraventricular tachycardia).
• Paced: The documented cardiac rhythm at discharge is paced. If the rhythm is paced, select the underlying cardiac rhythm as well.

**Notes for Abstraction**

• The rhythm must be confirmed by a physician, physician assistant, advanced practice nurse. The abstractor should not interpret the EKG present in the medical record or use automated EKG interpretation unless the automated EKG is signed by a physician.
• The cardiac rhythm can be determined by single lead rhythm strip or 12 lead EKG whichever is performed closest to the time of discharge.

**REQUIRED: EKG findings (closest to discharge)**

Record the automated measurements for heart rate, QRS duration, QTc and PR interval from the EKG obtained closest to discharge.

• **Resting Heart Rate (bpm):** Enter the patient’s resting heart rate in beats per minute. Enter the resting heart rate obtained from the EKG performed closest to discharge If resting heart rate from the EKG closest to discharge is not documented select the “Not available” checkbox.
• **QRS duration (ms):** Enter the patients QRS duration measured on the resting EKG in milliseconds (ms). Enter the QRS duration from the EKG performed closest to discharge. The upper limit of normal duration of the QRS is less than 120 milliseconds. If QRS from the EKG closest to discharge is not documented select the “Not available” checkbox.
• **QTc (ms):** Enter the patient’s QTc in milliseconds (ms). Enter the QTc from the EKG performed closest to discharge. If QTc from the EKG performed closest to discharge is not documented select the “Not available” checkbox.
- **PR Interval (ms):** Enter the patient’s PR interval in milliseconds (ms). Enter the PR Interval from the EKG performed closest to discharge. If PR Interval from the EKG performed closest to discharge is not documented select the “Not available” checkbox. If “Discharge Rhythm” = “Atrial Fibrillation” or “Atrial Flutter” this data element will be disabled.

**Notes for Abstraction:**

- Preference is to enter the automated measurements recorded on the 12 Lead EKG performed closest to discharge. In the absence of an automated 12 lead EKG enter the clinician calculated measurements from either single lead rhythm strip or 12 lead EKG.
- If both automated measurements and measurements obtained by the clinician are available enter the automated measurements.

**OPTIONAL: Discharge EKG QRS Morphology**

Select the appropriate QRS morphology from the 12 lead EKG performed closest to discharge. If there is an official signed EKG read by the cardiologist, use that. In the absence of an official signed read the machine read or abstractor interpretation is acceptable.

- Normal – The patient has normal QRS morphology as determined by initial EKG.
- RBBB (Right Bundle Branch Block) – The patient’s initial EKG shows Right Bundle Branch Block. Right Bundle Branch Block is indicated by a Broad QRS >120 ms, RSR’ pattern in V1-3 (‘M-shaped’ QRS complex) and Wide, slurred S wave in the lateral leads (I, aVL, V5-6).
- LBBB (Left Bundle Branch Block) – The patient’s initial EKG shows Left Bundle Branch Block. Left Bundle Branch Block is indicated by a QRS duration of at least 120 ms, Dominant S wave in V1, Broad monophasic R wave in lateral leads (I, aVL, V5-V6), Absence of Q waves in lateral leads (I, V5-V6; small Q waves are still allowed in aVL), and Prolonged R wave peak time > 60ms in left precordial leads (V5-6).
- NS-IVCD (Nonspecific Intra-Ventricular Conduction Delay) – The patient has a Nonspecific Intra-Ventricular Conduction Delay. NS-IVCD is a QRS widening of at least 120 ms that does not meet criteria for LBBB or RBBB.
- Not Available – The discharge EKG findings for QRS morphology are not available for the patient.

**Labs (closest to discharge)**

- **OPTIONAL: Platelet Count (mm3):** Enter the patient’s platelet count obtained closest to discharge. If platelet count is unavailable select the “Not Available” check box.
- **OPTIONAL: SCr:** Enter the patient's serum creatinine value obtained closest to the time of discharge. Indicate whether the value is in mg/dL or µL/L. If SCr is unavailable select the “Not Available” check box.

**Notes for Abstraction:**

- It is often abbreviated as Cr. It is part of the standard set of blood chemistries (e.g. electrolytes) typically ordered when patients arrive at the hospital. It is different from urine creatinine, and also creatine phosphokinase (CPK) which is frequently measured to exclude heart attack. It is often reported out with the Blood Urea Nitrogen (BUN) value and typically ranges from 0.8 - 1.4 mg/dL in healthy individuals. Enter the number rounded to one decimal point.
- **OPTIONAL: INR:** Enter the patient’s International Normalized Ratio (INR) obtained closest to the time of discharge. Enter the number rounded to one decimal point. This numerical value reflects the
degree of anticoagulation for patients on long-term warfarin therapy. It is not valid for patients who are currently receiving argatroban. If INR is unavailable or the patient is currently receiving argatroban select the “Not Available” check box.

DISCHARGE MEDICATIONS

- **ACEI Prescribed (at discharge)**
- **ARB Prescribed (at discharge)**
- **Aldosterone Antagonist Prescribed (at discharge)?**
- **Antiarrhythmic Prescribed (at discharge)?**
- **Were Dofetilide or Sotalol newly initiated or dose increased this hospitalization?**
- **Anticoagulation Therapy Prescribed (at discharge)**
- **Antiplatelet Prescribed (at discharge)?**
- **Aspirin Prescribed (at discharge)**
- **Beta-Blocker Prescribed (at discharge)**
- **Calcium Channel Blocker Prescribed (at discharge)**
- **Digoxin Prescribed (at discharge)**
- **Statin Therapy Prescribed (at discharge)**
- **Hydralazine Nitrate Prescribed (at discharge)**
- **Other Medications at Discharge**

REQUIRED: ACEI Prescribed (at discharge)

Was an angiotensin converting enzyme inhibitor (ACEI) prescribed at discharge?

- Yes: ACEI prescribed at discharge
- No: ACEI not prescribed at discharge, OR unable to determine from medical record documentation.

Notes for Abstraction:

- In determining whether an ACEI was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list an ACEI that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.
  - In cases where there is an ACEI in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select "Yes") unless documentation elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.
  - If documentation is contradictory (e.g., physician noted “d/c Zestril” in the discharge orders, but Zestril is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine" (select "No").
  - Consider documentation of a hold on an ACEI after discharge in one location and a listing of that ACEI as a discharge medication in another location as contradictory ONLY if the timeframe on
the hold is not defined (e.g., “Hold Zestril”). Examples of a hold with a defined timeframe include “Hold captopril x2 days” and “Hold Quinaretic until after stress test.”

- If an ACEI is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of an ACEI after discharge (e.g., “Hold captopril x2 days,” “Start ACEI as outpatient,” “Hold Zestril”), select “No”.

- If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc.

Examples:

- Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
- Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.

- Disregard an ACEI medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on Vasotec”). Documentation must be clearer that the ACEI was actually prescribed at discharge.
- Disregard documentation of ACEI prescribed at discharge when noted only by medication class (e.g., “ACEI Prescribed at Discharge: Yes” on a core measures form). The ACEI must be listed by name.

**Suggested Data Sources:**

- Discharge instruction sheet
- Discharge summary
- Medication reconciliation form
- Nursing discharge notes
- Physician orders sheet
- Transfer sheet

**Guidelines for Abstraction:**

See Table 1 for a list of ACEIs and Table 4 for ARB.

**OPTIONAL: ACEI Medication, Dosage and Frequency**

Select the specific ACEI medication that was prescribed at discharge.
Select the dosage and frequency.

**REQUIRED: ACEI Contraindicated (at discharge)**

Is there documentation of a reason for not prescribing an ACEI at discharge?

- Yes: There is documentation of a reason for not prescribing an ACEI at discharge.
- No: There is no documentation of a reason for not prescribing an ACEI at discharge or unable to determine from medical record documentation.

**Notes for Abstraction:**

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• Reasons for not prescribing an ACEI at discharge must be documented by a physician/APN/PA or pharmacist.
• An “allergy” or “sensitivity” documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., “Allergies: ACEIs – Cough” – consider as ACEI allergy).
• Documentation of an allergy/sensitivity to one particular ACEI is acceptable to take as an allergy to the entire class of ACEIs.
• When conflicting information is documented in a medical record, select “Yes”.
• In the absence of explicit documentation that the patient has current moderate/severe aortic stenosis, this should be inferred when there is documentation of a history of moderate/severe aortic stenosis without mention of repair or replacement, valvuloplasty, or commissurotomy.
• When determining whether there is a reason documented by a physician/APN/PA or pharmacist for not prescribing an ACEI at discharge:
  o Documentation of a reason for not prescribing one class (either ACEI or ARB) should be considered implicit documentation of a reason for not prescribing the other class for the following five conditions ONLY:
    ▪ Angioedema
    ▪ Hyperkalemia
    ▪ Hypotension
    ▪ Renal artery stenosis
    ▪ Worsening renal function/renal disease/dysfunction
  ▪ Examples of statements that count as a reason for not prescribing ACEI and a reason for not prescribing ARB at discharge:
    ▪ “Creatinine high. Hold lisartan.”
    ▪ “Hx angioedema with ACEIs.”
    ▪ “No ACEI. Bilateral renal artery stenosis.”
    ▪ “BPs running low. Discontinue losartan.”
    ▪ “Potassium 5.5 – No ACEI.”
    ▪ “Severe hypotension with ACEIs in past.”
    ▪ “Add ACEI if hyperkalemia resolves.”
  o Reasons for no ACEIs must be explicitly documented (e.g., “Potassium 5.5 – No ACEI”) or clearly implied (e.g., “Severe hypotension with ACEIs in past,” “Hx ACEI-induced cough,” “ACEIs contraindicated,” “Pt. refusing all medications,” “Supportive care only – no medications,” “ACEI therapy not indicated,” ACEI on pre-printed order form is crossed out, “No ACEI” [reason not given]). If reasons are not mentioned in the context of ACEIs, do not make inferences (e.g., Do not assume that an ACEI is not prescribed because of the patient's chronic renal disease alone).
  o Physician/APN/PA or pharmacist documentation of a hold on an ACEI or discontinuation of an ACEI that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing an ACEI at discharge. A hold/discontinuation of all p.o. medications counts if an ACEI p.o. was on order at the time of the notation.

EXCEPTIONS:

• Documentation of a conditional hold/discontinuation of an ACEI does not count as a reason for not prescribing an ACEI at discharge UNLESS (1) it exists as an order to hold/discontinue the ACEI if the blood pressure (BP) falls outside certain parameters, AND (2) the ACEI was held due to a BP outside the parameters. Nursing documentation is acceptable. E.g., “Hold perindopril for SBP less than 100” ordered and the nurse documents that the perindopril was held for a BP of 90/50 – select “Yes.”
• Discontinuation of a particular ACEI medication documented in combination with the start of a different ACEI medication (i.e., switch in type of ACEI medication) does not count as a reason for not prescribing an ACEI at discharge.

Examples:

• “Stop benazepril” and “Start captopril 50 mg po bid” in same physician order
• “Change captopril to lisinopril” in progress note
• “Do not continue after discharge” checked for Lotensin and “Continue after discharge” checked for Zestril on a physician-signed discharge medication reconciliation form

• Discontinuation of an ACEI medication at a particular dose documented in combination with the start of a different dose of that ACEI (i.e., change in dosage) does not count as a reason for not prescribing an ACEI at discharge. Examples:
  • “Stop lisinopril 20 mg po q am” and “Start lisinopril 30 mg po q am” in same physician order
  • “Increase Altace 5 mg to 10 mg” in progress note
  • “Do not continue after discharge” check for lisinopril 20 mg and “Continue after discharge” checked for Altace 5 mg on a physician-signed discharge medication reconciliation form

  o Reason documentation which refers to a more general medication class is not acceptable (e.g., “Hold all BP meds”).
  o Deferral of an ACEI from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing an ACEI at discharge unless the problem underlying the deferral is also noted.

Examples:

• “Consulting cardiologist to evaluate pt. for ACEI therapy” - select “No” (Do NOT consider as reason for not prescribing ACEI at discharge).
• “Pt. hypotensive. Start ACEI if OK with cardiology.” - select "Yes" (Consider as reason for not prescribing ACEI at discharge).

  o If there is documentation of a plan to initiate/restart an ACEI, and the reason/problem underlying the delay in starting/restarting the ACEI is also noted, this constitutes a “clearly implied” reason for not prescribing ACEI at discharge.

Acceptable examples (select “Yes”):

• "Pt. hemodynamically unstable. May start ACEI as outpatient.”
• “Add ACEI if hyperkalemia resolves”

Unacceptable examples (select “No”):

• “Consider starting lisinopril in a.m.”
• “May add accupril when pt. can tolerate”

  o Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay are acceptable (e.g., mid-hospitalization note stating “no ACEIs due to acute renal failure” - consider as reason for not
prescribing ACEI at discharge, even if documentation indicates that the acute renal failure had resolved by the time of discharge and ACEI was restarted).

- Crossing out of an ACEI counts as a "clearly implied reason" for not prescribing an ACEI at discharge only if on a pre-printed form.
- ACEIs are sometimes described as RAS (renin-angiotensin system) or RAAS (renin-angiotensin-aldosterone system) blockers/inhibitors. Documentation of a reason for not prescribing "RAS" or "RAAS" blockers or inhibitors should be considered implicit documentation of a reason for no ACEI at discharge (e.g., "Hold all RAS blockers").

- When the current record includes documentation of a pre-arrival reason for no ACEI, the following counts regardless of whether this documentation is included in a pre-arrival record made part of the current record or whether it is noted by hospital staff during the current hospital stay:
  - Pre-arrival ACEI allergy (reason for not prescribing ACEI).
  - Pre-arrival moderate/severe aortic stenosis (reason for not prescribing an ACEI).
  - Pre-arrival hold/discontinuation of an ACEI or notation such as "No ACEIs" IF the underlying reason/problem is also noted (e.g., “Prinivil held in transferring hospital due to hypotension”).
  - Pre-arrival "other reason" (other than hold/discontinuation or notation of "No ACEIs") (e.g., "Hx severe hypotension with enalapril" in transferring ED record).

**Guidelines for Abstraction:**

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Angioedema</strong></td>
<td><strong>ACEI Allergy</strong></td>
</tr>
<tr>
<td>o Angioneurotic edema</td>
<td>o ACEI allergy described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table</td>
</tr>
<tr>
<td>o Edema of the eyelid, glottis, larynx, nasopharynx, or pharynx</td>
<td><strong>Moderate/severe aortic stenosis (AS)</strong></td>
</tr>
<tr>
<td>o Periorbital edema described as acute</td>
<td>o aortic insufficiency only</td>
</tr>
<tr>
<td><strong>Hyperlalemia</strong></td>
<td>o aortic regurgitation only</td>
</tr>
<tr>
<td>o Patient's potassium (K+) level noted (e.g., &quot;Last Potassium 6.5. Will hold off on ACEI therapy&quot;)</td>
<td>o aortic stenosis described as 1+ or 2+</td>
</tr>
<tr>
<td>o Potassium (K+) level described as elevated</td>
<td>o Moderate/severe aortic stenosis, or any of the other moderate/severe aortic stenosis inclusion terms, described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table</td>
</tr>
<tr>
<td>o References to potassium not specified or described as hyperkalemia (e.g., “Hold off on ACEI therapy. Check potassium.”, “Start candesartan once potassium improved”)</td>
<td></td>
</tr>
<tr>
<td><strong>Hypotension</strong></td>
<td></td>
</tr>
<tr>
<td>o Blood pressure (BP) described as low</td>
<td></td>
</tr>
<tr>
<td>o Patient's blood pressure (BP) measurement noted (e.g., &quot;BP systolic running in 80s. Will not prescribe ACEIs at this time&quot;)</td>
<td></td>
</tr>
<tr>
<td>References to blood pressure not specified or described as hypotension (e.g., “Hold off on ACEI therapy. Check BP in a.m.”, “Start lisinopril after BP normalizes”)</td>
<td></td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>Shock</td>
<td></td>
</tr>
</tbody>
</table>

**Moderate/severe aortic stenosis (AS)**

- Aortic stenosis described as 3+, 4+, critical, or significant
- Aortic stenosis, degree of severity not specified
- Aortic valve area of less than 1.0 square cms
- Subaortic stenosis, moderate/severe or degree of severity not specified

**Worsening renal function/renal disease/dysfunction**

- Acute kidney injury (AKI)
- Azotemia
- Chronic kidney disease (CKD)
- Dialysis
- End stage renal disease (ESRD)
- Nephritis
- References to creatinine not specified or described as elevated (e.g., “Hold off on ACEI therapy. Check creatinine.”, “Start lotensin once creatinine improved”)
- References to renal/renal function not specified or described as renal dysfunction (e.g., “Hold on ACEI pending kidney function panel in a.m.”)
- Renal failure, acute or chronic (ARF, RF, CRF)
- Renal insufficiency (RI, CRI)
- Renal/kidney transplant (RT, RTx, s/p renal transplant, KT)
- Serum creatinine (Cr, Cre) level described as abnormal or elevated
- Serum creatinine (Cr, Cre) noted (e.g., "No ACEIs. Creatinine 2.0")

Refer to Appendix C, Table 1.2 for a comprehensive list of ACEIs.
REQUIRED: ARB Prescribed (at discharge)

Was an angiotensin receptor blocker (ARB) prescribed at discharge?

- Yes: ARB prescribed at discharge.
- No: ARB not prescribed at discharge, OR unable to determine from medical record documentation.

Notes for Abstraction:

- In determining whether an ARB was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list an ARB that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.
  o In cases where there is an ARB in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select "Yes") unless documentation elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.
  o If documentation is contradictory (e.g., physician noted “d/c losartan” in the discharge orders, but losartan is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine" (select "No").
  o Consider documentation of a hold on an ARB after discharge in one location and a listing of that ARB as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold losartan”). Examples of a hold with a defined timeframe include “Hold Diovan x2 days” and “Hold Verdia until after stress test.”
  o If an ARB is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of an ARB after discharge (e.g., “Hold Diovan x2 days,” “Start ARB as outpatient,” “Hold losartan”), select “No”.
  o If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc

Examples:

- Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
- Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.

- Disregard an ARB medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on candesartan”). Documentation must be clearer that the ARB was actually prescribed at discharge.
- Disregard documentation of ARB prescribed at discharge when noted only by medication class (e.g., "ARB Prescribed at Discharge: Yes” on a core measures form). The ARB must be listed by name.

Suggested Data Sources:

- Discharge instruction sheet

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• Discharge summary
• Medication reconciliation form
• Nursing discharge notes
• Physician orders

**Guidelines for Abstraction:**
See Table 4 for a list of ARBs

**OPTIONAL: ARB Medication, Dosage, Frequency (prescribed at discharge)**

Select the specific ARB Medication that was prescribed at discharge.
Select the dosage and frequency.

**REQUIRED: ARB Contraindicated (at discharge)**

Is there documentation of a reason for not prescribing an ARB at discharge?

**Allowable Values:**

- **Yes:** There is documentation of a reason for not prescribing an ARB at discharge.
- **No:** There is no documentation of a reason for not prescribing an ARB at discharge or unable to determine from medical record documentation.

**Notes for Abstraction:**

- Reasons for not prescribing an ARB at discharge must be documented by a physician/APN/PA or pharmacist.
- An “allergy” or “sensitivity” documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted.
- Documentation of an allergy/sensitivity to one particular ARB is acceptable to take as an allergy to the entire class of ARBs. (e.g., “Allergic to Valsartan”- consider as ARB allergy).
- When conflicting information is documented in a medical record, select “Yes”.
- In the absence of explicit documentation that the patient has current moderate/severe aortic stenosis, this should be inferred when there is documentation of a history of moderate/severe aortic stenosis without mention of repair or replacement, valvuloplasty, or commissurotomy.
- When determining whether there is a reason documented by a physician/APN/PA or pharmacist for not prescribing an ACEI or an ARB at discharge:
  - Documentation of a reason for not prescribing one class (either ACEI or ARB) should be considered implicit documentation of a reason for not prescribing the other class for the following five conditions ONLY:
    - Angioedema
    - Hyperkalemia
    - Hypotension
    - Renal artery stenosis
    - Worsening renal function/renal disease/dysfunction
  - Examples of statements that count as a reason for not prescribing ACEI and a reason for not prescribing ARB at discharge:
    - “Creatinine high. Hold losartan.”
    - “Hx angioedema with ACEIs.”
• “No ACEI. Bilateral renal artery stenosis.”
• “BPs running low. Discontinue losartan.”
• “Potassium 5.5 – No ACEI.”
• “Severe hypotension with ACEIs in past.”
• “Add ARB if hyperkalemia resolves.”

○ Reasons for no ARBs must be explicitly documented (e.g., “Potassium 5.5 – No ARB”) or clearly implied (e.g., “Severe hypotension with ARBs in past,” “ARBs contraindicated,” “Pt. refusing all medications,” “Supportive care only – no medications,” “ARB therapy not indicated,” ARB on pre-printed order form is crossed out, “No ARB” [reason not given]). If reasons are not mentioned in the context of ARBs, do not make inferences (e.g., Do not assume that an ARB is not prescribed because of the patient's chronic renal disease alone).

○ Physician/APN/PA or pharmacist documentation of a hold on an ARB or discontinuation of an ARB that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing an ARB at discharge. A hold/discontinuation of all p.o. medications counts if an ARB p.o. was on order at the time of the notation.

EXCEPTIONS:

• Documentation of a conditional hold/discontinuation of an ARB does not count as a reason for not prescribing an ARB at discharge UNLESS (1) it exists as an order to hold/discontinue the ARB if the blood pressure (BP) falls outside certain parameters, AND (2) the ARB was held due to a BP outside the parameters. Nursing documentation is acceptable. E.g., “Hold cozaar for SBP less than 100” ordered and the nurse documents that the perindopril was held for a BP of 90/50 – select “Yes.”

• Discontinuation of a particular ARB medication documented in combination with the start of a different ARB medication (i.e., switch in type of ARB medication) does not count as a reason for not prescribing an ARB at discharge.

Examples:

• “Stop valsartan” and “Start Cozaar 25 mg po bid” in same physician order
• “Change Diovan to Verdia” in progress note
• “Do not continue after discharge” checked for Diovan and “Continue after discharge” checked for Atacand on a physician-signed discharge medication reconciliation form

• Discontinuation of an ARB medication at a particular dose documented in combination with the start of a different dose of that ARB (i.e., change in dosage) does not count as a reason for not prescribing an ARB at discharge.

Examples:

• “Stop Cozaar 25 mg po q am” and “Start Cozaar 50 mg po q am” in same physician order
• “Increase Atacand 4 mg to 8 mg” in progress note
• “Do not continue after discharge” check for Cozaar 25 mg and “Continue after discharge” checked for Cozaar 50 mg on a physician-signed discharge medication reconciliation form

○ Reason documentation which refers to a more general medication class is not acceptable (e.g., “Hold all BP meds”).

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Deferral of an ARB from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing an ARB at discharge unless the problem underlying the deferral is also noted.

Examples:

- “Consulting cardiologist to evaluate pt. for ARB therapy” - select “No” (Do NOT consider as reason for not prescribing ARB at discharge).
- “Pt. hypotensive. Start ARB if OK with cardiology.” - select "Yes" (Consider as reason for not prescribing ARB at discharge).

If there is documentation of a plan to initiate/restart an ARB and the reason/problem underlying the delay in starting/restarting the ARB is also noted, this constitutes a “clearly implied” reason for not prescribing ARB at discharge.

Acceptable examples (select “Yes”):

- "Pt. hemodynamically unstable. May start ARB as outpatient."
- “Add ARB if hyperkalemia resolves”

Unacceptable examples (select “No”):

- “Consider starting Cozaar in a.m.” (Do NOT consider as reason for not prescribing ARB at discharge)
- “May add losartan when pt. can tolerate” (Do NOT consider as reason for not prescribing ARB at discharge)

Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay are acceptable (e.g., mid-hospitalization note stating “no ARBs due to acute renal failure” - consider as reason for not prescribing ARB at discharge, even if documentation indicates that the acute renal failure had resolved by the time of discharge and ARB was restarted). Crossing out of an ARBI counts as a "clearly implied reason" for not prescribing an ARB at discharge only if on a pre-printed form.

ARBs are sometimes described as RAS (renin-angiotensin system) or RAAS (renin-angiotensin-aldosterone system) blockers/inhibitors. Documentation of a reason for not prescribing "RAS" or "RAAS" blockers or inhibitors should be considered implicit documentation of a reason for no ARB at discharge (e.g., "Hold all RAS blockers").

When the current record includes documentation of a pre-arrival reason for no ARB, the following counts regardless of whether this documentation is included in a pre-arrival record made part of the current record or whether it is noted by hospital staff during the current hospital stay:

- Pre-arrival ARB allergy (reason for not prescribing ARB).
- Pre-arrival moderate/severe aortic stenosis (reason for not prescribing an ARB).
- Pre-arrival hold/discontinuation of an ARB or notation such as "No ARBs" IF the underlying reason/problem is also noted (e.g., “Cozaar held in transferring hospital due to hypotension”).
- Pre-arrival "other reason" (other than hold/discontinuation or notation of "No ARBs") (e.g., "Hx severe hypotension with enalapril" in transferring ED record).

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
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### Angioedema
- Angioneurotic edema
- Edema of the eyelid, glottis, larynx, nasopharynx, or pharynx
- Periorbital edema described as acute

### Hyperkalemia
- Patient's potassium (K+) level noted (e.g., "Last Potassium 6.5. Will hold off on ARB therapy")
- Potassium (K+) level described as elevated
- References to potassium not specified or described as hyperkalemia (e.g., “Hold off on ARB therapy. Check potassium.”, “Start candesartan once potassium improved”)  

### Hypotension
- Blood pressure (BP) described as low
- Patient's blood pressure (BP) measurement noted (e.g., "BP systolic running in 80s. Will not prescribe ARBs at this time")
- References to blood pressure not specified or described as hypotension (e.g., “Hold off on ARB therapy. Check BP in a.m.”, “Start candesartan after BP normalizes”)
- Shock

### ARB Allergy
- ARB allergy described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table

### Moderate/severe aortic stenosis (AS)
- aortic insufficiency only
- aortic regurgitation only
- aortic stenosis described as 1+ or 2+
- Moderate/severe aortic stenosis, or any of the other moderate/severe aortic stenosis inclusion terms, described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table

### Moderate/severe aortic stenosis (AS)
- Aortic stenosis described as 3+, 4+, critical, or significant
- Aortic stenosis, degree of severity not specified
- Aortic valve area of less than 1.0 square cms
- Subaortic stenosis, moderate/severe or degree of severity not specified

### Worsening renal function/renal disease/dysfunction
- Acute kidney injury (AKI)
- Azotemia
- Chronic kidney disease (CKD)
- Dialysis
- End stage renal disease (ESRD)
- Nephritis
- References to creatinine not specified or described as elevated (e.g., “Hold off on ARB therapy. Check creatinine.”, “Start candesartan once creatinine improved”)
- References to renal/renal function not specified or described as renal dysfunction (e.g., “Hold on ARB pending kidney function panel in a.m.”)
- Renal failure, acute or chronic (ARF, RF, CRF)
- Renal insufficiency (RI, CRI)
- Renal/kidney transplant (RT, RTx, s/p renal transplant, KT)
- Serum creatinine (Cr, Cre) level described as abnormal or elevated
- Serum creatinine (Cr, Cre) noted (e.g., "No ACEIs. Creatinine 2.0")

Refer to Appendix C, Table 1.7 for a comprehensive list of ARBs.

**REQUIRED: Aldosterone Antagonist Prescribed (at discharge)**

Was an aldosterone antagonist prescribed at discharge?

- Yes: Aldosterone antagonist prescribed at discharge.
- No: Aldosterone antagonist not prescribed at discharge OR unable to determine from medical record documentation.

**Notes for Abstraction:**

- In determining whether an aldosterone antagonist was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list an aldosterone antagonist that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.
  - In cases where there is an aldosterone antagonist in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select “Yes”) unless documentation elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.
o If documentation is contradictory (e.g., physician noted “d/c spironolactone” in the discharge orders, but spironolactone is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine" (select "No").

o Consider documentation of a hold on an aldosterone antagonist after discharge in one location and a listing of that aldosterone antagonist as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold spironolactone”). Examples of a hold with a defined timeframe include “Hold eplerenone x2 days” and “Hold eplerenone until after stress test.”

o If an aldosterone antagonist is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of an aldosterone antagonist after discharge (e.g., “Hold spironolactone x2 days,” “Start aldosterone antagonist as outpatient,” “Hold eplerenone”), select “No”.

o If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc.

Examples:

o Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.

o Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.

  • Disregard an aldosterone antagonist medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on spironolactone”). Documentation must be more clear that the aldosterone antagonist was actually prescribed at discharge.

  • Disregard documentation of aldosterone antagonist prescribed at discharge when noted only by medication class (e.g., " aldosterone antagonist Prescribed at Discharge: Yes” on a discharge checklist). The aldosterone antagonist must be listed by name.

  • See Appendix, Table 2 for a list of aldosterone antagonist medications.

OPTIONAL: Aldosterone Antagonist Medication, Dosage and Frequency:

Select the specific aldosterone antagonist medication that was prescribed at discharge.
Enter the dosage and frequency.

REQUIRED: Aldosterone Antagonist Contraindicated?

Is there documentation of a reason for not prescribing an aldosterone antagonist at discharge?

  • Yes: There is a documentation of a reason for not prescribing an aldosterone antagonist at discharge
  • No: There is no documentation of a reason for not prescribing an aldosterone antagonist at discharge or unable to determine from medical record documentation.

Notes for abstraction

  • Reasons for not prescribing an aldosterone antagonist at discharge must be documented by a physician/APN/PA or pharmacist.
• An aldosterone antagonist “allergy” or “sensitivity” documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., “Allergies: aldosterone antagonist – select “Yes”).

• Documentation of an allergy/sensitivity to one particular aldosterone antagonist is acceptable to take as an allergy to the entire class of aldosterone antagonist (e.g., "Allergic to Spironolactone").

• Physician/APN/PA or pharmacist documentation of a hold on an aldosterone antagonist or discontinuation of an aldosterone antagonist that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing an aldosterone antagonist at discharge. A hold/discontinuation of all p.o. medications counts if an aldosterone antagonist p.o. was on order at the time of the notation.
  o If there is documentation of a plan to initiate/restart an aldosterone antagonist, and the reason/problem underlying the delay in starting/restarting the aldosterone antagonist is also noted, this constitutes a “clearly implied” reason for not prescribing an aldosterone antagonist at discharge.
  o Documentation of a conditional hold/discontinuation of an aldosterone antagonist does not count as a reason for not prescribing an aldosterone antagonist at discharge.
  o Deferral of an aldosterone antagonist from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing an aldosterone antagonist at discharge unless the reason/problem underlying the deferral is also noted.
  o Reason documentation which refers to a more general medication class is not acceptable

• Reasons for no aldosterone antagonist must be explicitly documented (e.g., “SCr 2.6 mg/dL – No aldosterone antagonist”) or clearly implied (e.g., “Severe hyperkalemia with aldosterone antagonist in past,” “aldosterone antagonist contraindicated,” “Pt. refusing all medications,” “Supportive care only – no medications,” “aldosterone antagonist therapy not indicated,” aldosterone antagonist on pre-printed order form is crossed out, “No aldosterone antagonist” [reason not given]). If reasons are not mentioned in the context of aldosterone antagonist, do not make inferences (e.g., Do not assume that an aldosterone antagonist is not prescribed because of the patient's chronic renal disease alone).
  o Crossing out of an aldosterone antagonist counts as a “clearly implied reason” for not prescribing aldosterone antagonist at discharge only if on a pre-printed form.

• Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay is acceptable.

REQUIRED: Antiarrhythmic Prescribed (at discharge)

Was one of the antiarrhythmic medications listed below or any other Class I, Class III or unclassified antiarrhythmic drug prescribed at discharge.

• Yes: Antiarrhythmic drug prescribed at discharge.
• No: Antiarrhythmic drug not prescribed at discharge OR unable to determine from medical record documentation.

Notes for Abstraction:

• ONLY select “Yes” if the patient was prescribed one of the drugs listed under the next data element; “If yes, Medication” (amiodarone, dofetilide, dronedarone, flecainide, propafenone, sotalol) OR if any other Class I (Sodium Channel Blockers) or Class III (Potassium Channel Blockers) antiarrhythmic, adenosine, digoxin or magnesium sulfate were prescribed at discharge. DO NOT select “Yes” for calcium channel blockers or beta blockers prescribed at discharge. Class II - Beta Blocker and Class IV - Calcium Channel Blocker prescription at discharge are captured under separate data elements.

• In determining whether an antiarrhythmic drug was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge
summary may list an antiarrhythmic drug that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.

- If documentation is contradictory (e.g., physician noted “d/c Amiodarone” in the discharge orders, but Amiodarone is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine" (select "No").
- Consider documentation of a hold on an antiarrhythmic drug after discharge in one location and a listing of that antiarrhythmic drug as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold digoxin”). Examples of a hold with a defined timeframe include “Hold Amiodarone x2 days” and “Hold sotalol until after stress test.”
- If an antiarrhythmic drug is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of an antiarrhythmic drug after discharge (e.g., “Hold Flecainide x2 days,” “Start Amiodarone as outpatient,” “Hold digoxin Flecainide”), select “No”.
- If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc.

Examples:

- Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
- Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.
- Disregard an antiarrhythmic drug medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on spironolactone”). Documentation must be more clear that the antiarrhythmic drug was actually prescribed at discharge.
- Disregard documentation of antiarrhythmic drug prescribed at discharge when noted only by medication class (e.g., "antiarrhythmic drug Prescribed at Discharge: Yes” on a discharge checklist). The antiarrhythmic drug must be listed by name.
- See Appendix, Table 5 for a list of antiarrhythmic drugs.

**REQUIRED: If yes, Medication**

Select from the list the specific antiarrhythmic drug that was prescribed at discharge.

- Amiodarone
- Dofetilide
- Dronedarone
- Flecainide
- Propafenone
- Sotalol
- Other
Notes for Abstraction:

- ONLY select “Other” if the patient was prescribed any other Class I (Sodium Channel Blockers), Class III (Potassium Channel Blockers) or unclassified antiarrhythmic drugs listed in Table 5.

OPTIONAL: Dosage and Frequency

Select the dosage and frequency.

Were Dofetilide or Sotalol newly initiated or dose increased this hospitalization?

- Yes: The patient was either started on dofetilide or sotalol during the hospital stay OR was taking dofetilide or sotalol prior to admission and had a dose increase during this hospitalization.
- No: The patient was NOT started on dofetilide or sotalol during the hospital stay AND did NOT have a dose increase during this hospitalization if taking dofetilide or sotalol prior to admission.

If yes, was a QT interval documented after 5 doses and prior to discharge?

- Yes: QT interval was measured prior to discharge after 5 doses of newly initiated or dosage increase of dofetilide or sotalol.
- No: QT interval was NOT measured prior to discharge after 5 doses of newly initiated or dosage increase of dofetilide or sotalol or cannot be determined from medical record documentation.
- N/A: “N/A” should be selected in the extremely rare instance that Sotalol is started as an inpatient and the patient is discharged prior to 5 doses, with a plan to continue as an outpatient with QT monitoring.

Notes for Abstraction:

- In order to select “Yes”, you must first determine when during the hospitalization the patient had received 5 doses of newly initiated dofetilide or sotalol or had received 5 doses of dofetilide or sotalol at and increased dosage then determine if the QT interval was measured any time after the initiation of the 5th dose.
- If QT interval was measured prior to 5 doses being administered select “No”.
- If QT interval is measured during the hospitalization but you cannot determine whether it was done after 5 doses, select “No”.
- If 5 doses have not been initiated prior to discharge, select “No”.
- QT interval can be measured and documented on an automated 12 lead EKG or documented in the medical record by a physician/PA/APN.

REQUIRED: Anticoagulation Therapy Prescribed (at discharge)

Was an anticoagulation therapy prescribed at discharge?
Refer to Table 6 for a list of Anticoagulation Therapy medications.

- Yes: Anticoagulation therapy prescribed at discharge
- No: Anticoagulation therapy not prescribed at discharge, OR if this information cannot be determined from the medical record documentation

Notes for Abstraction:
In determining whether anticoagulation therapy was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list anticoagulation therapy that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.

- In cases where there is anticoagulation therapy in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select "Yes") unless documentation elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.
- If documentation is contradictory (e.g., physician noted “d/c warfarin” in the discharge orders, but warfarin is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine" (select "No").
- Consider documentation of a hold on anticoagulation therapy after discharge in one location and a listing of anticoagulation therapy as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold warfarin”). Examples of a hold with a defined timeframe include “Hold warfarin x2 days” and “Hold warfarin until after surgery.”
- If anticoagulation therapy is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of anticoagulation therapy after discharge (e.g., “Hold warfarin x2 days,” “Start anticoagulation therapy as outpatient,” “Hold dabigatran”), select “No”.
- If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc

Examples:

- Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
- Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.
  - Disregard anticoagulation therapy documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on warfarin”). Documentation must be clearer that the anticoagulation therapy was actually prescribed at discharge.
  - Disregard documentation of anticoagulation therapy prescribed at discharge when noted only by medication class (e.g., " Anticoagulation Therapy Prescribed at Discharge: Yes” on a discharge checklist). The anticoagulation therapy must be listed by name.
  - See Appendix, Table 6 for a list of anticoagulation therapy medications.

**REQUIRED: If yes, Class & Medication:**

If anticoagulation therapy was prescribed at discharge select the class and the specific medication prescribed:

- Warfarin
- Heparin
- Low Molecular Weight Heparin
- Direct Thrombin Inhibitor
Factor Xa inhibitor

Notes for Abstraction:

- See Table 6 for a list of anticoagulation therapy classes and medications.

OPTIONAL: Dosage and Frequency

Select the dosage and frequency.

REQUIRED: Anticoagulation Therapy Contraindicated

Is there documentation of a reason for not prescribing an anticoagulation therapy at discharge?

- Yes: There is a documentation of a reason for not prescribing an anticoagulation therapy at discharge
- No: There is no documentation of a reason for not prescribing an anticoagulation therapy at discharge or unable to determine from medical record documentation.

Notes for Abstraction:

Anticoagulation should be maintained in all patients with atrial fibrillation and a CHADS2 score of greater than equal to 2. This should be done regardless of whether sinus rhythm is achieved, because of the high rate of silent recurrence of atrial fibrillation with its attendant embolic risk, unless a contraindication exists. Even in patients who have undergone catheter ablation therapy or surgical MAZE there is uncertainty as to what the risk of recurrence of AF is over the long term, AF can recur without symptoms and be unrecognized by the patient or physician. Therefore anticoagulation is still indicated in HF patients with catheter ablation therapy or surgical MAZE for AF.

- Reasons for not prescribing anticoagulation therapy must be documented by a physician, advance practice nurse or physician assistant.
- If reasons are not mentioned in the context of anticoagulation therapy, do not make inferences (e.g., do not assume that anticoagulation therapy was not prescribed because of a bleeding disorder unless documentation explicitly states so).
  - Reasons must be explicitly documented (e.g., “Active GI bleed – anticoagulation therapy contraindicated”, “No warfarin” [no reason given]).
  - Physician/APN/PA or pharmacist documentation of a hold on an anticoagulant medication or discontinuation of an anticoagulant medication that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing anticoagulation therapy at discharge. A hold/discontinuation of all p.o. medications counts if an oral anticoagulant medication (e.g., warfarin) was on order at the time of the notation.

EXCEPTION:

- Documentation of a conditional hold or discontinuation of an anticoagulant medication (e.g., “Hold Coumadin if guaiac positive”, “Stop warfarin if rash persists.”).

- Deferral of anticoagulation therapy from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing anticoagulation therapy at discharge unless the problem underlying the deferral is also noted. Examples: An allergy or adverse reaction to one type of anticoagulant would NOT be a reason for not administering all anticoagulants. Another medication can be ordered.
  - “Consulting neurologist to evaluate pt. for warfarin therapy.” - select “No”.

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• “Rule out GI bleed. Start Coumadin if OK with neurology.” - select "Yes”.
• If there is documentation of a plan to initiate/restart anticoagulation therapy, and the reason/problem underlying the delay in starting/restarting anticoagulation therapy is also noted, this constitutes a “clearly implied” reason for not prescribing anticoagulation therapy at discharge.
  o Acceptable examples (select “Yes”):
    ▪ “Stool Occult Blood positive. May start Coumadin as outpatient.”
    ▪ “Start warfarin if hematuria subsides.”
  o Unacceptable examples (select “No”):
    ▪ “Consider starting Coumadin in a.m.”
    ▪ “May add warfarin when pt. can tolerate”
• Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay are acceptable (e.g., mid-hospitalization note stating “no warfarin due to rectal bleeding” - select “Yes,” even if documentation indicates that the rectal bleeding has resolved by the time of discharge and warfarin was restarted).
• Crossing out of an anticoagulant medication counts as a "clearly implied reason" for not prescribing anticoagulation therapy at discharge only if on a pre-printed form.
• An allergy or adverse reaction to one type of anticoagulant would NOT be a reason for not administering all anticoagulants. Another medication can be ordered.
• When the current record includes documentation of a pre-arrival reason for no anticoagulation therapy, the following counts regardless of whether this documentation is included in a pre-arrival record made part of the current record or whether it is noted by hospital staff during the current hospital stay:
  o Pre-arrival hold/discontinuation or notation such as "No Coumadin" IF the underlying reason/problem is also noted (e.g., “Coumadin held in transferring hospital due to possible GI bleed”)
  o Pre-arrival "other reason" (other than hold/discontinuation or notation of "No warfarin") (e.g., "Hx GI bleeding with warfarin" in transferring ED record).

• Reasons for not PRESCRIBING anticoagulation therapy at hospital discharge:
  • Allergy to all anticoagulant medications
  • Aortic dissection
  • Bleeding disorder
  • Brain/CNS cancer
  • CVA, hemorrhagic
  • Extensive/metastatic CA
  • Hemorrhage, any type
  • Intracranial surgery/biopsy
  • Patient/family refusal
  • Peptic ulcer
  • Planned surgery within 7 days following discharge
  • Risk of bleeding
  • Unrepaired intracranial aneurysm
  • Other documented by physician/APN/PA or pharmacist

**REQUIRED: Are there any relative or absolute contraindications to oral anticoagulant therapy? (Check all that apply)**

If anticoagulation therapy is contraindicated, select all contraindications.

• Allergy
• Unable to adhere/monitor
• Occupational risk
• High bleeding risk
• Prior intracranial hemorrhage
• Comorbid illness (e.g. renal/liver)
• Bleeding Event
• Need for dual antiplatelet therapy
• Frequent falls/frailty
• Patient refusal/preference
• Physician preference
• Current pregnancy
• Recent operation

Notes for Abstraction:

• Reasons for not prescribing anticoagulation therapy must be documented by a physician, advance practice nurse or physician assistant.
• If reasons are not mentioned in the context of anticoagulation, do not make inferences (e.g., do not assume that anticoagulation therapy is not being prescribed because of a bleeding disorder unless documentation explicitly states so.)

REQUIRED: Antiplatelet Prescribed (at discharge)?

Was an antiplatelet agent other than aspirin prescribed at discharge?

• Yes: Antiplatelet prescribed at discharge
• No: Antiplatelet not prescribed at discharge, OR unable to determine from medical record documentation.

OPTIONAL: If yes, Medication, Dosage and Frequency (Specify)

Select the specific antiplatelet that was prescribed.

• Aggrenox (Dipyridamole)
• Clopidogrel
• Ticlid (Ticlopidine)
• Prasugrel (Effient)
• Brilinta (Ticagrelor)
• Other

Select the dosage and frequency.

REQUIRED: Antiplatelet Contraindicated (at discharge)?

Is there documentation by a physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist in the medical record of a reason for not prescribing antiplatelet at hospital discharge?

• Yes: There is documentation of a reason for not prescribing antiplatelet at hospital discharge.
• No: There is no documentation of a reason for not prescribing antiplatelet at hospital discharge, OR unable to determine from the medical record documentation.

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Notes for Abstraction:

- Reasons for not prescribing antiplatelet at hospital discharge must be documented by a physician/APN/PA or pharmacist.
- **If reasons are not mentioned in the context of antiplatelet, do not make inferences** (e.g., do not assume that antiplatelet was not prescribed because of a bleeding disorder unless documentation explicitly states so).

  - Reasons must be explicitly documented (e.g., "Active GI bleed – antiplatelet contraindicated", "No Clopidogrel" [no reason given]).
  - Physician/APN/PA or pharmacist documentation of a hold on an antiplatelet medication or discontinuation of an antiplatelet medication that occurs during the hospital stay constitutes a "clearly implied" reason for not prescribing antiplatelet at discharge. A hold/discontinuation of all p.o. medications counts if an oral antiplatelet medication (e.g., Plavix) was on order at the time of the notation.

**EXCEPTIONS:**

- Documentation of a conditional hold or discontinuation of an antiplatelet medication (e.g., "Hold Aggrenox if guaiac positive", "Stop plavix if rash persists," "No Clopidogrel for 24 hours following thrombolytic therapy").

- Discontinuation of a particular antiplatelet medication documented in combination with the start of a different antiplatelet medication (i.e., switch type of antiplatelet medication) does not count as a reason for not prescribing an antiplatelet medication at discharge. Examples:
  
  - "Stop Plavix" and "Start Plavix 75 mg po daily" in same physician order
  - "Change Plavix to aspirin" in progress note
  - "Do not continue after discharge" checked for Plavix and "Continue after discharge" checked for clopidogrel on a physician-signed discharge medication reconciliation form

- Discontinuation of an antiplatelet medication at a particular dose documented in combination with the start of a different dose of that antiplatelet (i.e., change in dosage) does not count as a reason for not prescribing an antiplatelet medication at discharge. Examples:

  - "Stop Effient 10 mg po daily" and "Start Effient 5 mg po daily" in same physician order
  - "Increase Effient 5 mg to 10 mg daily" in progress note
  - "Do not continue after discharge" checked for Effient 10 mg and "Continue after discharge" checked for Ecotrin 5 mg on a physician-signed discharge medication reconciliation form

  - Deferral of antiplatelet from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing antiplatelet at discharge unless the problem underlying the deferral is also noted.
Examples:
- "Consulting cardiologist to evaluate pt. for Plavix" – select "No".
- "Rule out GI bleed. Start Plavix if OK with cardiology." - select "Yes".
  
  o If there is documentation of a plan to initiate/restart antiplatelet, and the reason/problem underlying the delay in starting/restarting antiplatelet is also noted, this constitutes a "clearly implied" reason for not prescribing antiplatelet at discharge.

  ▪ Acceptable examples (select "Yes"):  

    - "Stool Occult Blood positive. May start clopidogrel as outpatient."
    - "Start clopidogrel if hematuria subsides."

  ▪ Unacceptable examples (select "No"):  

    - "Consider starting Aggrenox in a.m."
    - "May add Plavix when pt. can tolerate"

  o Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay are acceptable (e.g., mid-hospitalization note stating "no Aggrenox due to rectal bleeding" - select "Yes," even if documentation indicates that the rectal bleeding has resolved by the time of discharge and Aggrenox was restarted).

  o Crossing out of an antiplatelet medication counts as a "clearly implied reason" for not prescribing antiplatelet at discharge only if on a pre-printed form.

  • When conflicting information is documented in the medical record, select "Yes."
  • When the current record includes documentation of a pre-arrival reason for no antiplatelet, the following counts regardless of whether this documentation is included in a pre-arrival record made part of the current record or whether it is noted by hospital staff during the current hospital stay:

    o Pre-arrival hold/discontinuation or notation such as "No clopidogrel" IF the underlying reason/problem is also noted (e.g., "clopidogrel held in transferring hospital due to possible GI bleed").

    o Pre-arrival "other reason" (other than hold/discontinuation or notation of "No clopidogrel") (e.g., "Hx GI bleeding with clopidogrel" in transferring ED record).

  • Acceptable reasons for not giving antiplatelet medication at hospital discharge may include:

    o Allergy to or complication related to antiplatelet
    o Serious side effect to medication
    o Aortic dissection
    o Bleeding disorder
    o Brain/CNS cancer
    o CVA, hemorrhagic
    o Extensive/metastatic CA
    o Hemorrhage, any type
    o Intracranial surgery/biopsy
    o Patient/family refusal
    o Peptic ulcer
    o Planned surgery within 7 days following discharge
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OPTIONAL: Frequency

Select the frequency.

REQUIRED: Aspirin Contraindicated (at discharge)?

Is there documentation by a physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist in the medical record of a reason for not prescribing aspirin at hospital discharge?

- Yes: There is documentation of a reason for not prescribing aspirin at discharge.
- No: There is no documentation of a reason for not prescribing aspirin at discharge or unable to determine from medical documentation.

Notes for Abstraction:

- Aspirin "allergy" or "sensitivity" documented at anytime during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., "Allergies: ASA – Upsets stomach" – select "Yes.").
- Documentation of an allergy/sensitivity to one particular type of aspirin is acceptable to take as an allergy to the entire class of aspirin-containing medications (e.g., "Allergic to Empirin").
- When determining whether Coumadin/warfarin or Pradaxa/dabigatran was prescribed at discharge (i.e., a reason for not prescribing aspirin at discharge):
  - Include Coumadin/warfarin or Pradaxa/dabigatran on hold at discharge but there is documentation of a plan to restart it after discharge. E.g., "Resume Coumadin after INR normalizes."
  - If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc.
- When conflicting information is documented in a medical record, select "Yes".
- When determining whether there is a reason documented by a physician/APN/PA or pharmacist for not prescribing aspirin at discharge:
  - Reasons must be explicitly documented (e.g., "Chronic hepatitis – No ASA") or clearly implied (e.g., "GI bleeding with aspirin in past," "ASA contraindicated," "Pt. refusing all medications," "Supportive care only – no medications," "Aspirin not indicated," aspirin on pre-printed order form is crossed out, "No aspirin" [no reason given]). If reasons are not mentioned in the context of aspirin, do not make inferences (e.g., Do not assume that aspirin is not being prescribed because of the patient's history of PUD alone).
  - Physician/APN/PA or pharmacist documentation of a hold on aspirin or discontinuation of aspirin that occurs during the hospital stay constitutes a "clearly implied" reason for not prescribing aspirin at discharge. A hold/discontinuation of all p.o. medications counts if aspirin p.o. was on order at the time of the notation.

EXCEPTIONS:
• Documentation of a conditional hold or discontinuation of aspirin does not count as a reason for not prescribing aspirin at discharge (e.g., "Hold ASA if positive Occult Blood stool," "Stop aspirin if blood in urine recurs").

• Discontinuation of a particular aspirin medication documented in combination with the start of a different aspirin medication (i.e., switch in type of aspirin medication) does not count as a reason for not prescribing aspirin at discharge.
  Examples:
  - "Stop aspiratab" and "Start Ecotrin 81 mg po q am" in same physician order
  - "Change ASA to buffered baby ASA" in progress note
  - "Do not continue after discharge" checked for aspirin and "Continue after discharge" checked for Aspirin Low Dose on a physician-signed discharge medication reconciliation form

• Discontinuation of an aspirin medication at a particular dose documented in combination with the start of a different dose of that aspirin (i.e., change in dosage) does not count as a reason for not prescribing aspirin at discharge.
  Examples:
  - "Stop aspirin 325 mg po q am" and "Start aspirin 81 mg po q am" in same physician order
  - "Increase aspirin 81 mg to 325 mg" in progress note
  - "Do not continue after discharge" checked for aspirin 325 mg and "Continue after discharge" checked for aspirin 81 mg on a physician-signed discharge medication reconciliation form

  o Reason documentation which refers to a more general medication class is not acceptable (e.g., "Hold all anticoagulants"). Exception: Documentation of a reason for not prescribing "antiplatelets" should be considered implicit documentation of a reason for no aspirin at discharge (e.g. "Antiplatelet therapy contraindicated").

  o Deferral of aspirin from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing aspirin at discharge unless the problem underlying the deferral is also noted.

  Examples:
  - "Consulting cardiologist to evaluate pt. for ASA." - select "No."
  - "Rule out intracranial bleed. Start ASA if OK with neurology." - select "Yes."

  o If there is documentation of a plan to initiate/restart aspirin, and the reason/problem underlying the delay in starting/restarting aspirin is also noted, this constitutes a “clearly implied” reason for not prescribing aspirin at discharge.

  • Acceptable examples (select "Yes"):  
    - "Stool Occult Blood positive. May start Bayer EC as outpatient."
    - "Add buffered aspirin if hematuria subsides"

  Unacceptable examples (select "No"):  
  - "Consider starting Ecotrin in a.m."
  - "May add ASA when pt. can tolerate"

  o Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay are acceptable (e.g., mid-
hospitalization note stating “no aspirin due to rectal bleeding” - select “Yes,” even if documentation indicates that the rectal bleeding has resolved by the time of discharge and aspirin was restarted.)

- Crossing out of aspirin counts as a "clearly implied reason" for not prescribing aspirin at discharge only if on a pre-printed form.

- When the current record includes documentation of a pre-arrival reason for no aspirin, the following counts regardless of whether this documentation is included in a pre-arrival record made part of the current record or whether it is noted by hospital staff during the current hospital stay:
  - Pre-arrival aspirin allergy
  - Pre-arrival hold/discontinuation or notation such as "No aspirin" IF the underlying reason/problem is also noted (e.g., "ASA held in transferring hospital due to possible GI bleed").
  - Pre-arrival "other reason" (other than hold/discontinuation or notation of "No aspirin") (e.g., "Hx GI bleeding with aspirin" in transferring ED record).

- Reasons for not prescribing aspirin at discharge may include:
  - Aspirin allergy
  - Coumadin/warfarin or Pradaxa/dabigatran prescribed at discharge
  - Other reasons documented by physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist

Consultation notes, Discharge instruction sheet, Discharge summary, Emergency department record, History and physical, Laboratory reports (OB+ stools), Medication administration record, Nursing notes, Physician orders, Progress notes.

Excluded Data Sources: Any documentation dated/timed after discharge, except discharge summary and operative/procedure/diagnostic test reports (from procedure done during hospital stay)

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
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<tbody>
<tr>
<td>o Refer to Appendix, Table 3 for a comprehensive list of Aspirin and Aspirin-Containing medications</td>
<td>o Aspirin allergy described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table</td>
</tr>
<tr>
<td>o Refer to Appendix, Table 4 for a comprehensive list for a comprehensive list of Warfarin medications</td>
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</tbody>
</table>

REQUIRED: Beta-Blocker Prescribed (at discharge)

Was a beta blocker prescribed at discharge?

- Yes: Beta-blocker medication prescribed at discharge
• No: Beta-blocker medication not prescribed at discharge, OR unable to determine from medical record documentation.

Notes for Abstraction:

  o See Table 8 for a list of Beta Blocker medications.
  o In determining whether a beta-blocker was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list a beta-blocker that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.
    ▪ In cases where there is a beta-blocker in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select "Yes") unless documentation elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.
    ▪ If documentation is contradictory (e.g., physician noted “d/c Coreg” in the discharge orders, but Coreg is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine" (select "No").
    ▪ Consider documentation of a hold on a beta-blocker after discharge in one location and a listing of that beta-blocker as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold Coreg”). Examples of a hold with a defined timeframe include “Hold Lopressor x2 days” and “Hold Propranolol until after stress test.”
    ▪ If a beta-blocker is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of a beta-blocker after discharge (e.g., “Hold Lopressor x2 days,” “Start beta-blocker as outpatient,” “Hold Coreg”), select “No”.
    ▪ If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc.
  o Disregard a beta-blocker medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on sotalol”). Documentation must be clearer that a beta-blocker was actually prescribed at discharge.
  o Disregard documentation of beta-blocker prescribed at discharge when noted only by medication class (e.g., “Beta-Blocker Prescribed at Discharge: Yes” on a core measures form). The beta-blocker must be listed by name.

Suggested Data Sources:

- Discharge instruction sheet
- Discharge summary
- Medication reconciliation form
- Nursing discharge notes
- Physician orders

Guidelines for Abstraction:
See Table 8 for a list of Beta Blockers
OPTIONAL: Beta Blocker Medication, Dosage and Frequency (Specify)

Select the specific beta-blocker medication that was prescribed at discharge. Select the dosage and frequency.

REQUIRED: Beta Blocker Contraindicated?

Is there documentation of a reason for not prescribing a beta-blocker at discharge?

- Yes: There is documentation of a reason for not prescribing a beta-blocker at discharge.
- No: There is no documentation of a reason for not prescribing a beta-blocker at discharge or unable to determine from medical record documentation.

Notes for Abstraction

- A beta-blocker “allergy” or “sensitivity” documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., “Allergies: Beta-blockers – Impotence” – select “Yes”).
- Documentation of an allergy/sensitivity to one particular beta-blocker is acceptable to take as an allergy to the entire class of beta-blockers (e.g., "Allergic to Lopressor").
- When conflicting information is documented in a medical record, select "Yes".

- When determining whether there is second- or third-degree heart block on ECG on arrival or during hospital stay AND does not have pacemaker:
  
  o Consider this true if (1) there are findings of second- or third-degree heart block on the ECG AND this same ECG does NOT show pacemaker findings, OR (2) There is documentation of a finding of second- or third-degree heart block (not specifically referenced as an ECG finding) without mention of the presence of pacemaker findings (e.g., "Second-degree heart block" per ER report).
  
  o Disregard pacemaker findings if documentation suggests the patient has a non-functioning pacemaker
  
  o Second- or third-degree heart block and pacemaker ECG findings can be taken from unsigned ECG reports. Physician/APN/PA documentation is not required.
  
  o Second- or third-degree heart block findings and pacemaker findings from telemetry and rhythm strips are acceptable.
  
  o In cases where ECG findings of second- or third-degree heart block are referenced and documentation does not address the presence or absence of pacemaker findings, infer no pacemaker findings. E.g., "ECG on arrival showed second-degree heart block" per H&P.

- When determining whether there is a reason documented by a physician/APN/PA or pharmacist for not prescribing a beta-blocker at discharge:
  
  o Reasons must be explicitly documented (e.g., “COPD - No BBs”, “HR running in 50s. Hold off on beta-blocker therapy” ) or clearly implied (e.g., “Severe hypotension with beta-blockers in past,” “BBs contraindicated,” “Pt. refusing all medications,” “Supportive care only – no medications,” “BBs not indicated,” beta-blocker on pre-printed order form is crossed out, “No beta-blockers” [no reason given]). If reasons are not mentioned in the context of beta-blockers, do not make inferences (e.g., Do not assume that a beta-blocker
is not being prescribed because of the patient's history of Peripheral Vascular Disease alone).

- Physician/APN/PA or pharmacist documentation of a hold on a beta-blocker or discontinuation of a beta-blocker that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing a beta-blocker at discharge. A hold/discontinuation of all p.o. medications counts if beta-blocker p.o. was on order at the time of the notation.

**EXCEPTIONS:**

- Documentation of a conditional hold/discontinuation of a beta-blocker does not count as a reason for not prescribing a beta-blocker at discharge UNLESS (1) it exists as an order to hold/discontinue the beta-blocker if the blood pressure (BP) or heart rate (HR) falls outside certain parameters, AND (2) the beta-blocker was held due to a BP/HR outside the parameters. Nursing documentation is acceptable. E.g., “Hold atenolol for SBP less than 100” ordered and the nurse documents that the atenolol was held for a BP of 90/50 – select “Yes.”

- Discontinuation of a particular beta-blocker medication documented in combination with the start of a different beta-blocker medication (i.e., switch in type of beta-blocker medication) does not count as a reason for not prescribing a beta-blocker at discharge. Examples:
  - “Stop sotalol” and “Start Tenormin 50 mg po qd” in same physician order
  - “Stop atenolol 25 mg po bid and start metoprolol 100 mg po qd” in same physician order
  - “Do not continue after discharge” checked for metoprolol and “Continue after discharge” checked for Bystolic on a physician-signed discharge medication reconciliation form

- Discontinuation of a beta-blocker medication at a particular dose documented in combination with the start of a different dose of that beta-blocker (i.e., change in dosage) does not count as a reason for not prescribing a beta-blocker at discharge. Examples:
  - “Stop Inderal 40 mg po bid and start Inderal 40 mg po tid” in same physician order
  - “Increase Lopressor 50 mg to 100 mg” in progress note
  - “Do not continue after discharge” checked for Coreg 3.125 mg and “Continue after discharge” checked for Coreg 6.25 mg on a physician-signed discharge medication reconciliation form

- Reason documentation which refers to a more general medication class is not acceptable (e.g., “Hold all BP meds”).

- Reason documentation which refers to eye drops containing beta-blocker is not acceptable (e.g., “Dc Timolol drops”).

- Deferral of a beta-blocker from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing a beta-blocker at discharge unless the problem underlying the deferral is also noted. Examples:
  - “Consulting cardiologist to evaluate pt. for BB treatment” - select “No.”
  - “Pt. hypotensive. Start beta-blocker if OK with cardiology.” - select "Yes."
If there is documentation of a plan to initiate/restart a beta-blocker, and the reason/problem underlying the delay in starting/restarting the beta-blocker is also noted, this constitutes a “clearly implied” reason for not prescribing a beta-blocker at discharge.

Acceptable examples (select “Yes”):
- "BPs running low. May start Atenolol as outpatient.”
- “Add Toprol if HR stabilizes”

Unacceptable examples (select “No”):
- “Consider starting Corgard in a.m.”
- “May add beta-blockers when pt. can tolerate”

Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay are acceptable (e.g., mid-hospitalization note stating “no beta-blockers due to hypotension” - select “Yes,” even if documentation indicates that the hypotension had resolved by the time of discharge and the beta-blocker was restarted).
- Crossing out of a beta-blocker counts as a "clearly implied reason" for not prescribing a beta-blocker at discharge only if on a pre-printed form.
- When the current record includes documentation of a pre-arrival reason for no beta-blocker, the following counts regardless of whether this documentation is included in a pre-arrival record made part of the current record or whether it is noted by hospital staff during the current hospital stay:
  - Pre-arrival beta-blocker allergy
    - Pre-arrival hold/discontinuation or notation such as "No beta-blockers" IF the underlying reason/problem is also noted (e.g., “Atenolol discontinued in transferring hospital secondary to hypotension”).
    - Pre-arrival "other reason" (other than a hold/discontinuation or notation of "No beta-blockers") (e.g., "Hx severe hypotension with Lopressor" in transferring ED record).

Suggested Data Sources:
- Consultation notes
- Discharge summary
- ECG reports
- Emergency department record
- History and physical
- Medication administration record
- Nursing notes
- Physician orders
- Progress notes
- Transfer sheet
- Vital signs graphic record
- Excluded Data Sources: Any documentation dated/timed after discharge, except discharge summary and operative/procedure/diagnostic test reports (from procedure done during hospital stay)
### Guidelines for Abstraction:

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<tr>
<td><strong>2nd/3rd degree heart blocks (HB) Note:</strong> The following inclusive terms may stand alone or be modified by &quot;variable&quot; or &quot;intermittent&quot;</td>
<td><strong>Beta-blocker allergy</strong></td>
</tr>
<tr>
<td>- Atrioventricular (AV) block described as 2:1, 3:1, second-degree, or third-degree</td>
<td>- beta-blocker allergy described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table</td>
</tr>
<tr>
<td>- Atrioventricular (AV) dissociation</td>
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<td>- Heart block (HB) described as 2:1, 3:1, complete (CHB), high degree, high grade, second-degree, or third-degree</td>
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<td>- Heart block, type/degree not specified</td>
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<td>- Mobitz Type 1 or 2</td>
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<td>- Wenckebach</td>
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<td><strong>Pacemaker findings</strong></td>
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<td>- Paced rhythm</td>
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<td>- Paced spikes</td>
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<td>- Pacing described as atrial, AV, dual chamber, or ventricular</td>
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Refer to Appendix C, Table 1.3 for a comprehensive list of beta-blockers

| Beta-blocker allergy                                                                 |                                                                           |
| - beta-blocker allergy described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table |                                                                           |

| **2nd/3rd degree heart blocks (HB)**                                                                 |                                                                           |
| - 2nd/3rd degree heart blocks (HB), or any of the other 2nd/3rd degree heart block inclusion terms, described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table |                                                                           |
| - Atrial flutter                                                                                     |                                                                           |
| - Atrioventricular (AV) block or conduction block, type/degree not specified                         |                                                                           |
| - First-degree atrioventricular (AV) block                                                          |                                                                           |
| - First-degree heart block (HB)                                                                     |                                                                           |
| - Heart block, type/degree not specified                                                            |                                                                           |
| - Intraventricular conduction delay (IVCD)                                                          |                                                                           |

### REQUIRED: Calcium Channel Blocker Prescribed (at discharge)

Was a calcium channel blocker prescribed at discharge?

- Yes: Calcium channel blocker prescribed at discharge.
- No: Calcium channel blocker not prescribed at discharge OR unable to determine from medical record documentation.

### Notes for Abstraction:

- In determining whether a calcium channel blocker was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list a calcium channel blocker that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.
  - In cases where there is a calcium channel blocker in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select "Yes") unless documentation...
elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.

- If documentation is contradictory (e.g., physician noted “d/c diltiazem” in the discharge orders, but diltiazem is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine” (select "No").
- Consider documentation of a hold on a calcium channel blocker after discharge in one location and a listing of that calcium channel blocker as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold diltiazem”). Examples of a hold with a defined timeframe include “Hold verapamil x2 days” and “Hold verapamil until after stress test.”
- If a calcium channel blocker is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of a calcium channel blocker after discharge (e.g., “Hold diltiazem x2 days,” “Start calcium channel blocker as outpatient,” “Hold verapamil”), select “No”.
- If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc

Examples:

- Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
- Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.
  - Disregard a calcium channel blocker medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on diltiazem”). Documentation must be clearer that the calcium channel blocker was actually prescribed at discharge.
  - Disregard documentation of calcium channel blocker prescribed at discharge when noted only by medication class (e.g., " Calcium Channel Blocker Prescribed at Discharge: Yes" on a discharge checklist). The calcium channel blocker must be listed by name.
  - See Table 9 for a list of calcium channel blocker medications.

**OPTIONAL: Calcium Channel Blocker Medication, Dosage and Frequency (Specify)**

Select the specific calcium channel blocker medication that was prescribed at discharge. Select the dosage and frequency.

**REQUIRED: Calcium Channel Blocker Contraindicated**

Is there documentation of a reason for not prescribing a calcium channel blocker at discharge?

- Yes: There is a documentation of a reason for not prescribing an calcium channel blocker at discharge
- No: There is no documentation of a reason for not prescribing a calcium channel blocker at discharge or unable to determine from medical record documentation.

**Notes for abstraction**
• Reasons for not prescribing a calcium channel blocker at discharge must be documented by a physician/APN/PA or pharmacist.
• An calcium channel blocker “allergy” or “sensitivity” documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., “Allergies: calcium channel blocker – select “Yes”).
• Documentation of an allergy/sensitivity to one particular calcium channel blocker is acceptable to take as an allergy to the entire class of calcium channel blocker (e.g., "Allergic to Spironolactone.")
• Physician/APN/PA or pharmacist documentation of a hold on a calcium channel blocker or discontinuation of a calcium channel blocker that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing a calcium channel blocker at discharge. A hold/discontinuation of all p.o. medications counts if a calcium channel blocker p.o. was on order at the time of the notation.
  o If there is documentation of a plan to initiate/restart a calcium channel blocker, and the reason/problem underlying the delay in starting/restarting the calcium channel blocker is also noted, this constitutes a “clearly implied” reason for not prescribing a calcium channel blocker at discharge.
  o Documentation of a conditional hold/discontinuation of a calcium channel blocker does not count as a reason for not prescribing a calcium channel blocker at discharge.
  o Deferral of a calcium channel blocker from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing a calcium channel blocker at discharge unless the problem underlying the deferral is also noted.
  o Reason documentation which refers to a more general medication class is not acceptable.
• Reasons for no calcium channel blocker must be explicitly documented (e.g., “SCr 2.6 mg/dL – No calcium channel blocker”) or clearly implied (e.g., “Severe hyperkalemia with calcium channel blocker in past,” “calcium channel blocker contraindicated,” “Pt. refusing all medications,” “Supportive care only – no medications,” “calcium channel blocker therapy not indicated,” calcium channel blocker on pre-printed order form is crossed out, “No calcium channel blocker” [reason not given]). If reasons are not mentioned in the context of calcium channel blocker, do not make inferences (e.g., Do not assume that a calcium channel blocker is not prescribed because of the patient's chronic renal disease alone).
  o Crossing out of a calcium channel blocker counts as a “clearly implied reason" for not prescribing calcium channel blocker at discharge only if on a pre-printed form.
• Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay is acceptable.

REQUIRED: Digoxin Prescribed (at discharge)

Was digoxin prescribed at discharge?

• Yes: Digoxin prescribed at discharge.
• No: Digoxin not prescribed at discharge OR unable to determine from medical record documentation.

Notes for Abstraction:

• In determining whether digoxin was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list digoxin that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.
  o In cases where there is digoxin in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select "Yes") unless documentation elsewhere in the
medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.

- If documentation is contradictory (e.g., physician noted “d/c digoxin” in the discharge orders, but digoxin is listed in the discharge summary's discharge medication list), or after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine” (select "No").

- Consider documentation of a hold on an digoxin after discharge in one location and a listing of that digoxin as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold digoxin”). Examples of a hold with a defined timeframe include “Hold digoxin x2 days” and “Hold digoxin until after stress test.”

- If digoxin is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restaring of an digoxin after discharge (e.g., “Hold digoxin x2 days,” “Start digoxin as outpatient,” “Hold digoxin”), select “No”.

- If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc

Examples:

- Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
- Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.
  - Disregard digoxin medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on digoxin”). Documentation must be clearer that the digoxin was actually prescribed at discharge.

See Table 2 for a list of aldosterone antagonist medications.

**OPTIONAL: Dosage and Frequency**

Select the dosage and frequency.

**REQUIRED: Digoxin Contraindicated**

Is there documentation of a reason for not prescribing digoxin at discharge?

- Yes: There is documentation of a reason for not prescribing digoxin at discharge.
- No: There is no documentation of a reason for not prescribing digoxin at discharge or unable to determine from medical record documentation.

**Notes for Abstraction:**

- Reasons for not prescribing digoxin at discharge must be documented by a physician/APN/PA or pharmacist.
- Digoxin “allergy” or “sensitivity” documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., “Allergies: digoxin – select “Yes”).
- Physician/APN/PA or pharmacist documentation of a hold on digoxin or discontinuation of digoxin that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing digoxin at
discharge. A hold/discontinuation of all p.o. medications counts digoxin was on order at the time of the notation.

- If there is documentation of a plan to initiate/restart digoxin, and the reason/problem underlying the delay in starting/restarting the digoxin also noted, this constitutes a “clearly implied” reason for not prescribing digoxin at discharge.
- Documentation of a conditional hold/discontinuation of digoxin does not count as a reason for not prescribing digoxin at discharge.
- Deferral of digoxin from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing digoxin at discharge unless the problem underlying the deferral is also noted.
- Reason documentation which refers to a more general medication class is not acceptable.

Reasons for no digoxin must be explicitly documented (e.g., “heart block – No digoxin”) or clearly implied (e.g., “Severe headache with digoxin in past,” “digoxin contraindicated,” “Pt. refusing all medications,” “Supportive care only – no medications,” “digoxin therapy not indicated,” digoxin on pre-printed order form is crossed out, “No digoxin” [reason not given]). If reasons are not mentioned in the context of digoxin, do not make inferences (e.g., Do not assume that digoxin is not prescribed because of the patient's chronic renal disease alone).

- Crossing out of digoxin counts as a “clearly implied reason” for not prescribing aldosterone antagonist at discharge only if on a pre-printed form.

Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay is acceptable.

**REQUIRED: Statin Therapy Prescribed (at discharge)**

*Element definition from Manual for National Hospital Inpatient Quality Measures*

Was a statin medication prescribed at discharge?

Documentation that a statin medication was prescribed at hospital discharge. Statins are a class of pharmaceutical agents that modify LDL cholesterol by blocking the action of an enzyme in the liver which is needed to synthesize cholesterol thereby decreasing the level of cholesterol circulating in the blood.

- Yes: Statin medication prescribed at discharge.
- No: Statin medication not prescribed at discharge, OR unable to determine from medical record documentation.

Notes for Abstraction:

- In determining whether a statin medication was prescribed at discharge, it is not uncommon to see conflicting documentation amongst different medical record sources. For example, the discharge summary may list a statin medication that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.
- In cases where there is a statin medication in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select "Yes") unless documentation elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.
- If documentation is contradictory (e.g., physician noted "d/c lovastatin " in the discharge orders, but lovastatin is listed in the discharge summary's discharge medication list), or, after careful examination of circumstances, context, timing, etc, documentation raises enough questions, the case should be deemed "unable to determine" (select "No").
Consider documentation of a hold on a statin medication after discharge in one location and a listing of that statin medication as a discharge medication in another location as contradictory ONLY if the timeframe on the hold is not defined (e.g., “Hold lovastatin”). Examples of a hold with a defined timeframe include “Hold Vytorin x2 days” and “Hold lovastatin until ALT/AST normalize.”

If a statin medication is NOT listed as a discharge medication, and there is only documentation of a hold or plan to delay initiation/restarting of a statin medication after discharge (e.g., “Hold Vytorin x2 days,” “Start statins as outpatient,” “Hold lovastatin”), select “No”.

If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc.

Examples:
- Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
- Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.

Disregard a statin medication documented only as a recommended medication for discharge (e.g., “Recommend sending patient home on lovastatin”). Documentation must be more clear that a statin was actually prescribed at discharge.

Disregard documentation of statin prescribed at discharge when noted only by medication class (e.g., “Statin Prescribed at Discharge: Yes” on a core measures form). The statin must be listed by name.

Suggested Data Sources:
- Consultation notes
- Discharge summary
- Medication reconciliation form
- Physician orders
- Progress notes

Inclusion Guidelines for Abstraction:
Refer to Appendix C, Table 8.1 for a comprehensive list of Statin Medications.

Exclusion Guidelines for Abstraction:
None

**REQUIRED: Statin Contraindicated (at discharge)?**

*Element definition from Manual for National Hospital Inpatient Quality Measures*

Is there documentation of a reason for not prescribing a statin medication at discharge?

Reasons for not prescribing a statin medication at discharge:

- Statin medication allergy
- Other reasons documented by physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist

Statins are a class of pharmaceutical agents that modify LDL cholesterol by blocking the action of an enzyme in the liver which is needed to synthesize cholesterol thereby decreasing the level of cholesterol circulating in the blood.

- Yes: There is documentation of a reason for not prescribing a statin medication at discharge.
• No: There is no documentation of a reason for not prescribing a statin medication at discharge, OR unable to determine from medical record documentation.

Notes for Abstraction:

• A statin medication "allergy" or "sensitivity" documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., "Allergies: Atorvastatin - Nausea" - select "Yes.").
• Documentation of an allergy/sensitivity to one particular statin medication is acceptable to take as an allergy to the entire class of statin medications (e.g., "Allergic to Lipitor").
• When conflicting information is documented in a medical record, select "Yes".
• In determining whether there is a reason documented by physician/APN/PA or pharmacist for not prescribing a statin medication at discharge:
  o Reasons must be explicitly documented (e.g., "Chronic liver failure - Statins contraindicated", "Hx muscle soreness with statins in past") or clearly implied (e.g., "No evidence of atherosclerosis - no statin therapy", "Pt. refusing all medications," "Supportive care only - no medication," statin medication on pre-printed order form is crossed out, "Statins not indicated," "No statin medications" [no reason given]). If reasons are not mentioned in the context of statin medications, do not make inferences (e.g., do not assume that a statin medication is not being prescribed because of the patient's history of alcoholism or severe liver disease alone).
  o Physician/APN/PA or pharmacist documentation of a hold on a statin medication or discontinuation of a statin medication that occurs during the hospital stay constitutes a "clearly implied" reason for not prescribing a statin medication at discharge. A hold/discontinuation of all p.o. medications counts if statin medication p.o. was on order at the time of the notation.
    ▪ EXCEPTIONS:
    ▪ Documentation of a conditional hold or discontinuation of a statin medication (e.g., "Hold Zocor if severe diarrhea persists," "Stop atorvastatin if myalgias persist").
    ▪ Discontinuation of a particular statin medication documented in combination with the start of a different statin medication (i.e., switch in type of statin medication) does not count as a reason for not prescribing a statin medication at discharge. Examples:
      ▪ “Stop lovastatin” and “Start atorvastatin 80 mg po q hs” in same physician order
      ▪ “Change Crestor to Lipitor” in progress note
      ▪ “Do not continue after discharge” checked for Vytorin and “Continue after discharge” checked for Advicor on a physician-signed discharge medication reconciliation form
    ▪ Discontinuation of a statin medication at a particular dose documented in combination with the start of a different dose of that statin (i.e., change in dosage) does not count as a reason for not prescribing a statin medication at discharge. Examples:
      ▪ “Stop Simvastatin 20 mg po q hs” and “Start Simvastatin 40 mg po q hs” in same physician order
      ▪ “Increase Pravachol 40 mg to 80 mg” in progress note
      ▪ “Do not continue after discharge” checked for Zocor 40 mg and “Continue after discharge” checked for Zocor 80 mg on a physician-signed discharge medication reconciliation form
    ▪ Reason documentation which refers to a more general medication class is not acceptable (e.g., “No cholesterol-reducers”, “Hold all lipid-lowering medications”).
Deferral of statin medication from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing a statin medication unless the problem underlying the deferral is also noted.

Examples:
- "Consulting neurologist to evaluate pt. for statin therapy" - select "No."
- "Severe diarrhea. Start statin if OK with neurology." - select "Yes."

If there is documentation of a plan to initiate/restart a statin medication, and the reason/problem underlying the delay in starting/restarting the medication is also noted, this constitutes a "clearly implied" reason for not prescribing a statin medication at discharge.

Acceptable examples (select "Yes"):
- "Liver enzymes high. May start lovastatin as outpatient."
- "Add statin if myalgias resolve"

Unacceptable examples (select "No"):
- "Consider starting statins in a.m."
- "May add Zocor when pt. can tolerate."

Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay are acceptable (e.g., mid-hospitalization note stating "no statin medications due to abnormal liver enzymes" - select "Yes," even if documentation indicates that the liver enzyme levels normalized by the time of discharge and the lipid-lowering medication was restarted).

Crossing out of a statin medication counts as a "clearly implied reason" for not prescribing statin medication at discharge only if on a pre-printed form.

Statin medications may also be referred to as HMG CoA reductase inhibitors

When the current record includes documentation of a pre-arrival reason for no statin medication, the following counts regardless of whether this documentation is included in a pre-arrival record made part of the current record or whether it is noted by hospital staff during the current hospital stay:

- Pre-arrival statin medication allergy
- Pre-arrival hold/discontinuation or notation such as "No stain medications" IF the underlying reason/problem is also noted (e.g., "Lipitor discontinued in transferring hospital secondary to severe diarrhea").
- Pre-arrival "other reason" (other than hold/discontinuation or notation of "No statin medications") (e.g., "Hx muscle soreness to statins in past" in transferring ED record).

If the patient has ICH only (no ischemic stroke or TIA) in the absence of any other statin indication it is acceptable to select “Yes” to “Statin Contraindicated”. Indication for statin would include if the patient has a medical history or new diagnosis on this admission of CAD, MI, Diabetes, PAD, Ischemic Stroke or TIA. If the patient has one of these indications for statin, it is NOT acceptable to select “Yes” unless there is explicit documentation of a contradiction to statin medication. (Note this is not from the definition from Specifications Manual for National Hospital Inpatient Quality Measures).

Suggested Data Sources:

- Consultation notes
- Discharge summary
- Emergency Department record
- History and physical
- Medication administration record
- Physician orders
- Medication reconciliation form
Progress Notes

Excluded Data Sources: Any documentation dated/timed after discharge, except discharge summary.

Inclusion Guidelines for Abstraction:

Examples:

- Hepatic failure
- Hepatitis
- Myalgias
- Patient/family refusal
- Rhabdomyolysis

See Table 13 for Statin Medications.

Exclusion Guidelines for Abstraction:

Statin medication allergy described using one of the negative modifiers or qualifiers listed in Appendix H, Table 2.6, Qualifiers and Modifiers Table.

REQUIRED: Hydralazine Nitrate Prescribed (at discharge)

Were both hydralazine and a formulation of nitrates either as a fixed dose combination or as individual medications prescribed at discharge?

- Yes: Hydralazine and nitrate was prescribed at discharge
- No: Hydralazine and nitrate was not prescribed at discharge, OR unable to determine from medical record documentation.

Notes for Abstraction:
See Table 11 for a list of hydralazine and nitrate containing medications.

REQUIRED: Contraindication to Hydralazine Nitrate (at discharge)

Is there documentation of a reason for not prescribing hydralazine and/or nitrates at discharge.

- Yes: There is a documentation of a reason for not prescribing hydralazine nitrate at discharge
- No: There is no documentation of a reason for not prescribing an antiarrhythmic drug at discharge or unable to determine from medical record documentation.

Notes for abstraction:

- Reasons for not prescribing hydralazine nitrate at discharge must be documented by a physician/APN/PA or pharmacist.
- Reasons for no hydralazine nitrate must be explicitly documented or clearly implied. If reasons are not mentioned in the context of hydralazine nitrate, do not make inferences.
- A hydralazine or nitrate “allergy” or “sensitivity” documented at any time during the hospital stay counts as an allergy regardless of what type of reaction might be noted (e.g., “Allergies: hydralazine or nitrate – select “Yes”
- Documentation of an allergy/sensitivity to one particular hydralazine or nitrate medication is acceptable to take as an allergy to the entire class of hydralazine nitrate (e.g., "Allergic to Bidil").
• Reasons do NOT need to be documented at discharge or otherwise linked to the discharge timeframe: Documentation of reasons anytime during the hospital stay is acceptable.
• Physician/APN/PA or pharmacist documentation of a hold on hydralazine nitrate or discontinuation of hydralazine nitrate that occurs during the hospital stay constitutes a “clearly implied” reason for not prescribing hydralazine nitrate at discharge. A hold/discontinuation of all p.o. medications counts if hydralazine nitrate p.o. was on order at the time of the notation.
  o If there is documentation of a plan to initiate/restart hydralazine nitrate, and the reason/problem underlying the delay in starting/restarting the hydralazine nitrate is also noted, this constitutes a “clearly implied” reason for not prescribing hydralazine nitrate at discharge.
  o Documentation of a conditional hold/discontinuation of hydralazine nitrate does not count as a reason for not prescribing a hydralazine nitrate at discharge.
  o Deferral of hydralazine nitrate from one physician/APN/PA or pharmacist to another does NOT count as a reason for not prescribing hydralazine nitrate at discharge unless the problem underlying the deferral is also noted.
• Reason documentation which refers to a more general medication class is not acceptable.

OPTIONAL: Other Medications at Discharge

Select all other medications prescribed at discharge that apply. The list includes:

• Diuretic: See Table 10 for a list of diuretic drugs.
• NSAIDS/COX-2 Inhibitor: See Table 12 for a list of NSAIDS/COX-2 medications

RISK INTERVENTIONS

• Smoking Cessation Counseling Given
• Rhythm Control/Rate Control Strategy Planned/Intended
• Patient and/or caregiver received education and/or resource materials?
• Risk factors
• Stroke Risk
• Management
• Medication Adherence
• Follow-up
• When to call provider
• Anticoagulation Therapy Education Given
• PT/INR Planned Follow-up
• Who will be following patients INR?
• Date of INR test planned post discharge
• System Reason for no PT/INR Planned Follow-up?
• TLC (Therapeutic Lifestyle Change) Diet
• Obesity Weight Management
• Activity Level/Recommendation
• Screening for obstructive sleep apnea
• Referral for evaluation of obstructive sleep apnea if positive screen
• Discharge medication instruction provided
REQUIRED: Smoking Cessation Counseling Given

Documentation in the medical record that smoking cessation advice or counseling was given during the hospital stay.

- Yes: The patient/caregiver received smoking cessation advice/counseling during hospital stay.
- No: Smoking cessation advice/counseling not given or unable to determine from medical record documentation.

Notes for Abstraction:

- If the patient refused smoking cessation advice or counseling during this hospital stay, select “Yes”.
- If the patient has a history of cigarette smoking within the year prior to the arrival date but the patient does not currently smoke, they should be advised to continue not smoking. For these patients, if this advice/counseling was not done, select “No”.
- If the patient is prescribed Wellbutrin (bupropion), it should not be assumed that this is a smoking cessation aid unless specifically noted as such. It is sometimes used as an antidepressant unrelated to smoking.
- In cases where a document provides a checkbox for this information and the checkbox is left unchecked, credit for giving smoking cessation counseling to the patient/caregiver should not be taken. E.g. Checkbox on discharge instruction sheet which reads, "For more information on quitting smoking classes, please contact 1-800-XXX-XXXX" is left unchecked-select "No".
- The caregiver is defined as the patient’s family or any other person (e.g., home health, VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.
- If documentation indicates that written instructions/material on risk factors for stroke were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes".

Acceptable forms of advice and counseling include:

- Direct discussion with patient or caregiver about stopping smoking (e.g., "advised patient to stop smoking")
- Prescription of smoking cessation aid (e.g., Habitrol, NicoDerm, Nicorette, Nicotrol, Prostep, Zyban) during hospital stay or at discharge
- Prescription of Wellbutrin/bupropion during hospital stay or at discharge aid or alternative FDA-approved smoking cessation medication if prescribed as smoking cessation
- Referral to smoking cessation class/program
- Smoking cessation brochures/handouts/video

Suggested Data Sources: consultation notes, respiratory therapy notes, discharge instruction sheet, discharge summary, emergency room notes, history and physical, medication administration record (MAR) nurses notes, progress notes, teaching sheet.

Excluded Data Sources: Any documentation dated/timed after discharge, except discharge summary and operative/procedure/diagnostic test reports (from procedure done during hospital stay).

REQUIRED: Rhythm Control/Rate Control Strategy Planned/Intended

Is there documentation in the medical record of a plan for rhythm or rate control?
• Rhythm Control Strategy Planned: There is documentation demonstrating a plan for pharmacological or electrical strategy to restore or maintain sinus rhythm.
• Rate Control Strategy Planned: There is documentation demonstrating a plan for pharmacological or electrical rate control. A rate control strategy is an effort to control the ventricular rate with no commitment to restore or maintain sinus rhythm.
• No Documentation of Strategy: There is no documentation demonstrating a plan for rhythm or rate control.

Notes for Abstraction:

• Documentation that the patient was prescribed dofetilide/sotalol/profpafenone/flecainide without mention of whether it is intended for rate or rhythm control, select “Rhythm Control Strategy Planned.”
• If the patient was prescribed dronedarone, a plan for restoration of sinus rhythm, cardioversion, ablation or surgical MAZE operation must be documented in order to select “Rhythm Control Strategy Planned.”
• If the patient was prescribed amiodarone, select “Rhythm Control Strategy” unless there is express documentation that a Rate Control Strategy is planned or intended, then select “Rate Control Strategy.”
• If the patient received during this hospitalization or is referred for cardioversion, ablation, surgical MAZE or dual chamber pacemaker implantation, select “Rhythm Control Strategy Planned.”
• Documentation that the patient was prescribed rate control drug alone (beta blocker (other than sotalol), digoxin, verapamil, dilitazem) without an antiarrhythmic drug and without mention of whether it is intended for rate or rhythm control, select “Rate Control Strategy Planned.”
• If the discharge atrial rhythm was sinus rhythm or atrial pacing select “Rhythm Control Strategy Planned.”

REQUIRED: Patient and/or caregiver received education and/or resource materials regarding all of the following:

Notes to abstractors: Record documentation must reflect that the patient and/or caregiver has received education and/or resource materials. If the organization uses standardized written materials that contain the required components, i.e., Risk factors for atrial fibrillation/flutter, Stroke Risk, Management, Medication Adherence, Follow-up, and When to call provider, then documentation of receipt of these tools is adequate for GWTG.

Select the "Check all as Yes" to quickly answer "Yes" to all five Education questions.

REQUIRED: Risk factors

Documentation that the patient/caregiver received educational materials that address risk factors associated with development or worsening of atrial fibrillation/flutter. Patient education programs for specific chronic conditions have increased healthful behaviors, improved health status, and/or decreased health care costs of their participants.

Yes - WRITTEN instructions/educational material given to patient/caregiver address risk factors for atrial fibrillation/flutter.
No - WRITTEN instructions/educational material given to patient/caregiver do not address risk factors atrial fibrillation/flutter, OR unable to determine from medical record documentation.

Notes for Abstraction:

• Educational material must specifically atrial fibrillation/flutter.
Example:

- Atrial Fibrillation/Flutter Risk Factors:
  - Overweight
  - Excessive Alcohol

- See the inclusion list for acceptable risk factors for atrial fibrillation/flutter. The list is not all-inclusive.
- Individual risk factors that are not mentioned in the context of education provided on the risk factors for atrial fibrillation/flutter do not count (e.g., discharge instruction to limit alcohol without explicit documentation that excessive alcohol consumption is a risk factor for atrial fibrillation/flutter.)
- Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.
- Documentation must clearly convey that the patient/caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.
- Written instructions given anytime during the hospital stay are acceptable.
- If the patient refused written instructions/material which addressed risk factors for atrial fibrillation/flutter, select "Yes."
- If documentation indicates that written instructions/material on risk factors for atrial fibrillation/flutter were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes".
- The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.

Suggested Data Sources:

- Discharge instruction sheet
- Discharge summary
- Education record
- Home health referral form
- Nursing discharge notes
- Nursing notes
- Progress notes
- Teaching sheet

Guidelines for Abstraction:

Inclusion

- Risk Factors for atrial fibrillation/flutter (this list is not all inclusive):
  - Age
  - Excessive alcohol consumption
  - Heredity (family history)
  - Hypertension
  - Other heart disease (e.g., coronary heart disease, heart failure, dilated cardiomyopathy)
  - Valvular Heart Disease
  - Sleep apnea
  - Thyroid problems
  - Diabetes mellitus
Overweight (BMI >= 25)

Exclusion
Unchecked checkbox next to instruction (e.g., blank checkbox on discharge instruction sheet next to “Atrial Fibrillation/flutter Risk Factors teaching sheet given to patient”).

REQUIRED: Stroke Risk

Documentation that the patient/caregiver received educational materials that address the patient’s risk for embolic ischemic stroke.

- Yes - WRITTEN instructions/educational material given to patient/caregiver address risk factors for stroke.
- No - WRITTEN instructions/educational material given to patient/caregiver do not address risk factors for stroke, OR unable to determine from medical record documentation.

Notes for Abstraction:

- Educational material must specifically address the patient’s risk for ischemic stroke.

Example:

- Risk Factors that Increase Ischemic Stroke Risk
  - Prior stroke or TIA
  - Age greater than 75 years
  - Female sex
  - Hypertension
  - Diabetes mellitus
  - Heart failure or impaired left ventricular systolic function
  - History of Vascular Disease (CAD, Prior MI, PAD)

- See the inclusion list for acceptable risk factors for ischemic stroke. The list is not all-inclusive.
- Individual risk factors for ischemic stroke that are not mentioned in the context of education provided on the risk factors for ischemic stroke, do not count (e.g., discharge instruction that mention the patient has heart failure without explicit documentation that heart failure is a risk factor for ischemic stroke).
- Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.
- Documentation must clearly convey that the patient/caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.
- Use only documentation provided in the medical record itself. Do not review and use outside materials in abstraction. Do not make assumptions about what content may be covered in material documented as given to the patient/caregiver.
- Written instructions given anytime during the hospital stay are acceptable.
- If the patient refused written instructions/material which addressed risk factors for ischemic stroke, select "Yes."
• If documentation indicates that written instructions/material on risk factors for ischemic stroke were not
given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term
memory loss) and has no caregiver available, select "Yes".
• The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider,
prison official or other law enforcement personnel) who will be responsible for care of the patient after
discharge.

Suggested Data Sources:
• Discharge instruction sheet
• Discharge summary
• Education record
• Home health referral form
• Nursing discharge notes
• Nursing notes
• Progress notes
• Teaching sheet

Guidelines for Abstraction:
Inclusion
• Risk Factors for increased ischemic stroke risk:
  o Prior stroke or TIA
  o Age greater than 75 years
  o Hypertension
  o Diabetes mellitus
  o Heart failure or impaired LV systolic function
  o History of Vascular Disease (CAD, Prior MI, PAD)
  o Female Sex

Exclusion
Unchecked checkbox next to instruction (e.g., blank checkbox on discharge instruction sheet next to "Risk
Factors for Ischemic Stroke teaching sheet given to patient").

REQUIRED: Management

Documentation that the patient/caregiver received educational materials that address atrial fibrillation/flutter
management.
• Yes - WRITTEN instructions/educational material given to patient/caregiver address management of
atrial fibrillation/flutter
• No - WRITTEN instructions/educational material given to patient/caregiver do not address management
of atrial fibrillation/flutter, OR unable to determine from medical record documentation.

Notes for Abstraction:
• Educational material at a minimum should address the management of:
  o Patient’s thromboembolic risk (i.e. management of hypertension and other conditions that
    increase ischemic stroke risk
  o Management of anticoagulation therapy (if applicable).
Heart rate control
Heart rhythm control

Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.

Documentation must clearly convey that the patient/caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.

Written instructions given anytime during the hospital stay are acceptable.

If the patient refused written instructions/material which addressed management of atrial fibrillation/flutter, select "Yes."

If documentation indicates that written instructions/material on management of atrial fibrillation/flutter were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes."

The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.

Suggested Data Sources:

- Discharge instruction sheet
- Discharge summary
- Education record
- Home health referral form
- Nursing discharge notes
- Nursing notes
- Progress notes
- Teaching sheet

Guidelines for Abstraction:

Inclusion: None

Exclusion
Unchecked checkbox next to instruction (e.g., blank checkbox on discharge instruction sheet next to "Management of Atrial Fibrillation/Flutter teaching sheet given to patient").

REQUIRED: Medication Adherence

Documentation that the patient/caregiver received educational materials that address medication adherence.

- Yes - WRITTEN instructions/educational material given to patient/caregiver address medication adherence.
- No - WRITTEN instructions/educational material given to patient/caregiver do not medication adherence, OR unable to determine from medical record documentation.

Notes for Abstraction:

Educational material must address the importance of taking all medications as prescribed (i.e. how often to take medications, do not stop or change medication without first speaking to your physician). It is not sufficient to just provide a list of medications and instructions or a copy of prescriptions.
• Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.
• Documentation must clearly convey that the patient/caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.
• Written instructions given anytime during the hospital stay are acceptable.
• If the patient refused written instructions/material which addressed risk factors medication adherence select "Yes."
• If documentation indicates that written instructions/material on risk factors for medication adherence were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes".
• The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.

Suggested Data Sources:

• Discharge instruction sheet
• Discharge summary
• Education record
• Home health referral form
• Nursing discharge notes
• Nursing notes
• Progress notes
• Teaching sheet

Guidelines for Abstraction:
Inclusion: None
Exclusion
Unchecked checkbox next to instruction (e.g., blank checkbox on discharge instruction sheet next to "Medication Adherence teaching sheet given to patient").

REQUIRED: Follow-up

Documentation that the patient/caregiver received educational materials that address the need for continuing medical care after discharge.

• Yes - WRITTEN instructions/educational material given to patient/caregiver address follow-up with a physician/APN/PA after discharge.
• No - WRITTEN instructions/educational material do not address follow-up with a physician/APN/PA or unable to determine from medical record documentation.

Notes for Abstraction:

• In the absence of explicit documentation that follow-up involves contact with a physician/APN/PA, the abstractor may infer contact with a physician/APN/PA, unless documentation suggests otherwise (e.g., BP check, laboratory work only).
- Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.
- Documentation must clearly convey that the patient/caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.
- Written instructions given anytime during the hospital stay are acceptable.
- If the patient refused written instructions/material which addressed follow-up, select "Yes."
- If documentation indicates that written instructions/material on follow-up after discharge were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes".
- The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.

**Suggested Data Sources:**
- Discharge instruction sheet
- Discharge summary
- Education record
- Home health referral form
- Nursing discharge notes
- Nursing notes
- Progress notes
- Teaching sheet

**Guidelines for Abstraction:**

**Inclusion:** None

**Exclusion**
- Follow-up prescribed on PRN or as needed basis
- Follow-up noted only as Not Applicable (N/A), None, or left blank
- Pre-printed follow-up appointment instruction with all fields left blank (e.g., “Please return for follow up appointment with Dr. [blank line] on [blank line]”, "Make an appointment with your physician in [blank line] for follow up"), unless next to checked checkbox
- Unchecked checkbox next to instruction (e.g., blank checkbox on discharge instruction sheet next to "Call Dr. ’s office for appointment within two weeks")

**REQUIRED: When to call provider**

Documentation that the patient/caregiver received educational materials that address when to call their provider.

- Yes: WRITTEN discharge instructions/educational material given to patient/caregiver address when to call their provider.
- No: WRITTEN discharge instructions/educational material do not address when to call their provider, **OR** unable to determine from medical record documentation.

**Notes for Abstraction:**
Include instructions/educational material which address when to call their provider if symptoms recur or do not improve after discharge.
  o Examples:
    ▪ “Make an appointment if you have an irregular and rapid heartbeat or pulse”
    ▪ “Call physician/APN/PA if you feel heart palpitations or rapid thumping inside the chest”
    ▪ “Come to the emergency room if you experience shortness of breath or anxiety, syncope (fainting), dizziness, sweating and chest pain or pressure”
    ▪ “Call the office if you find yourself tiring more easily when exercising”

Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.
  o Documentation must clearly convey that the patient /caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.

Written instructions given anytime during the hospital stay are acceptable.

If the patient refused written discharge instructions/material which addressed when to call their provider, select “Yes.”

If documentation indicates that written instructions/material on when to call their provider were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes”.

The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.

Guidelines for Abstraction:
Inclusion:

- Atrial Fibrillation/Flutter Symptoms
  o Rapid and irregular heartbeat
  o Heart palpitations or fluttering or “thumping” in the chest
  o Dizziness
  o Shortness of breath and anxiety
  o Weakness
  o Faintness, syncope or confusion
  o Fatigue when exercising
  o Sweating
  o Chest pain or pressure

Exclusion:

- Instructions on atrial fibrillation symptoms without mention of what to do if symptoms occur
- Instructions on what to do to do if symptoms worsen, problems occur, the patient's condition changes or worsens, etc., without being specified or described as atrial fibrillation/flutter in nature (e.g., “Call physician if symptoms get worse,” “Contact office with any problems”)
- Instructions on what to do when symptoms occur noted only as Not Applicable (N/A), None, or left blank
- Unchecked checkbox next to instruction (e.g., blank checkbox on discharge instruction sheet next to “Notify your doctor if you experience rapid or irregular heartbeat”)
REQUIRED: Anticoagulation Therapy Education Given

Documentation that the patient/caregiver received anticoagulation therapy educational materials.

- Yes - WRITTEN instructions/educational material given to patient/caregiver address anticoagulation therapy.
- No - WRITTEN instructions/educational material given to patient/caregiver do not address anticoagulation therapy, OR unable to determine from medical record documentation.

Notes for Abstraction:

- Patients who are discharged on anticoagulation therapy should receive appropriate educational materials. Educational material should include information about (this is not an inclusive list):
  - What is anticoagulation therapy
  - The need for regular blood tests (prothrombin time (PT), International Normalized Ratio (INR)) for patients discharged on warfarin or heparin.
  - Side effects, precautions/safety (including diet)
- Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.
- Documentation must clearly convey that the patient/caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.
- Written instructions given anytime during the hospital stay are acceptable.
- If the patient refused written instructions/material which addressed anticoagulation therapy education select "Yes."
- If documentation indicates that written instructions/material on anticoagulation therapy were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes".
- The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.

REQUIRED: PT/INR Planned Follow-up

For patients prescribed warfarin at discharge, is there documentation in the medical record that the patient received written instructions about PT/INR follow-up?

- Yes – Patient received WRITTEN instructions about PT/INR follow-up. This includes information about how to schedule an appointment and a recommended timeframe for follow-up or an INR follow-up test actually scheduled. No – There is no documentation that the patient received written instructions about INR follow-up.

Notes for Abstraction:

- The patient/caregiver must receive instruction on how to schedule a follow-up for PT/INR blood work (i.e. who to contact, when the test should be scheduled) with a recommended timeframe for follow-up. It is not required that an actual appointment for PT/INR blood work be scheduled prior to discharge in order to select “Yes”.

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Use only documentation provided in the inpatient medical record itself. Do not review and use outside materials in abstraction.

If documentation indicates that written instructions/material were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes".

The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for care of the patient after discharge.

**REQUIRED: Who will be following patients INR?**

If there is documentation of a plan for PT/INR follow-up, who will be following the patient’s INR?

- Home INR Monitoring: The patient has been instructed to use a home INR monitoring device for INR follow-up.
- Anticoagulation Warfarin Clinic: The patient has been instructed to contact an outpatient warfarin clinic for INR follow-up.
- Managed by Physician associated with hospital: The patient has been instructed to contact a physician associated with your hospital for INR follow-up.
- Managed by outside physician: The patient has been instructed to contact a physician not associated with your hospital for INR follow-up.
- Not documented: The patient has been instructed to follow-up for INR monitoring but it is not documented who will be following the INR.

**Notes for Abstraction:**

- If there are multiple points of follow-up documented, select the location where the patient will be receiving their first INR test.
- “Physician’s associated with the hospital” are physicians who have privileges at your institution.
- “Outside physician” is a physician who does not have privileges at your institution.

**REQUIRED: Date of INR test planned post discharge**

Enter the date of the recommended first INR follow-up test after discharge documented in the medical record.

If the INR recommended follow-up test is documented as a range (i.e. “follow-up for INR test within 5-7 days”), use the latest recommended timeframe for the date (i.e. the 7th day).

If the date of the follow-up INR test is not documented in the medical record or the INR follow-up test is not scheduled, select the “Not Documented” checkbox.

**REQUIRED: System Reason for no PT/INR Planned Follow-up?**

If no PT/INR follow-up planned, is there a system reason documented for no PT/INR follow-up?

- Yes: There is a documented system reason for no PT/INR follow-up planned.
- No: There is not a documented system reason for no PT/INR follow-up planned.

**Notes for Abstraction:**
• System reasons for no planned PT/INR follow-up should only include the following and must be documented in the inpatient hospitalization medical record: Patient refusal, patient unable to understand (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, patient discharged to a correctional facility or patient is out of the country.

REQUIRED: TLC (Therapeutic Lifestyle Change) Diet

Did the patient receive counseling/education on the Therapeutic Lifestyle Changes (TLC) diet?

• Yes: Patient received counseling/education on the Therapeutic Lifestyle Changes (TLC) diet.
• No: Patient did not receive counseling/education on the Therapeutic Lifestyle Changes (TLC) diet.
• Not Documented:
• Not Applicable:

For more information, visit http://www.nhlbi.nih.gov/cgi-bin/chd/step2intro.cgi. TLC includes 2 therapeutic diet options: Plant stanol/sterol (add 2 g per day) and soluble fiber (add 5 to 10 g per day). TLC is an example of daily dietary patterns that are consistent with AHA-recommended dietary goals.

The TLC Diet is a low saturated fat, low cholesterol diet that will help to reduce blood cholesterol level to decrease the patient’s chance of developing heart disease, future heart attacks, and other heart disease complications.

Under TLC Diet Guidelines – patients should eat:

• Less than 7% of the day's total calories from saturated fat
• 25-35 percent of the day’s total calories from fat
• Less than 200 mg of dietary cholesterol a day
• Limit sodium intake to 2400 mg a day
• Just enough calories to achieve or maintain a healthy weight and reduce blood cholesterol level

Source: This information is usually listed in the nutritionist, dietitian, or nursing notes.

OPTIONAL: Obesity Weight Management

Patients with a BMI of 25 or higher are candidates for treatment. The treatment can be either medication or diet instruction.

Indicate if the patient received treatment by selecting one of the following:

• Yes: Patient received weight management treatment.
• No: Patient did not receive weight management treatment.
• Not Documented:

• Not Applicable: Patient has a BMI less than 25.

OPTIONAL: Activity Level/Recommendation

Patients who exercise less than 3 days a week for 30 minutes should receive a written activity recommendation or referral to cardiac rehabilitation.

Indicate if the patient received a written activity recommendation, by selecting one of the following:
• Yes: Patient received activity recommendations or referral to cardiac rehabilitation.
• No: Patient did not receive activity recommendations or referral to cardiac rehabilitation.

• Not Documented:
• Not Applicable: Patient currently exercises at least 3 times a week for 30 min or longer or currently attends cardiac rehabilitation.

Notes for Abstraction:

• Exercise or activity advice or discussion can be conducted by a physician/APN/PA or exercise specialist.
• Patients should receive recommendation to engage in a minimum of 30 to 60 min of physical activity daily or at least 3 to 4 times weekly.
• Advice or discussion conducted with the patient by physician, nurse, or other personnel about the importance of joining a cardiac rehabilitation program or an appointment made is also acceptable to select “Yes”.

OPTIONAL: Screening for obstructive sleep apnea

Was the patient screened for obstructive sleep apnea prior to discharge?

• Yes: The patient was screened for obstructive sleep apnea prior to discharge.
• No: The patient was not screened for obstructive sleep apnea prior to discharge.
• Not Documented:
• Not Applicable: The patient has a medical history of sleep apnea.

Notes for Abstraction:

• A screening need not be a formal sleep study or consultation with a sleep disorder specialist but should be a standardized screening tool accepted by the institution. Documentation in the record should indicate that a screen was completed by a physician, physician assistant, advanced practice nurse or RN prior to discharge.
• A variety of methods may be employed to screen for obstructive sleep apnea. These methods may include but are not limited to:
  o Berlin Questionnaire
  o STOP Questionnaire
  o Hospital developed screening tool

OPTIONAL: Referral for evaluation of obstructive sleep apnea if positive screen

Was the patient referred for evaluation of obstructive sleep apnea?

• Yes: Patient was referred for further testing for obstructive sleep apnea.
• No: Patient was not referred for further testing for obstructive sleep apnea.
• Not Documented: There is no documentation regarding obstructive sleep apnea.
• Not Applicable: Patient was not screened for obstructive sleep apnea or screen was negative.

OPTIONAL: Discharge medication instruction provided
Documentation that the patient/caregiver received educational materials that address all medications prescribed at discharge. Instructions must address at least the names of all discharge medications but may also include other usage instructions such as dosages, frequencies, side effects, etc. The importance of medications prescribed to prevent a second stroke (e.g., Plavix) should be emphasized.

- Yes - WRITTEN instructions/educational material given to patient/caregiver address discharge medications.
- No - WRITTEN instructions/educational material do not address all discharge medications, OR unable to determine from medical record documentation.

Abstraction is a two-step process:

- Determine all of the medications being prescribed at discharge, based on available medical record documentation.
  - Discharge medication information included in a discharge summary dated after discharge should be used as long as it was added within 30 days after discharge.
  - If two discharge summaries are included in the medical record, use the one with the latest date/time. If one or both are not dated or timed, and you cannot determine which was done last, use both. This also applies to discharge medication reconciliation forms. Use the dictated date/time over transcribed date/time, file date/time, etc.
    - Examples:
      - Two discharge summaries, one dictated 5/22 (day of discharge) and one dictated 5/27 - Use the 5/27 discharge summary.
      - Two discharge medication reconciliation forms, one not dated and one dated 4/24 (day of discharge) - Use both.
  - If discharge medications are noted using only references such as "continue home meds," "resume other meds," or "same medications," rather than lists of the names of the discharge medications, the abstractor should use all sources to compile a list of medications the patient was on prior to arrival (or in the case of acute care transfers, use the medications the patient was on prior to arrival at the first hospital).
  - Disregard all references to laxatives, antacids, vitamins, minerals (EXCEPT potassium), food supplements, and herbs, prn or not, AND disregard references to medications by class only (e.g., "heparinoids") where the specific medication name is not specified. They are NOT required in the written instructions for the purposes of the Stroke Education measure (STK-8).
  - PRN medications are required on the discharge instructions, with ONE exception: When discharge medications outside of the written discharge instructions are noted using ONLY references such as "continue current medications" or "continue present meds," rather than lists of the names of the discharge medications, and the abstractor is referencing what medications the patient was taking on the day of discharge (for comparison against the written discharge instructions, to confirm completeness of that list), medications which are clearly listed as prn (given on an as needed basis only) do NOT need to be included in the instructions.
  - Oxygen should not be considered a medication.
  - Medications which the patient will not be taking at home (and/or the caregiver will not be giving at home) are NOT required in the medication list included in the written discharge instructions (e.g., monthly B12 injections, dialysis meds, chemotherapy).
- Check this list against the written discharge instructions given to the patient to ensure that these instructions addressed at least the names of all of the discharge medications. If a list of discharge medications is not documented elsewhere in the record, and the completeness of the medication list in the instructions cannot be confirmed as complete, or it can be determined to be incomplete, select "No."
EXCEPTION: If a comparison list is not available, and the discharge list in the written discharge instructions cannot be determined to be complete or incomplete, but the written discharge instructions have the name or initials of the physician/advanced practice nurse/physician assistant (physician/APN/PA) signed on the form, presume the list of discharge medications in those instructions is complete.

In making medication name comparisons, consider two medications that are brand/trade name vs. generic name in nature or that have the same generic equivalent as matches.

Examples of matches:
- Coumadin vs. Warfarin
- ASA vs. EC ASA
- Plavix vs. Clopidogrel
- Mevacor vs. Lovastatin
- Lopressor vs. Metoprolol
- Metoprolol vs. Metoprolol succinate

Example of a mismatch:
- Lopressor vs. Toprol

If there is documentation that the patient was discharged on insulin(s) of ANY kind, ANY reference to insulin in the written discharge instructions is sufficient, for the purposes of the Stroke Education measure (STK-8). E.g., Dc summary notes patient discharged on "Humulin Insulin" and "Insulin 70/30" is listed on the discharge instruction sheet - Consider this a match.

In determining the medications prescribed at discharge (step 1 above), all discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.

If there is a medication in one source that is not mentioned in other sources, take it as a discharge medication (i.e., required in the written discharge instructions) unless documentation elsewhere in the medical record suggests that it was NOT prescribed at discharge - Consider it a discharge medication in the absence of contradictory documentation.

If documentation is contradictory (e.g., physician noted "d/c ASA" or "hold ASA" in the discharge orders, but it is listed in the discharge summary's discharge medication list), or, after careful examination of circumstances, context, timing, etc, documentation raises enough questions about what medications are being prescribed at discharge, the case should be deemed "unable to determine" (select "No"), regardless of whether the medication in question is included in the written discharge instructions.

In cases in which there was a therapeutic substitution of a medication (e.g., per hospital formulary Atorvastatin substituted for Mevacor) and it is not clear which medication the patient is being discharged on, select "No" regardless of which medication is included in the written discharge instructions.

If there is only documentation of a plan to start/restart a medication after discharge (e.g., "Hold Lasix x 2 days," "Start Plavix as outpatient"), and it is NOT listed as a discharge medication elsewhere (e.g., "Lasix," "Plavix"), it is not required in the discharge instructions (but if it is listed on the instructions, this is acceptable).

If there is documentation of a plan to start/restart a medication after discharge or a hold on a medication for a defined timeframe after discharge (e.g., “Start Plavix as outpatient,” “Hold Lasix x 2 days,” “Hold ASA until after endoscopy”):
- If it is NOT listed as a discharge medication elsewhere (e.g., “Lasix,” “Plavix”), it is not required in the discharge instructions (but if it is listed on the instructions, this is acceptable).
- If it IS listed as a discharge medication elsewhere (e.g., “Lasix,” “Plavix”), do not regard this as contradictory documentation, and require the medication in the discharge instructions.
o Do not give credit in cases where the patient was given written discharge medication instructions only in the form of written prescriptions.

o Acceptable materials include discharge instruction sheets, brochures, booklets, teaching sheets, videos, CDs, and DVDs.
  - Documentation must clearly convey that the patient/caregiver was given a copy of the material to take home. When the material is present in the medical record and there is no documentation which clearly suggests that a copy was given, the inference should be made that it was given IF the patient's name or the medical record number appears on the material AND hospital staff or the patient/caregiver has signed the material.
  - Use only documentation provided in the medical record itself. Do not review and use outside materials in abstraction. Do not make assumptions about what content may be covered in material documented as given to the patient/caregiver.

o Written instructions given anytime during the hospital stay are acceptable.

o If the patient refused written discharge instructions/material which addressed discharge medications, select "Yes."

o If documentation indicates that written instructions/material on discharge medications were not given because the patient is cognitively impaired (e.g., comatose, obtunded, confused, short-term memory loss) and has no caregiver available, select "Yes".

o The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider, prison official or other law enforcement personnel) who will be responsible for the care of the patient after discharge.

Suggested Data Sources:

- Discharge instruction sheet
- Discharge progress notes
- Discharge summary
- Home health referral form
- Medication reconciliation form
- Nursing notes
- Teaching sheet

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Any general reference to a medication regimen (e.g., &quot;continue home meds&quot; listed on discharge instruction sheet), without specific documentation of medication names.</td>
</tr>
</tbody>
</table>

OPTIONAL FIELDS

The Optional fields can be used as a method to flag specific CRFs (patient records) as desired or to track any additional information not already collected in the Patient Management Tool.

Optional Fields 1-10
Optional 1 through Optional 10 are text fields that can hold up to 20 alphanumeric characters. To use these, you will need to decide on consistent representations for the fields you will use. It is your responsibility to keep a log of what you are tracking, which optional field number you used for entering, the code you assigned, and when you began/ended tracking. For instance, Optional 1 will always be used to track the hospital floor and the codes or text entered will be (i.e., the telemetry unit on 6 North will be entered as 6N).

Suggested Uses:

- Tracking patients involved in other research studies is an example of hospital-specific tracking.
- You could also track time points for procedures not already collected on the CRF.
- Due to concerns about patient confidentiality, the patient's medical record number, SSN, etc. should not be recorded in the optional field(s).

Optional Fields 11-12

Optional 11 and Optional 12 are actual site-maintained code lists, similar to the Physician/Service list. With the right user privileges you will find under the "My Account" tab a link to Manage Code Lists. Here you can add or edit the codes you want to appear in these lists. For additional analytical power, you can filter reports using Optional 11 and Optional 12.

Additional Comments

Any additional comments can be captured here.

ADMIN

- ICD-9-CM Principal Diagnosis Code
- ICD-9-CM Other Diagnosis Codes
- ICD-9-CM Principal Procedure Code
- ICD-9-CM Other Procedure Codes
- ICD-9-CM Other Procedure Dates
- CPT Code
- CPT Code Date
- Was this Case Sampled?
- During this hospital stay, was the patient enrolled in a clinical trial in which patients with the same condition as the measure set were being studied?

REQUIRED: ICD-9-CM Principal Diagnosis Code

Element definition from Specifications Manual for National Hospital Inpatient Quality Measures

The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code associated with the diagnosis established after study to be chiefly responsible for occasioning the admission of the patient for this hospitalization.

Any valid ICD-9-CM diagnosis code

Notes for Abstraction:
The principal diagnosis is defined in the Uniform Hospital Discharge Data Set (UHDDS) as "that condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for
care."

**Suggested Data Sources:**

- Discharge summary
- Face sheet
- UB-04, Field Location: 67

**OPTIONAL: ICD-9-CM Other Diagnosis Codes**

The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code associated with the diagnosis for this hospitalization.

**Allowable Values:**
Any valid ICD-9-CM diagnosis code

**Notes for Abstraction:**
None

**Suggested Data Sources:**

- Discharge summary
- Face sheet
- UB-04, Field Location: 67A-Q

Note: Medicare will only accept codes listed in fields A-H

**Inclusion Guidelines for Abstraction:** None

**Exclusion Guidelines for Abstraction:** None

**OPTIONAL: ICD-9-CM Principal Procedure Code**

The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code that identifies the principal procedure performed during this hospitalization. The principal procedure is the procedure performed for definitive treatment rather than diagnostic or exploratory purposes, or which is necessary to take care of a complication.

**Allowable Values:**
Any valid ICD-9-CM procedure code

**Notes for Abstraction:**
The principal procedure as described by the Uniform Hospital Discharge Data Set (UHDDS) is one performed for definitive treatment rather than diagnostic or exploratory purposes, or which is necessary to take care of a complication.

**Suggested Data Sources:**

- Discharge summary
- Face sheet
- UB-04, Field Location: 74

**OPTIONAL: ICD-9-CM Principal Procedure Date**
The month, day, and year when the principal procedure was performed.

- MM = Month (01-12)
- DD = Day (01-31)
- YYYYY = Year (20xx)
- UTD = Unable to Determine
Notes for Abstraction:

- If the principal procedure date is unable to be determined from medical record documentation, select "UTD."
- The medical record must be abstracted as documented (taken at "face value"). When the date documented is obviously in error (not a valid date/format or is outside of the parameters of care [after Discharge Date]) and no other documentation is found that provides this information, the abstractor should select "UTD."
- Examples:
  - Documentation indicates the ICD-9-CM Principal Procedure Date was 02-42-20XX. No other documentation in the medical record provides a valid date. Since the ICD-9-CM Principal Procedure Date is outside of the range listed in the Allowable Values for "Day," it is not a valid date and the abstractor should select "UTD."
  - Patient expires on 02-12-20XX and documentation indicates the ICD-9-CM Principal Procedure Date was 03-12-20XX. Other documentation in the medical record supports the date of death as being accurate. Since the ICD-9-CM Principal Procedure Date is after the Discharge Date (death), it is outside of the parameter of care and the abstractor should select "UTD."

Note: Transmission of a case with an invalid date as described above will be rejected from the QIO Clinical Warehouse and the Joint Commission's Data Warehouse. Use of "UTD" for ICD-9-CM Principal Procedure Date allows the case to be accepted into the warehouse.

Suggested Data Sources:

- Consultation notes
- Diagnostic test reports
- Discharge summary
- Face sheet
- Operative notes
- Procedure notes
- Progress notes
- UB-04, Field Location: 74

OPTIONAL: ICD-9-CM Other Procedure Codes

The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes identifying all significant procedures other than the principal procedure.

Any valid ICD-9-CM procedure code

Suggested Data Sources:

- Discharge summary
- Face sheet
- UB-04, Field Location: 74A-E

OPTIONAL: ICD-9-CM Other Procedure Dates

The month, day, and year when the associated procedure(s) was (were) performed.

- MM = Month (01-12)
- DD = Day (01-31)
- YYYY = Year (20xx)
• UTD = Unable to Determine

Notes for Abstraction:

• If the procedure date for the associated procedure is unable to be determined from medical record documentation, select "UTD."
• The medical record must be abstracted as documented (taken at "face value"). When the date documented is obviously in error (not a valid format/range or outside of the parameters of care [after Discharge Date]) and no other documentation is found that provides this information, the abstractor should select "UTD."
• Examples:
  o Documentation indicates the ICD-9-CM Other Procedure Dates was 02-42-20 XX. No other documentation in the medical record provides a valid date. Since the ICD-9-CM Other Procedure Dates is outside of the range listed in the Allowable Values for "Day," it is not a valid date and the abstractor should select "UTD."
  o Patient expires on 02-12-20 XX and documentation indicates the ICD-9-CM Other Procedure Dates was 03-12-20 XX. Other documentation in the medical record supports the date of death as being accurate. Since the ICD-9-CM Other Procedure Dates is after the Discharge Date (death), it is outside of the parameters of care and the abstractor should select "UTD."

Note: Transmission of a case with an invalid date as described above will be rejected from the QIO Clinical Warehouse and the Joint Commission's Data Warehouse. Use of "UTD" for ICD-9-CM Other Procedure Dates allows the case to be accepted into the warehouse.

Suggested Data Sources:

• Consultation notes
• Diagnostic test reports
• Discharge summary
• Face sheet
• Operative notes
• Procedure notes
• Progress notes
• UB-04, Field Location: 74A-E

OPTIONAL: CPT Code

Please enter the Current Procedural Terminology (CPT) code(s) associated with this patient encounter. CPT Codes can be found in Table 14

OPTIONAL: CPT Code Date

Enter the date, month, day and year, for the CPT code associated with this patient encounter. Use the format MM/DD/YYYY. If the date is Unknown, check the “Unknown” checkbox.

OPTIONAL: Was this Case Sampled?

Check if patient is part of a sample

Indicates if the data being transmitted for a hospital has been sampled, or represent an entire population for the specified time period.

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Y (Yes) The data represents part of a sample.
N (No) The data is not part of a sample; this indicates the hospital is performing 100 percent of the discharges eligible for this measure set.

**OPTIONAL: During this hospital stay, was the patient enrolled in a clinical trial in which patients with the same condition as the measure set were being studied?**

Documentation that during this hospital stay the patient was enrolled in a clinical trial in which patients with the same condition as the measure set were being studied (i.e. Atrial Fibrillation).

- Yes (There is documentation that during this hospital stay the patient was enrolled in a clinical trial in which patients with the same condition as the measure set were being studied (i.e. Atrial Fibrillation))
- No (There is no documentation that during this hospital stay the patient was enrolled in a clinical trial in which patients with the same condition as the measure set were being studied (i.e. Atrial Fibrillation), or unable to determine from medical record documentation)

**Notes for Abstraction:**
To select "Yes" to this data element, BOTH of the following must be true:

- **There must be a signed consent form for clinical trial.** For the purposes of abstraction, a clinical trial is defined as an experimental study in which research subjects are recruited and assigned a treatment/intervention and their outcomes are measured based on the intervention received. Treatments/interventions most often include use of drugs, surgical procedures, and devices. Often a control group is used to compare with the treatment/intervention. Allocation of different interventions to participants is usually randomized.
- **There must be documentation on the signed consent form that during this hospital stay the patient was enrolled in a clinical trial in which patients with the same condition as the measure set were being studied (i.e. Atrial Fibrillation).** Patients may either be newly enrolled in a clinical trial during the hospital stay or enrolled in a clinical trial prior to arrival and continued active participation in that clinical trial during this hospital stay.

In the following situations, select "No":

- **There is a signed patient consent form for an observational study only.** Observational studies are non-experimental and involve no intervention (e.g., registries). Individuals are observed (perhaps with lab draws, interviews, etc.), data is collected, and outcomes are tracked by investigators. Although observational studies may include the assessment of the effects of an intervention, the study participants are not allocated into intervention or control groups.
- **It is not clear whether the study described in the signed patient consent form is experimental or observational.**
- **It is not clear which study population the clinical trial is enrolling.** Assumptions should not be made if it is not specified.

**Suggested Data Sources:**
Only acceptable data sources: Signed consent form for clinical trial

**Inclusion Guidelines for Abstraction:** None

---

**OTHER RISK SCORES**
• CHADS2-VASC
• ATRIA
• HAS-BLED

ABOUT SUPPLEMENTAL STROKE AND BLEEDING RISK SCORES

The Patient Management Tool has been programmed to auto-populate elements in the “Other Risk Scores” Tab based on response options to Medical History, Other Risk Factors and Labs within the core A-Fib form. It is important that you review the pre-populated responses within each of the Risk Scores to verify they are correct and select any additional risk factors the patient may have prior to clicking the calculate button.

Stroke Risk Scores

CHADS2-VASC

CHADS2-VASc is a clinical prediction rule for assessing the risk of stroke or thromboembolism in patients with non-valvular atrial fibrillation. CHADS2-VASc is an extension of the CHADS2 score. It includes three additional stroke risk factors [vascular disease (myocardial infarction, peripheral artery disease and complex aortic plaque), age 65-74 years, and female sex] and providing increased weight to the CHADS2 risk factor age ≥ 75 years. This novel risk score has expanded predictive value for stroke and may be particularly useful in the classification of atrial fibrillation patients at a low or intermediate risk for stroke (CHADS2 score of 0 or 1). The ACC/AHA/ESC 2006 Guidelines for the Management of Patients With Atrial Fibrillation support the use of the CHADS2 score in assessment of thromboembolic risk and indication for anticoagulation therapy is stratified using the CHADS2 score in GWTG-AF.


To learn more, visit http://journal.publications.chestnet.org/data/Journals/CHEST/22081/chest.09-1584.pdf to access the CHADS2-VASc derivation paper.

The ESC 2010 Guidelines for the Management of Atrial Fibrillation and 2012 Update may provide additional insight into the application of the CHADS2-VASc in clinical practice.

Bleeding Risk Scores

DISCLAIMER: These tools (ATRIA and HAS-BLED) are presented for informational purposes only and not as an endorsement of their use in clinical decision making. Many of the same risk factors for warfarin-related hemorrhage are also risk factors for AF-associated ischemic stroke. The use of these tools as an exclusion for anticoagulation is not part of AHA/ACC guideline-recommended care for patients with AF. Additionally, some of the component elements in the HAS-BLED score, such as Labile INR and Prior Major Bleeding or Pre-Disposition to Bleeding may be difficult to reliably ascertain from the information available in the health record. The HAS-BLED score should be interpreted with this in mind.

ATRIA
This risk score derived from the ATRIA (Anticoagulation and Risk Factors in Atrial Fibrillation) study was designed to predict warfarin-associated hemorrhage. The ATRIA risk score is composed of five independent risk factors that have been assigned a point value based on the significance of their relationship to hemorrhage: anemia (3 points), severe renal disease (glomerular filtration rate <30 ml/min or dialysis-dependent, 3 points), age ≥75 years (2 points), prior bleeding (1 point), and hypertension (1 point). The patient’s calculated risk score is divided into three categories: low risk (0-3 points), intermediate risk (4 points), and high risk (5 to 10 points). The ATRIA bleeding risk score can be useful in patient counseling and clinical decision making for patients who have a low or intermediate stroke risk. Those patients with a high stroke risk clearly benefit from anticoagulation therapy, so the ATRIA may have limited value as a supplemental tool in this population. It is important to note that CHADS2 and CHADS2-VASc stroke risk scores contain some of the same risk factors as ATRIA. The results of the ATRIA score should be interpreted with this in mind.


To learn more, visit http://content.onlinejacc.org/article.aspx?articleid=1146658#Abstract to access the ATRIA derivation paper.

HAS-BLED

HAS-BLED is a risk score designed to predict the one year risk for major bleeding in AF patients and may be used to aid in clinical decision making regarding anticoagulation therapy. HAS-BLED is an acronym for the bleeding risk factors that are assessed: Hypertension (uncontrolled, > 160 mm Hg systolic), Abnormal renal/liver function, Stroke, Bleeding history or predisposition, Labile INR, Elderly (age >65 years), and Drugs/alcohol concomitantly (antiplatelet agents, non-steroidal anti-inflammatory drugs). A high HAS-BLED score is associated with a high risk of hemorrhage. When used in conjunction with a stroke risk score, HAS-BLED may be able to help one weigh the stroke risk and bleeding risk to determine the best course of action for anticoagulation therapy. It is important to note however, that CHADS2 and CHADS2-VASc stroke risk scores contain some of the same risk factors as HAS-BLED. The results of the HAS-BLED score should be interpreted with this in mind.


To learn more, visit http://journal.publications.chestnet.org/article.aspx?articleid=1045174 to access the HAS-BLED derivation paper.

APPENDIX Tables

<table>
<thead>
<tr>
<th>Table 1: ACEI Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accupril</td>
</tr>
<tr>
<td>Accuretic</td>
</tr>
<tr>
<td>Aceon</td>
</tr>
<tr>
<td>Altace</td>
</tr>
<tr>
<td>Benazepril, Benazepril Hydrochloride</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Aldosterone Antagonist Medications</th>
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</thead>
<tbody>
<tr>
<td>Aldactazide</td>
</tr>
<tr>
<td>Aldactone</td>
</tr>
<tr>
<td>Eplerenone</td>
</tr>
<tr>
<td>Inspra</td>
</tr>
</tbody>
</table>

Table 2: Aldosterone Antagonist Medications

<table>
<thead>
<tr>
<th>Aldosterone Antagonist Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldactazide</td>
</tr>
<tr>
<td>Aldactone</td>
</tr>
<tr>
<td>Eplerenone</td>
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<tr>
<td>Inspra</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Aliskiren/Bepridil</th>
</tr>
</thead>
</table>

Table 3: Alpha Blocker Medications

<table>
<thead>
<tr>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfuzosin</td>
</tr>
<tr>
<td>Cardura</td>
</tr>
<tr>
<td>Doxazosin</td>
</tr>
<tr>
<td>Dibenzyline</td>
</tr>
<tr>
<td>Flomax</td>
</tr>
<tr>
<td>Minipress</td>
</tr>
<tr>
<td>Oraverse</td>
</tr>
<tr>
<td>Phenoxybenzamine</td>
</tr>
<tr>
<td>Phentolamine</td>
</tr>
<tr>
<td>Prazosin</td>
</tr>
<tr>
<td>Rapaflo</td>
</tr>
<tr>
<td>Regitine</td>
</tr>
<tr>
<td>Silodosin</td>
</tr>
<tr>
<td>Tamsulosin</td>
</tr>
<tr>
<td>Terazosin</td>
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<tr>
<td>Uroxatral</td>
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Table 4: ARB Medications

<table>
<thead>
<tr>
<th>Medication</th>
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<tbody>
<tr>
<td>Atacand</td>
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<tr>
<td>Atacand HCT</td>
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<tr>
<td>Avalide</td>
</tr>
<tr>
<td>Avapro</td>
</tr>
<tr>
<td>Azilsartan/chlorthalidone</td>
</tr>
<tr>
<td>Azilsartan</td>
</tr>
<tr>
<td>Azor</td>
</tr>
<tr>
<td>Benicar</td>
</tr>
<tr>
<td>Benicar HCT</td>
</tr>
<tr>
<td>Candesartan</td>
</tr>
<tr>
<td>Candesartan/hydrochlorothiazide</td>
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<tr>
<td>Cozzar</td>
</tr>
<tr>
<td>Diovan</td>
</tr>
<tr>
<td>Diovan HCT</td>
</tr>
<tr>
<td>Edarbi</td>
</tr>
<tr>
<td>Edarbyclor</td>
</tr>
<tr>
<td>Eprosartan</td>
</tr>
<tr>
<td>Eprosartan/hydrochlorothiazide</td>
</tr>
<tr>
<td>Table 5: Antiarrhythmic Medications (Class I, III, unclassified)</td>
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<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Adenosine</td>
</tr>
<tr>
<td>Amiodarone</td>
</tr>
<tr>
<td>Azimilide</td>
</tr>
<tr>
<td>Betapace, Betapace AF</td>
</tr>
<tr>
<td>Cardioquin</td>
</tr>
<tr>
<td>Cardiquin</td>
</tr>
<tr>
<td>Cordorone</td>
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<tr>
<td>Corvert</td>
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<tr>
<td>Disopyramide</td>
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<tr>
<td>--------------</td>
</tr>
<tr>
<td>Dofetilide</td>
</tr>
<tr>
<td>Dronedarone</td>
</tr>
<tr>
<td>Encaid</td>
</tr>
<tr>
<td>Encainide</td>
</tr>
<tr>
<td>Ethmozine</td>
</tr>
<tr>
<td>Flecaïnide</td>
</tr>
<tr>
<td>Ibutilide</td>
</tr>
<tr>
<td>Kinidin</td>
</tr>
<tr>
<td>Magnesium sulfate</td>
</tr>
<tr>
<td>Mexilitine</td>
</tr>
<tr>
<td>Mexitil</td>
</tr>
<tr>
<td>Moricizine</td>
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<tr>
<td>Multaq</td>
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<tr>
<td>Norpace</td>
</tr>
<tr>
<td>Pacerone</td>
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<td>Procainamide</td>
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<td>Procainamide</td>
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<td>Procanbid</td>
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<td>Promine</td>
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<tr>
<td>Pronestyl</td>
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<td>Propafenone</td>
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<tr>
<td>Quinidine</td>
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<tr>
<td>Quinidine</td>
</tr>
<tr>
<td>Quiniglute</td>
</tr>
<tr>
<td>Rythmol, Rythmol SR</td>
</tr>
<tr>
<td>Sotalol</td>
</tr>
<tr>
<td>Stedicor</td>
</tr>
<tr>
<td>Tambocor</td>
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<tr>
<td>Tikosyn</td>
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**Table 6: Anticoagulation Therapy**

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Generic Name Crosswalk</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>argatroban</td>
<td>argatroban</td>
<td>Direct Thrombin Inhibitor</td>
</tr>
<tr>
<td>dabigatran</td>
<td>dabigatran</td>
<td>Direct Thrombin Inhibitor</td>
</tr>
<tr>
<td>Pradaxa</td>
<td>dabigatran</td>
<td>Direct Thrombin Inhibitor</td>
</tr>
<tr>
<td>medication</td>
<td>brand</td>
<td>drug class</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>dalteparin</td>
<td>dalteparin</td>
<td>LMWH</td>
</tr>
<tr>
<td>Fragmin</td>
<td>dalteparin</td>
<td>LMWH</td>
</tr>
<tr>
<td>desirudin</td>
<td>desirudin</td>
<td>Direct Thrombin Inhibitor</td>
</tr>
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<td>Iprivask</td>
<td>desirudin</td>
<td>Direct Thrombin Inhibitor</td>
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<tr>
<td>enoxaparin</td>
<td>enoxaparin</td>
<td>LMWH</td>
</tr>
<tr>
<td>Lovenox</td>
<td>enoxaparin</td>
<td>LMWH</td>
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<tr>
<td>Fondaparinux</td>
<td>Fondaparinux</td>
<td>Factor Xa Inhibitor</td>
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<tr>
<td>Arixtra</td>
<td>Fondaparinux</td>
<td>Factor Xa Inhibitor</td>
</tr>
<tr>
<td>Heparin (subcutaneous)</td>
<td>Heparin (subcutaneous)</td>
<td>Heparin</td>
</tr>
<tr>
<td>lepirudin</td>
<td>lepirudin</td>
<td>Direct Thrombin Inhibitor</td>
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<td>Refludan</td>
<td>lepirudin</td>
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<td>rivaroxaban</td>
<td>rivaroxaban</td>
<td>Factor Xa Inhibitor</td>
</tr>
<tr>
<td>Xarelto</td>
<td>rivaroxaban</td>
<td>Factor Xa Inhibitor</td>
</tr>
<tr>
<td>Warfarin, Warfarin Sodium</td>
<td>warfarin</td>
<td>warfarin</td>
</tr>
<tr>
<td>Coumadin</td>
<td>warfarin</td>
<td>warfarin</td>
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<tr>
<td>Jantoven</td>
<td>warfarin</td>
<td>warfarin</td>
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Table 7: Aspirin Containing Medications

<table>
<thead>
<tr>
<th>medication</th>
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</thead>
<tbody>
<tr>
<td>Acetylsalicylic Acid</td>
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<tr>
<td>Acuprin 81</td>
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<tr>
<td>Alka-Seltzer</td>
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<tr>
<td>Alka-Seltzer Morning Relief</td>
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<tr>
<td>Anacin</td>
</tr>
<tr>
<td>Arthritis Foundation Aspirin</td>
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<tr>
<td>Arthritis Pain Ascriptin</td>
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<tr>
<td>Arthritis Pain Formula</td>
</tr>
<tr>
<td>ASA</td>
</tr>
<tr>
<td>ASA Baby</td>
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<tr>
<td>ASA Baby Chewable</td>
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<tr>
<td>ASA Baby Coated</td>
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<tr>
<td>ASA Bayer</td>
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<tr>
<td>ASA Bayer Children's</td>
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<tr>
<td>ASA Buffered</td>
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<td>ASA Children's</td>
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<tr>
<td>ASA EC</td>
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<td>ASA Enteric Coated</td>
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<td>ASA/Maalox</td>
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<td>Ascriptin</td>
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<td>Aspergum</td>
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<td>Aspir-10</td>
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<td>Aspir-Low</td>
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<tr>
<td>Aspir-Lox</td>
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<td>Aspirin Bx</td>
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<tr>
<td>------------</td>
</tr>
<tr>
<td>Product Name</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Bufferin Arthritis Strength</td>
</tr>
<tr>
<td>Bufferin Extra Strength</td>
</tr>
<tr>
<td>Buffex</td>
</tr>
<tr>
<td>Cama Arthritis Reliever</td>
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<tr>
<td>Child's Aspirin</td>
</tr>
<tr>
<td>Coated Aspirin</td>
</tr>
<tr>
<td>Cosprin</td>
</tr>
<tr>
<td>CTD Aspirin</td>
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<tr>
<td>Dasprin</td>
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<tr>
<td>Doans Pills</td>
</tr>
<tr>
<td>Easprin</td>
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<tr>
<td>EC ASA</td>
</tr>
<tr>
<td>Ecotrin</td>
</tr>
<tr>
<td>Ecotrin Low Strength Adult</td>
</tr>
<tr>
<td>Effervescent Pain &amp; Antacid</td>
</tr>
<tr>
<td>Empirin</td>
</tr>
<tr>
<td>Enicaprin</td>
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<tr>
<td>Endodan</td>
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<td>Entab</td>
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<td>Entaprin</td>
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<tr>
<td>Enteric</td>
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<tr>
<td>Enteric Coated Aspirin</td>
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<td>Enteric Coated Baby Aspirin</td>
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<td>Equagesic</td>
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<td>Excedrin</td>
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<tr>
<td>Excedrin Extra Strength</td>
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<td>Excedrin Geltab</td>
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<td>Excedrin Migraine</td>
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<tr>
<td>Extra Strength Bayer</td>
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<td>Fiorinal</td>
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<tr>
<td>Genacote</td>
</tr>
<tr>
<td>Genprin</td>
</tr>
<tr>
<td>Goody’s Body Pain Formula Powder</td>
</tr>
<tr>
<td>Goody’s Extra Strength Headache Powder</td>
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<tr>
<td>Goody’s Extra Strength Pain Relief Tablets</td>
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<tr>
<td>Halfprin</td>
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<tr>
<td>Invagesic</td>
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<tr>
<td>Invagesic Forte</td>
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<td>Low Dose ASA</td>
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<tr>
<td>Magnaprin</td>
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<tr>
<td>Med Aspirin</td>
</tr>
<tr>
<td>Norgesic</td>
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<td>Norgesic Forte</td>
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<td>Medication</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Norwich Aspirin</td>
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<tr>
<td>Pain Relief (Effervescent)</td>
</tr>
<tr>
<td>Pain Relief with Aspirin</td>
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<tr>
<td>Percodan</td>
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<tr>
<td>Percodan-Demi</td>
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<td>Robaxisal</td>
</tr>
<tr>
<td>Sloprin</td>
</tr>
<tr>
<td>Soma Compound</td>
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<tr>
<td>Soma Compound W/ Codeine</td>
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<tr>
<td>St. Joseph Aspirin</td>
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<tr>
<td>Stanback Analgesic</td>
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<tr>
<td>Synalgos-DC</td>
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<tr>
<td>Therapy Bayer</td>
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<td>Tri Buffered Aspirin</td>
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<tr>
<td>Uni-As</td>
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<tr>
<td>Uni-Buff</td>
</tr>
<tr>
<td>Uni-Tren</td>
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<td>Vanquish</td>
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<td>Zorprin</td>
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**Table 8: Beta Blocker Medications**

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<tr>
<td>Acebutolol</td>
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<tr>
<td>Atenolol</td>
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<tr>
<td>Betapace, Betapace AF</td>
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<tr>
<td>Betaxolol</td>
</tr>
<tr>
<td>Bisoprolol, Bisoprolol Fumarate</td>
</tr>
<tr>
<td>Bisoprolol/hydrochlorothiazide</td>
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<tr>
<td>Brevibloc</td>
</tr>
<tr>
<td>Bystolic</td>
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<tr>
<td>Carvedilol</td>
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<tr>
<td>Coreg</td>
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<tr>
<td>Corgard</td>
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<tr>
<td>Corzide 40/5, 80/5</td>
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<tr>
<td>Esmolol</td>
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<tr>
<td>Inderal, Inderal LA Long-Acting</td>
</tr>
<tr>
<td>Inderide</td>
</tr>
<tr>
<td>InnoPran XL</td>
</tr>
<tr>
<td>Labetalol</td>
</tr>
<tr>
<td>Levatol</td>
</tr>
<tr>
<td>Lopressor</td>
</tr>
<tr>
<td>Lopressor HCT, Lopressor Hydrochlorothiazide</td>
</tr>
<tr>
<td>Metoprolol succinate CR/XL</td>
</tr>
</tbody>
</table>

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| Metoprolol Tartrate                      |
| Metoprolol tartrate and hydrochlorothiazide, |
| Metoprolol/hydrochlorothiazide |
| Nadolol                                |
| Nadolol/bendroflumethiazide           |
| Nebivolol, Nebivolol Hydrochloride, Nebivolol HCl |
| Penbutolol                             |
| Pindolol                               |
| Propranolol, propranolol hydrochloride, propranolol HCl |
| Propranolol/hydrochlorothiazide       |
| Sectral                                |
| Sorine                                 |
| Sotalol, sotalol hydrochloride, Sotalol HCL |
| Tenoretic                              |
| Tenormin                               |
| Tenormin IV                            |
| Timolol                                |
| Toprol-XL                              |
| Trandate, Trandate HCL                 |
| Visken                                 |
| Zebeta                                 |
| Ziac                                   |

**Table 9: Calcium Channel Blocker Medications**

<table>
<thead>
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<tr>
<td>Adalat CC (extended release)</td>
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<td>Afeditab CR</td>
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</tr>
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<td>Dihydropyridine</td>
</tr>
<tr>
<td>Amlodipine/aliskiren hemifumarate</td>
<td>Dihydropyridine</td>
</tr>
<tr>
<td>Amlodipine/aliskiren hemifumarate/ hydrochlorothiazide</td>
<td>Dihydropyridine</td>
</tr>
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<td>Amlodipine/atorvastatin</td>
<td>Dihydropyridine</td>
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<tr>
<td>Amlodipine/Benazepril</td>
<td>Dihydropyridine</td>
</tr>
<tr>
<td>Amlodipine/olmesartan, amlodipine /olmesartan medoxomil</td>
<td>Dihydropyridine</td>
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<tr>
<td>Amlodipine/olmesartan/hydrochlorothiazide</td>
<td>Dihydropyridine</td>
</tr>
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<td>Amlodipine/Telmisartan</td>
<td>Dihydropyridine</td>
</tr>
<tr>
<td>Amlodipine/Valsartan</td>
<td>Dihydropyridine</td>
</tr>
<tr>
<td>Amlodipine/Valsartan/hydrochlorothiazide</td>
<td>Dihydropyridine</td>
</tr>
<tr>
<td>Amturnide</td>
<td>Dihydropyridine</td>
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<tr>
<td>Azor</td>
<td>Dihydropyridine</td>
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<tr>
<td>Benazepril/amlodipine</td>
<td>Dihydropyridine</td>
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<td>Caduet</td>
<td>Dihydropyridine</td>
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<tr>
<td>Calan, Calan SR</td>
<td>Non-dihydropyridine</td>
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<td>Drug Name</td>
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<tr>
<td>Cardene, Cardene SR</td>
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<tr>
<td>Cardizem, Cardizem CD, Cardizem LA</td>
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<td>Cartia XT</td>
<td>Non-dihydropyridine</td>
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<td>Clevidipine</td>
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<td>Covera-HS</td>
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<td>Diltzac</td>
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**Table 10: Diuretic Medications**

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<td>Amiloride, Amiloride HCl</td>
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<tr>
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<td>Benicar HCT</td>
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<td>Bumex</td>
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<td>Capozide</td>
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<td>Captopril/hydrochlorothiazide</td>
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<tr>
<td>Clonidine hydrochloride/Chlorthalidone</td>
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<td>Combipress</td>
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<td>Diovan HCT</td>
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<td>Diurese</td>
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<td>Dyrenium</td>
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<td>Exna</td>
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<td>Furosemide</td>
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<td>Drug Name</td>
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<td>Lasix</td>
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<td>Losartan and hydrochlorothiazide</td>
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<td>Naturetin</td>
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<td>Olmesartan/hydrochlorothiazide, olmesartan medoxomil/hydrochlorothiazide</td>
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<td>Osmotrol</td>
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<td>Polythiazide</td>
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<td>Prinzide</td>
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<tr>
<td>Thalitone</td>
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<td>Valsartan/hydrochlorothiazide</td>
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**Table 11: Hydralazine and Nitrate Medications**

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<th>Nitrate Containing Medications</th>
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<td>ISMO</td>
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<td>Dralserp</td>
<td>Iso-Bid</td>
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<td>Diuretic Ap-Es</td>
<td>IsoDitrate</td>
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<td>Hydralazine</td>
<td>Isonate</td>
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<td>Hydralazine/Hydrochlorothiazide</td>
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<td>Hydralazine/Isosorbide Dinitrate</td>
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<td>Hydralazine/Reserpine</td>
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<td>Table 12: NSAIDS/COX-2 Inhibitor</td>
<td>Generic Cross Walk</td>
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<tr>
<td>Actron</td>
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<td>Oxaprozin</td>
<td>Oxaprozin</td>
</tr>
<tr>
<td>Piroxicam</td>
<td>Piroxicam</td>
</tr>
<tr>
<td>Ponstel</td>
<td>Mefenamic Acid</td>
</tr>
<tr>
<td>Profen</td>
<td>Ibuprofen</td>
</tr>
<tr>
<td>Profen</td>
<td>Ibuprofen</td>
</tr>
<tr>
<td>Relafen</td>
<td>Nabumetone</td>
</tr>
<tr>
<td>Sulindac</td>
<td>Sulindac</td>
</tr>
<tr>
<td>Tab-Profen</td>
<td>Ibuprofen</td>
</tr>
<tr>
<td>Tolectin, Tolectin DS, Tolectin 600</td>
<td>Tolmetin</td>
</tr>
<tr>
<td>Tolmetin</td>
<td>Tolmetin</td>
</tr>
<tr>
<td>Toradol</td>
<td>Ketorolac</td>
</tr>
<tr>
<td>Vicoprofen</td>
<td>Ibuprofen</td>
</tr>
<tr>
<td>Voltaren</td>
<td>Diclofenac</td>
</tr>
</tbody>
</table>

Table 13: Statin Medications

<table>
<thead>
<tr>
<th>Drug Name</th>
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</thead>
<tbody>
<tr>
<td>Caduet</td>
</tr>
<tr>
<td>Crestor</td>
</tr>
<tr>
<td>Fluvastatin</td>
</tr>
<tr>
<td>Lescol, Lescol XL</td>
</tr>
<tr>
<td>Lipitor</td>
</tr>
<tr>
<td>Livalo</td>
</tr>
<tr>
<td>Lovastatin</td>
</tr>
<tr>
<td>Lovastatin + extended release niacin</td>
</tr>
<tr>
<td>Pitavastatin</td>
</tr>
<tr>
<td>Pravachol</td>
</tr>
<tr>
<td>Pravastatin</td>
</tr>
<tr>
<td>Rosuvastatin</td>
</tr>
<tr>
<td>Simcor</td>
</tr>
<tr>
<td>Simvastatin</td>
</tr>
<tr>
<td>Simvastatin + extended release niacin</td>
</tr>
<tr>
<td>Simvastatin + ezetimibe</td>
</tr>
<tr>
<td>Vytorin</td>
</tr>
<tr>
<td>Zocor</td>
</tr>
</tbody>
</table>

Table 14: CPT Codes

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99201</td>
<td>Office or other outpatient visit for the evaluation and management of a new patient, which requires these</td>
</tr>
</tbody>
</table>
### 3 key components: A problem focused history; A problem focused examination; Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are self limited or minor. Physicians typically spend 10 minutes face-to-face with the patient and/or family.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99202</td>
<td>Office or other outpatient visit for the evaluation and management of a new patient, which requires these 3 key components: An expanded problem focused history; An expanded problem focused examination; Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low to moderate severity. Physicians typically spend 20 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99203</td>
<td>Office or other outpatient visit for the evaluation and management of a new patient, which requires these 3 key components: A detailed history; A detailed examination; Medical decision making of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate severity. Physicians typically spend 30 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99204</td>
<td>Office or other outpatient visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 45 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99205</td>
<td>Office or other outpatient visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 60 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99212</td>
<td>Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A problem focused history; A problem focused examination; Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are self limited or minor. Physicians typically spend 10 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99213</td>
<td>Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: An expanded problem focused history; An expanded problem focused examination; Medical decision making of low complexity. Counseling and coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low to moderate severity. Physicians typically spend 15 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99214</td>
<td>Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A detailed history; A detailed examination; Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 25 minutes face-to-face with the patient and/or family.</td>
</tr>
</tbody>
</table>
| 99215 | Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A comprehensive history; A comprehensive examination;
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99241</td>
<td>Office consultation for a new or established patient, which requires these 3 key components: A problem focused history; A problem focused examination; and Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 40 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99242</td>
<td>Office consultation for a new or established patient, which requires these 3 key components: An expanded problem focused history; An expanded problem focused examination; and Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low severity. Physicians typically spend 15 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99243</td>
<td>Office consultation for a new or established patient, which requires these 3 key components: A detailed history; A detailed examination; and Medical decision making of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate severity. Physicians typically spend 30 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99244</td>
<td>Office consultation for a new or established patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 60 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99245</td>
<td>Office consultation for a new or established patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 45 minutes at the bedside.</td>
</tr>
<tr>
<td>99304</td>
<td>Initial nursing facility care, per day, for the evaluation and management of a patient, which requires these 3 key components: A detailed or comprehensive history; A detailed or comprehensive examination; and Medical decision making that is straightforward or of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the problem(s) requiring admission are of low severity. Physicians typically spend 25 minutes at the bedside and on the patient's facility floor or unit.</td>
</tr>
<tr>
<td>99305</td>
<td>Initial nursing facility care, per day, for the evaluation and management of a patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the problem(s) requiring admission are of moderate severity. Physicians typically spend 35 minutes at the bedside and on the patient's facility floor or unit.</td>
</tr>
<tr>
<td>99306</td>
<td>Initial nursing facility care, per day, for the evaluation and management of a patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the problem(s) requiring admission are of high severity. Physicians typically spend 45 minutes at the bedside.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
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<tr>
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<tr>
<td>99307</td>
<td>Subsequent nursing facility care, per day, for the evaluation and management of a patient, which requires at least 2 of these 3 key components: A problem focused interval history; A problem focused examination; Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the patient is stable, recovering, or improving. Physicians typically spend 10 minutes at the bedside and on the patient's facility floor or unit.</td>
</tr>
<tr>
<td>99308</td>
<td>Subsequent nursing facility care, per day, for the evaluation and management of a patient, which requires at least 2 of these 3 key components: An expanded problem focused interval history; An expanded problem focused examination; Medical decision making of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the patient is responding inadequately to therapy or has developed a minor complication. Physicians typically spend 15 minutes at the bedside and on the patient's facility floor or unit.</td>
</tr>
<tr>
<td>99309</td>
<td>Subsequent nursing facility care, per day, for the evaluation and management of a patient, which requires at least 2 of these 3 key components: A detailed interval history; A detailed examination; Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the patient has developed a significant complication or a significant new problem. Physicians typically spend 25 minutes at the bedside and on the patient's facility floor or unit.</td>
</tr>
<tr>
<td>99310</td>
<td>Subsequent nursing facility care, per day, for the evaluation and management of a patient, which requires at least 2 of these 3 key components: A comprehensive interval history; A comprehensive examination; Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. The patient may be unstable or may have developed a significant new problem requiring immediate physician attention. Physicians typically spend 35 minutes at the bedside and on the patient's facility floor or unit.</td>
</tr>
<tr>
<td>99324</td>
<td>Domiciliary or rest home visit for the evaluation and management of a new patient, which requires these 3 key components: A problem focused history; A problem focused examination; and Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low severity. Physicians typically spend 20 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99325</td>
<td>Domiciliary or rest home visit for the evaluation and management of a new patient, which requires these 3 key components: An expanded problem focused history; An expanded problem focused examination; and Medical decision making of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate severity. Physicians typically spend 30 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99326</td>
<td>Domiciliary or rest home visit for the evaluation and management of a new patient, which requires these 3 key components: A detailed history; A detailed examination; and Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 45 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99327</td>
<td>Domiciliary or rest home visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 45 minutes with the patient and/or family or caregiver.</td>
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<tr>
<td>99328</td>
<td>Domiciliary or rest home visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the patient is unstable or has developed a significant new problem requiring immediate physician attention. Physicians typically spend 75 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99334</td>
<td>Domiciliary or rest home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A problem focused interval history; A problem focused examination; Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are self-limited or minor. Physicians typically spend 15 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99335</td>
<td>Domiciliary or rest home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: An expanded problem focused interval history; An expanded problem focused examination; Medical decision making of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low to moderate severity. Physicians typically spend 25 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99336</td>
<td>Domiciliary or rest home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A detailed interval history; A detailed examination; Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 40 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99337</td>
<td>Domiciliary or rest home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A comprehensive interval history; A comprehensive examination; Medical decision making of moderate to high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the patient may be unstable or may have developed a significant new problem requiring immediate physician attention. Physicians typically spend 60 minutes with the patient and/or family or caregiver.</td>
</tr>
<tr>
<td>99341</td>
<td>Home visit for the evaluation and management of a new patient, which requires these 3 key components: A problem focused history; A problem focused examination; and Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low severity. Physicians typically spend 20 minutes face-to-face with the patient and/or family.</td>
</tr>
<tr>
<td>99342</td>
<td>Home visit for the evaluation and management of a new patient, which requires these 3 key components: An expanded problem focused history; An expanded problem focused examination; and Medical decision making of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate severity. Physicians typically spend 30 minutes face-to-face with the patient and/or family.</td>
</tr>
</tbody>
</table>
| 99343 | Home visit for the evaluation and management of a new patient, which requires these 3 key components: A detailed history; A detailed examination; and Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of
| 99332 | Home visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of high severity. Physicians typically spend 60 minutes face-to-face with the patient and/or family. |
| 99344 | Home visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of high severity. Physicians typically spend 60 minutes face-to-face with the patient and/or family. |
| 99345 | Home visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; A comprehensive examination; and Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the patient is unstable or has developed a significant new problem requiring immediate physician attention. Physicians typically spend 75 minutes face-to-face with the patient and/or family. |
| 99347 | Home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A problem focused interval history; A problem focused examination; Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are self limited or minor. Physicians typically spend 15 minutes face-to-face with the patient and/or family. |
| 99348 | Home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: An expanded problem focused interval history; An expanded problem focused examination; Medical decision making of low complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low to moderate severity. Physicians typically spend 25 minutes face-to-face with the patient and/or family. |
| 99349 | Home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A detailed interval history; A detailed examination; Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are moderate to high severity. Physicians typically spend 40 minutes face-to-face with the patient and/or family. |
| 99328 | Home visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A comprehensive interval history; A comprehensive examination; Medical decision making of moderate to high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. The patient may be unstable or may have developed a significant new problem requiring immediate physician attention. Physicians typically spend 60 minutes face-to-face with the patient and/or family. |
Appendix 3
Achievement, Quality And Reporting Measures For GWTG-AFIB
### Achievement

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACEI/ARB at Discharge for LVSD</td>
<td>Percent of patients with Left Ventricular Systolic Dysfunction (LVSD) and without both angiotensin converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB) contraindications who are prescribed an ACEI or ARB at hospital discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular function (LVF) consistent with moderate or severe systolic dysfunction.</td>
</tr>
<tr>
<td>Assessment of Thromboembolic Risk Factors</td>
<td>Percent of patients with nonvalvular Atrial Fibrillation or Atrial Flutter in whom assessment of thromboembolic risk factors using the CHADS2 risk criteria has been documented.</td>
</tr>
<tr>
<td>Beta Blocker at Discharge</td>
<td>Percent of patients with left ventricular systolic dysfunction (LVSD) prescribed a beta blocker at hospital discharge.</td>
</tr>
<tr>
<td>Discharged on FDA Approved Anticoagulation Therapy</td>
<td>Percent of patients discharged on warfarin or other anticoagulant drug that is FDA approved for the prevention of thromboembolism for all patients with nonvalvular atrial fibrillation or atrial flutter at high risk for thromboembolism, according to CHADS2 risk stratification.</td>
</tr>
<tr>
<td>PT/INR Planned Follow-up (for patients discharged on Warfarin)</td>
<td>Percent of patients discharged on Warfarin who have PT/INR follow-up planned prior to hospital discharge, including documentation of a date of INR test planned post discharge and type of INR monitoring planned (Home Monitoring, Anticoagulation Clinic, or Physician).</td>
</tr>
<tr>
<td>Statin at Discharge in AF Patients with CAD, CVA/TIA, or PVD</td>
<td>Percent of patients with either CAD, CVA/TIA, PVD or diabetes who were prescribed a statin at hospital discharge.</td>
</tr>
</tbody>
</table>

### Quality

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Aldosterone Antagonist at Discharge</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients with left ventricular systolic dysfunction (LVSD) with no contraindications or documented intolerance who were prescribed Aldosterone Antagonist at discharge.</td>
</tr>
<tr>
<td>Anticoagulation Therapy Education</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients or their caregivers who were given education and/or educational materials during the hospital stay addressing anticoagulation therapy.</td>
</tr>
<tr>
<td>Atrial Fibrillation Patient Education</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients or their caregivers who were given education and/or educational materials during the hospital stay addressing ALL of the following: Risk factors, Stroke Risk, Management, Medication Adherence, Follow-up, When to call provider.</td>
</tr>
<tr>
<td>CHADS2 Reported</td>
<td>Percent of patients with Atrial Fibrillation or Atrial Flutter who had a CHADS2 score reported during the hospitalization.</td>
</tr>
</tbody>
</table>
| Discharge Heart Rate <110 bpm                | Percent Atrial Fibrillation or Atrial Flutter patients who have a
documented resting heart rate of <110 bpm closest to hospital discharge.

Smoking Cessation

Percent of patients with a history of smoking cigarettes, who are given smoking cessation advice or counseling during hospital stay. For purposes of this measure, a smoker is defined as someone who has smoked cigarettes anytime during the year prior to hospital arrival.

Warfarin at Discharge for Valvular Atrial Fibrillation or Atrial Flutter Patients

Percent of eligible valvular Atrial Fibrillation or Atrial Flutter patients discharged on warfarin.

### Reporting

<table>
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<tr>
<th>Measure</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Antiarrhythmic at Discharge</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients who were prescribed an antiarrhythmic at hospital discharge. For the purposes of this reporting measure, antiarrhythmic includes: Amiodarone, Dofetilide, Dronedarone, Flecaïnide, Propafenone, Sotalol, Other.</td>
</tr>
<tr>
<td>Anticoagulation During Hospitalization</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients who received anticoagulation therapy during their hospitalization.</td>
</tr>
<tr>
<td>Antiplatelet Agent at Discharge (including Aspirin)</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients who are prescribed antiplatelet therapy (including aspirin) at hospital discharge.</td>
</tr>
<tr>
<td>Antiplatelet (including aspirin) and Anticoagulant at Discharge</td>
<td>Percent of nonvalvular Atrial Fibrillation or Atrial Flutter patients discharged on BOTH an Antiplatelet (including Aspirin) and an Anticoagulant at hospital discharge.</td>
</tr>
<tr>
<td>Aspirin at Discharge</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients who were prescribed Aspirin at hospital discharge.</td>
</tr>
<tr>
<td>Beta blocker at discharge (all patients)</td>
<td>Percent of patients, regardless of eligibility, prescribed a Beta Blocker at hospital discharge.</td>
</tr>
<tr>
<td>Calcium Channel Blocker at Discharge</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients prescribed a Calcium Channel Blocker at hospital discharge.</td>
</tr>
<tr>
<td>Digoxin at Discharge</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients prescribed Digoxin at hospital discharge.</td>
</tr>
<tr>
<td>QT Interval Measured after Initiation or Increase and Sustained Treatment with Dofetilide or Sotalol</td>
<td>Percent of patients that had Dofetilide or Sotalol newly initiated or dose increased during hospitalization, sustained for 5 or more doses and were prescribed Dofetilide or Sotalol at discharge that had QT Interval measured prior to discharge and after initiation.</td>
</tr>
<tr>
<td>Rhythm Control/Rate Control Strategy Planned/Intended</td>
<td>Percent of patients for who a Rhythm Control/Rate control strategy plan was documented prior to hospital discharge.</td>
</tr>
<tr>
<td>Screening for Obstructive Sleep Apnea</td>
<td>Percent of Atrial Fibrillation or Atrial Flutter patients who were screened for obstructive sleep apnea.</td>
</tr>
</tbody>
</table>
Appendix 4
GWTG-AFIB Planned Analyses
Planned secondary analyses for GWTG-AFIB

1. Adherence to anticoagulation and rate control guidelines including analysis of contraindications.
2. Race/ethnic differences in quality of care and in hospital outcomes
3. In-hospital outcomes including stroke and death
4. Outcomes linked to Medicare fee-for-service patients including mortality, readmission and resource utilization.
5. Variations in quality of atrial fibrillation care by US hospitals
6. Sex-based differences in quality of care and outcomes in atrial fibrillation
7. Regional variation in the use of evidence-based therapies in patients with atrial fibrillation
8. Risk/treatment mismatch in the use of anticoagulation therapy in patients with atrial fibrillation
9. Temporal trends in quality of care and outcome for patients hospitalized with atrial fibrillation
10. Patient and hospital characteristics associated with the use of newer anticoagulant agents in patients hospitalized with atrial fibrillation