Instructions for completing SHS CHF form

The CHF Procedure Form is for both non-fatal and fatal CHF events. We will collect the same information, when it's available, to characterize the features associated with heart failure events, whether they are non-fatal or fatal. Obviously some heart failure deaths will be so diagnosed based on fulminant pulmonary edema without further medical evaluation, but in other cases death may occur because of progressive cardiac pump failure in hospital, where there may be extensive characterization of the status of heart muscle and valve function, etc.

Because episodes of severe heart failure from which individuals die and those from which they are rescued by contemporary treatment do not represent fundamentally different biological entities, but rather differ in the severity of underlying derangements and in the efficacy and promptness of therapeutic interventions, it is soundest both to include fatal and non-fatal heart failure events as a single end-point (unless one is focusing solely on mortality) and to gather the same information to classify the subtypes of heart failure (systolic vs. diastolic ventricular dysfunction, roles of coronary artery or valvular disease, etc.) for both fatal and non-fatal CHF events.

A. ATRIAL FIBRILLATION AT TIME OF CHF?
   This question is answered in the affirmative if there is clear evidence of atrial fibrillation on the ECG. There will be a presumption that atrial fibrillation may have contributed to precipitating heart failure. If that is the case the arrhythmia should be persistent enough to be recorded on the ECG.

B. IMAGING STUDY
   Please check ALL that were done. If more than one imaging study was done in the same admission, please fill in a copy of this form for EACH IMAGING STUDY to record the results of that study.

   If a test was not done or no information is available, skip to Section C, otherwise, fill in the following.

   B1 & B2. Record the name and date of the test.
   B3. Record the place where the test was done.

   Use the test study and date soonest after the admission (when CHF was first diagnosed). If there is a cursory initial study followed by a detailed study with no intervention or status change in between, use the more detailed study results.

   B4. Ejection Fraction: Record the results in the appropriate box. If a range is given, one should put in the average value, rounded to the nearest whole number. For example, an ejection fraction such as 20-25% would average 22.5% and round to 23%. If there is an indication of a measured value, it should be taken as “measured;” if it is said to be estimated or if the reports says “about 50%”, for example, the EF would be estimated. If a specific EF percent is given without further modification, code as measured. If the actual result was not given, use the following:
777 = normal, or range ≥ 50%
888 = abnormal, or range < 50%
999 = unknown

B5. Ejection Fraction Interpretation: Normal, Depressed, NR.

If no interpretation is noted on the reading, please check “NR” for no response. The categorical variable is included to allow entry of the qualitative conclusion reached in the primary report of the study being reviewed and not our conclusion about whether or not a given ejection fraction is normal.

Note to CC: This will make this variable of restricted utility, being useful for a two-step identification of reduced function based on objective measurement if available or on the qualitative interpretation in the primary report, but will create a variable that should not be used for other purposes.

B6. Segmental Wall Motion Abnormalities: Yes, No, NR.

If yes, degree of abnormality: Mild, Moderate, Severe, Unknown

The adjudicator can make this interpretation from alternative descriptions (e.g., regional or by specification of individual segments), if possible, from the information in the report. If there is not enough information in the record to make this determination, please check “NR” for no response.

B7. Transmitral time. Please record the following:

E Velocity in cm/sec
A Velocity in cm/sec
Peak E/A ratio
Decel. Time in msec
IVRT
Septal E’
Peak S’
Septal A’

These measurements may be found in the echo report typically under Doppler measurements. E’, A’ and peak S’ refer to tissue Doppler measurements.

B8. Valvular Disease: Yes, No, Unknown

If NO or Unknown, skip to B9 (Right ventricular systolic pressure). Check whether there is evidence of valvular disease on the echocardiogram report (if there is an echo report), and note the abnormality severity. If there is no mention of severity, check the most mild form of disease. For instances where a range is reported, such as “mild to moderate” or “1 to 2+”, check the less severe category. If there is
no mention of severity, the coder should mark "mild", but not "trace". Do not note "trace" as evidence of disease. If regurgitation is reported as trace-mild-moderate-severe the coder should equate 1+ to trace, 2+ to mild, 3+ to moderate and 4+ to severe.

a. Mitral Regurgitation: 1+, 2+, 3+, 4+, unknown
b. Mitral Stenosis: Mild, Moderate, Severe, Unknown
c. Aortic Regurgitation: 1+, 2+, 3+, 4+, unknown
d. Aortic Stenosis: Mild, Moderate, Severe, Unknown
e. Tricuspid Regurgitation: 1+, 2+, 3+, 4+, unknown

B9. Right Ventricular Systolic Pressure (pulmonary artery (PA) systolic pressure). If results were given, record the actual number in mmHg. Otherwise use the following:

777 = Normal
888 = Abnormal
999 = Unknown

C. B-TYPE NATRIURETIC PEPTIDE (BT-BNP) and N-TYPE NATRIURETIC PEPTIDE (NT-BNP).

If the results were not in the chart, record 999.

Record the highest BNP level, even if not on the same date as the admission. Upper limit of normal for the BNP and NT-BNP assays used from the lab report

D. CARDIOMYOPATHY DIAGNOSIS: Ischemic, Non-Ischemic, Hypertrophic, Valvular disease, Acute MI, NR, No cardiomyopathy.

The reviewer will make a decision as to the diagnosis of the cardiomyopathy – not the etiology of the heart failure exacerbation. This diagnosis will be based on available medical notes (discharge summary/cardiology notes, especially) and appropriate imaging tests (echo and catheterization mostly). Because diagnostic tests will not be reviewed, precise diagnostic criteria may not be possible.

SHS will use a practical definition that is used in many studies from large databases or large clinical trials without precise central review of the evidence, which is to diagnose dilated cardiomyopathy in patients with heart failure whose LV ejection fraction is depressed (below whatever limit the evaluating center used for "preserved EF") and then sub-classify as ischemic on the basis of documented extensive coronary artery disease and/or historic and/or ECG evidence of myocardial infarction (often more than one event). While this is imprecise, it will be no more so than use of ejection fractions from several different modalities (echo, cath or nuclear angiogram) derived by many
interpreting physicians using a variety of methods of measurement or estimated by the interpreting physician without making any specific measurements.

There may be cases that defy classification, for example in the case of EF reduction out of proportion to the extent of CAD. However because of the desirability of including all individuals in population-based analyses, generally a conclusion should be made. **We will use the following definition for ischemic cardiomyopathy:**

1. Patients with a history of MI or revascularization (CABG, PCI) or
2. Patients with > 75% stenosis of left main or proximal LAD or
3. Patients with > 75% stenosis of two or more epicardial vessels.

Code the diagnosis of hypertrophic cardiomyopathy only if there is specific echo data suggesting hypertrophic obstructive cardiomyopathy (HOCM) or marked septal hypertrophy without obstruction (in a published paper from SHS, only 1 of 8 participants with HCM by echo had obstruction (Maron BJ, Spirito P, Roman MJ, Paranicas M, Okin PM, Best LG, Lee ET, Devereux RB: Prevalence of hypertrophic cardiomyopathy in a population-based sample of American Indians aged 51 to 77 years (the Strong Heart Study). Am J Cardiol. 2004 Jun 15:93(12);1510-1514.)

Code the diagnosis of valvular disease in patients with severe valvular disease with evidence suggesting it is the cause of the cardiomyopathy, rather than coding as “non-ischemic”. If there are criteria to code as ischemic as listed above, code as ischemic. In these cases it will be presumed that severe MR is a consequence of the ischemia. In the infrequent case that it is debatable, it may be possible to review previous SHS echocardiograms to make this assessment. In this case, contact the CC for the echo data.

If there is not enough evidence in the medical record to make a diagnosis, check “NR”. If there is no evidence of cardiomyopathy, check the “No cardiomyopathy” response.

Fill in your SHS Reviewer Code and the date you review this case.