# INSTRUCTIONS FOR ABSTRACTING
## ARIC HOSPITAL RECORD ABSTRACTION FORM

## HRA COMPOSITE FORM QxQ

General Instructions

A.    The abstractor must be familiar with the ARIC Instructions for Completion of forms.

B.    Several types of responses are used:

Record text answers.

Record number, such as a date, time, medical record number, or measurement.

To answer most questions you will have several choices, the simplest of all being Yes = Y, No = N, or Unknown = U.  In that case, "Yes" or "No" will be marked only if there is no doubt due to information in the hospital record.  If nothing is written down that definitely answers the question, "U" should be recorded.  If the response categories are just Yes = Y or No = N, information not recorded is then marked as "No".  In general, the following may be considered synonyms:

| NO | YES |
|---|---|
| "Rule out" | "Likely" |
| "Suggestive" | "Apparent" |
| "Equivocal" | "Consistent with" |
| "Suspicious" | "Probable" |
| "Questionable" | "Definite" |
| "Possible" | "Compatible with" |
| "Uncertain" | "Highly suspicious" |
| "Reportedly" | "Presumably" |
| "Could be" | "Borderline" |
| "Perhaps" | "Representing" |
| "Low probability" | "Minimal" |
| "Might be" | "Thought to be" |
| "May represent" | "Mild" |
| "May be" | |
| "Versus" | |

C.    Complete only the appropriate questions.

D.    Be sure to follow correct skip patterns, i.e., follow form logic.

E.    To record dates, fill in 2 or 3 digit numbers for month/day/year.  Zero is automatically filled in the data entry system for the left box for any single digit numbers (e.g., 03 for March and 06/08/45 for June 8, 1945).  If part of the date is missing, record = for that part.  For example, if the only information regarding date is June 1945, record 06/==/45.

F.    For all times to be recorded on the HRA form, use 24-hour clock notation.  For example:
                12:00 pm = Noon = 12:00
                12:00 am - Midnight = 24:00

If an exact time cannot be recorded (i.e., is not given in the chart), the best estimate should be given.  If a time cannot be clearly estimated, the following guidelines for estimating times may be used in conjunction with the admission time.  Use these only as a last resort.  For no mention of the time of day, please see xii.

      i)   The middle of the night = 03:00
     ii)   Early morning = 08:00
    iii)   Morning = 09:00
     iv)   Late morning = 10:00
      v)   Midday = 12 Noon = 12:00
     vi)   Early afternoon = 14:00
    vii)   Afternoon or midafternoon = 15:00

  viii)  Late afternoon = 16:00
    ix)  Early evening = 19:00
     x)  Evening = 21:00
    xi)  Late evening = 22:00
   xii)  No mention of time of day = 12:00 Noon = 12:00
  xiii)  Earlier today = 12:00 Noon = 12:00
   xiv)  Today = 12:00 Noon
    xv)  Yesterday = 12:00 Noon
   xvi)  Symptom at bedtime = 22:00

G.     To record other time frames, use the following guidelines:

         Several days: $\geq$ 3 days
         Few days: $\geq$ 1 day and < 3 days
         Several hours: $\geq$ 4 hours and < 6 hours
         Few hours: $\geq$ 2 hours and < 4 hours
         "X days postoperative": the first postoperative day is the
           calendar day after the surgery

I.     For timing purposes, when a patient was out of the hospital but not discharged
       (eg., weekend pass), events will be considered in-hospital (an extension of the
       hospitalization).

J.     Whenever you have questions about the medical information recorded in the
       hospital record, consult with your surveillance director.

K.     **"Aborted" MI** is not an official medical term.  The following probably occurred,
       there was clinical and ECG evidence of evolving MI or reperfusion was attempted
       (thrombolysis, angioplasty) or serial ECGs suggested that infarction has not
       occurred (or was limited?).  The HRA implications:  history of "aborted MI"
       qualifies as history of MI (Q19f,Q32); "aborted MI" is equivalent to "acute MI"
       or "acute CHD" applies to the index event (Q20d, Q24b).  The abstractor should
       abstract as all other events.

Detailed Instructions for Various Questions

Items 0.a, 0.b and 0.c on this form are primarily for assisting the abstractor in
confirming the medical record being abstracted matches the CHI form. Once these fields
have been entered on the CELE (if a CELE is filled in before the CFDC), they can be
duplicated (using the "dup key" feature) in the corresponding fields on the CFD, CHI,
HRA, and/or HFA, if all 4 or 5 forms are entered in the same data session.

Once the planned hospitalization tracking management system is in place, these fields
will be pre-filled for all forms, to ensure conformity.  It will be the responsibility
of the abstractor to verify, visually, that these extra key fields match the chart
being abstracted. Until the tracking system is in place, the data will be entered
manually by the abstractor. Data entry into the remainder of the form will not be
allowed until these items match with the ID for this event.

Hospital, medical record number, and discharge date are stored encrypted because of
their confidential nature

0.a. Hospital Code Number.  Using the hospital selection drop down list, enter the two
digit code assigned to this hospital. If outside the study community, use the
appropriate code (96-99).  See appendix CC for a list of these hospitals.

0.b. Medical Record Number.  Enter the record number from the hospital chart.  This
number will be found stamped or typed on almost every page of the hospital record.  The
easiest place to find it is both on the medical record folder and in the upper
right/left hand corner of the face sheet. List the number from left to right.  Enter
only digits and letters; omit dashes and spaces.  Do not add zeroes to the right of the
number.  If the number changes with each admission, use the appropriate number for the
one (admission) being abstracted.

0.c.  Date of discharge.  Date of Discharge (for nonfatal case) or Death.  This
information will generally be found on the face sheet. Enter the date a as mm/dd/yyyy.
If the patient died, then record the date of death.  If transferred from acute care to
rehabilitation or chronic care in the same hospital, count the date of transfer as the
discharge date.

1.a.  Hospital Code Number (*Renumbered as HRAOa., see item 0.a.above*).

1.b.   Medical Record Number *(Renumbered as HRA0b, see item 0.b.on page 2)*.

1.c.    Primary Admission diagnosis.  *(Moved to CHI QxQ as item 1a)*
Fill in the ICD code for the first admission diagnosis listed on the admission/face sheet.  If the admitting diagnosis is not listed on the admission/face sheet, take the admitting diagnosis or impression from the ER discharge summary if available. Note that the admitting diagnosis is that made by the physician.  If both "rule out MI (R/O MI)" and chest pain are listed, record the former as the primary diagnosis.  However, if both heart failure and chest pain are listed, record heart failure as the primary diagnosis. Record the primary discharge diagnosis code at item 2.  If recorded in digits add decimal point on data base e.g., 486.

2. Discharge codes for selection *(Moved to CHI QxQ as item 2)*.
At the time this case is determined to be eligible, list the discharge and procedure codes from the hospital discharge index.  If the fourth digit (the fourth digit, to the right of the decimal, is absent, leave space blank.  Do not enter a zero there unless a zero actually appears in the index. If this case was not identified using a discharge list (e.g., cohort annual follow-up), enter = in the first set of boxes.  If an ICD9 code is in the listing twice, record it both times; if you run out of room, then eliminate one of the repeat codes.  For cases not identified through the discharge index and where codes are not available for CHI9, the hospital index may be used for entering discharge codes. Record the primary discharge diagnosis listed in item 1.b.

        Note:  If more than 26 diagnoses are listed the program run by the hospital selects the codes.  If more than 26, do not as a reviewer, make this selection

3a.   Cohort Status. *(Moved to CFD QxQ as item 5a)*.
Check the cohort roster to determine if the event is for a cohort member. If so, record case as C "ARIC Cohort" in 3a.

If the event is not an ARIC cohort member but it does meet selection criteria for community surveillance, record 'S' "Community Surveillance" for question 5.a. (NOTE: A cohort participant may or may not meet the criteria for community surveillance but if it is a cohort participant code "C" not "S")

If the event is being abstracted for the Jackson Heart Study and the case is NOT also an ARIC cohort member, record J "JHS Cohort-not ARIC cohort" for question 3a. Use the current JHS cohort rosters to determine eligibility. (If the event is a Jackson Heart Study Participant and also an ARIC cohort, code the event as "C" not "J".)

3b    Is the patient's address in the ARIC Community surveillance catchment area?
(*Moved to CFD QxQ as item 5b*)

The data entry system will check cohort status (Q.5a.) and also check the address against master file, then automatically fill in Q.5b as follows:

No matter what answer is given for question 5a (cohort status), if address is calculated as being in the catchment area, "Y" (In catchment, needs abstraction") will be plugged in question 5b.

For Q.5a, cohort status of ARIC or JHS cohort, if the address is calculated as being out of the catchment area, "c" ("Out of catchment, ARIC or JHS cohort, needs abstraction") will be plugged.

For an answer of "S" (Community, not in ARIC or JHS Cohort) to question 5a, if address is out of the catchment area, question 5b will be plugged with "O", "Out of catchment, not in either ARIC or JHS cohort do not abstract".

If the computer cannot evaluate the address as in or out of the catchment area, "U" will be plugged in question 5b, and question 5c will be made available for the abstractor to fill out.

4.  Has the hospital chart been located? (*Moved to CFD QxQ as item 0d*)
 Record "Yes" or "No".  If response is "no", go to item 97.

5a.    Name *(Moved to CFD QxQ as item 1a)*
     The last name of the participant.

5b.   Initials:  Enter the initials of the participant's names.

6.    Social Security/Medicare Number. (*Moved to CFD QxQ as item 2,2a*)
If the SSN is in the chart, copy in question 2a exactly as given including the
letter which may be at the end.  If for some reason the entire SSN cannot be
abstracted, then abstract all digits available,leave the rest blank and confirm this
field. (This number is extremely important.  Check all available sheets for it and
look at correspondence at the back of the chart.)

Medicare numbers are the same as Social Security Numbers, except that Medicare numbers
are always followed by a letter.  Letters A through E are used for various reasons.

7.    Address Information (*Moved to CFD QxQ as item 4.a.0*)

Hospital records almost uniformly provide the patient's address and the address of a
guarantor. Often the addresses of an immediate relative, a proxy, or contact also are
found on the record. The immediate relative is often identified as the guarantor. The
location of this information in the hospital record is somewhat variable between
hospitals, as is the format.

Our goal is to transcribe the address that corresponds to the place of residence of the
patient.  Only if the patient's address is not available or incomplete should the
address of the relative or that of the guarantor (if different) be transcribed.  Even
if a full address for the patient is not available, city-state-zip, state-zip, and
city-zip combinations are valuable for ARIC to have (especially when zip is available
in the 5+4 format).

7b. Zip Code (*Moved to CFD QxQ item 4.f.*)
    The zip code associated with the address being transcribed. If available, zip code
    information in 5+4 format should be transcribed in full, nine digits.

8.      Sex.  Indicate either male or female. (*Moved to CHI QxQ as item 3*).

9a.    Race or Ethnic Group (*Moved to CHI QxQ as item 4*)
    This category may be found on the face sheet of the chart.  If not, review the
    entire chart, i.e., Admission, M.D.'s History, Admitting Nurse's Notes or Nurse's
    General Notes.  If conflicting information is found, circle the "O" (other)
    category and write a note in the space provided.  If the patient's race is one that
    falls outside the categories listed, for example, if he is an Eastern Indian,
    indicate "Other" and specify in notelog.

9.b.  Insurance. (*Moved to CHI QxQ as item 5a.*)
    Determine whether the patient has any of the types of insurance coverage listed in
    9.c.below.

9.c.  Type of Insurance.  (*Moved to CHI QxQ item 5.b.*)
    Note the type of health insurance coverage or payer status.  "Other" payer
    category refers to government insurance (other than Medicare and Medicaid),
    Champus, Union insurance (prepaid), VA Medical Insurance and workers'
    compensation.

10.   Birthdate. (*Moved to CFD QxQ as item 3*)
    Birthdate is usually found on the face sheet of each medical record.  Do not use
    the age given by the physician on the history and physical since it may be
    incorrect.

11. a-11.b. Date and Time of Arrival at Hospital. (*Moved to CHI QxQ as item 6a and 6b*)
    Note that the date and time of arrival at the hospital may be different from the
    time of admission.  For example, a patient may first be taken to the emergency
    room (arrival at the hospital), but may not be admitted for several hours.  In
    this case, record time of arrival at E.R.  If the time of arrival at the hospital
    is not recorded explicitly in the chart, abstract the earliest time recorded in
    the chart (such as a time a procedure was ordered or time of the admitting
    history and physical examination).  Arrival time may be taken from ambulance
    sheet.

12. Emergency Services. (*Moved to CHI QxQ as item 7*)
    If an emergency medical service unit (ambulance, helicopter, etc., but not a
    private vehicle, taxi or on foot) transported the patient to the hospital, circle
    "Yes".  This information can be found on the ambulance or ER sheet, in the
    admitting notes, on the face sheet, etc.  "Ambulatory" should be considered "No".
    If not specified, answer "U".  **If patient arrives by wheelchair, this should not be
    considered emergency medical service.**

13.   Transfer. (*Moved to CHI QxQ as item 8)*
 If the patient was transferred to or from another acute care hospital (hospital with emergency room), write the name of the hospital from which the patient was transferred, and the city and state in which it is located and the date of admission to that hospital.  This information can be found on the face sheet of the chart and in admitting notes.  (You may have to ask record room how this is coded if on the face sheet.)  The purpose of this question is to identify recent hospitalization(s) of this patient, possibly to be reviewed at a later date.  (For Surveillance cases, only hospitalization(s) in the catchment area will be reviewed.  For Cohort cases, all hospitalizations are reviewed.) The hospitalizations should include multiple hospitalizations among different hospitals, or transfers from one hospital to another.
 If a patient went to one study hospital emergency room, and was not admitted, and then was sent to another study hospital and was admitted, this would not be a transfer from the first hospital (assuming that you are abstracting for the second hospital). The patient must have been admitted to the first hospital for a transfer to have taken place.  A transfer to the rehabilitation unit of a hospital or the same hospital should generally be recorded as a "No", unless 1) it is a separate admission and 2) the chart appears to contain additional diagnostic information.

     Indicate whether the transfer involved a catchment area hospital.

Note:  In Washington County only, transfers to certain out-of-catchment area hospitals
     also need HRAs completed; these should be listed as "in-catchment."   Transfers
     from Washington County Hospital ER have special consideration.  See Manual 3

     **Note:  Clearly designated extended care facilities that are physically located
     within an acute care hospital are not considered as "another acute care hospital."**

14.     Renumbered as HRA0c. (*see item 0c on page 2*)

15. Discharge Diagnosis Codes. (*Moved to CHI QxQ as item 9).*
     Fill in the discharge diagnoses and procedure codes as listed on the face sheet or discharge summary in the order listed.  Use the most complete source. It is important that all diagnoses are coded.  When a discrepancy exists between discharge codes and the code listed on the hospital index, the latter is used even if it represents a transcription error.  If the fourth digit, to the right of the decimal, is absent, leave it blank.  Do not enter a zero there unless it appears in the chart.  Be sure to include all primary and secondary diagnoses as designated by the M.D.  If ICD codes of the discharge diagnosis are not given on hospital charts and are only available from the diagnostic index, leave blank.  Do not "mix and match" diagnoses and codes from different sources.  If an ICD9 code is in the listing twice, record it both times; if you run out of room, then eliminate one of the repeat codes.

16. Discharge Diagnoses Transcribed. *(Moved to CHI QxQ as item 10).*
     If the response is "Yes" type the discharge summary.  Write in the diagnoses in the order in which they are listed on the face sheet.  If not listed on the face sheet, use the discharge summary.  (Procedures do not have to be written out here.) Attach ID number label where specified. .  There is no need to re-type the discharge summary in item 22 of the HRA.

          Note: In general, diagnoses codes should not be abbreviated but when necessary, medical abbreviations are acceptable.

17.   Patient Disposition on Discharge.  This information can be found in the discharge summary or on the face sheet.  If the patient died in the E.R., this information can be found on the E.R. sheet.  Some hospitals keep a separate log book for deaths.

18.   Autopsy.  If an autopsy is mentioned in the Death or Discharge Summary, circle "Yes".  If not, circle "No".

19.   a.   Dead on Arrival.  If the patient died outside of the hospital but was brought in dead, he is considered dead on arrival (DOA).  If the patient was brought to the ER alive but died in the emergency room, he is an ER death.  If admitted to the ward, CCU, or ICU, answer "No".

          If a HRA patient is DOA, an ER death, or hospitalized with no vital signs

and dies within 24 hours of admission, s/he is treated as an out-of-hospital death.  If s/he lived at least 24 hours in the hospital (or did not die), s/he is treated as an in-hospital event.

b-d.   <u>First Recorded Blood Pressure, Pulse</u>.  First attempt to obtain BP and pulse may be charted on the ambulance sheet, the ER sheet, the clinical graph or the nursing admission note.  The pressure may be from sphygmomanometry or an arterial line.  If both right and left arm blood pressures are given, take the one with the highest systolic pressure.  If the systolic pressure is the same for both arms, record the highest diastolic value.  If a BP or pulse range is given, take the highest value given.  If the patient was admitted from a doctor's office, use the first BP recorded in the hospital.  If the systolic BP or pulse was unobtainable and the patient died within 24 hours, enter three zeros (000).  If the systolic blood pressure and/or pulse was unobtainable and the patient lived at least 24 hours, enter '001' for systolic BP or pulse appropriately to trigger skip patterns.  If no BP or pulse is recorded, enter ===.

e.     For the event under consideration, was there acute pain anywhere in the chest, left arm or jaw, (this description may also have involved the back, shoulder, right arm or abdomen on one or both sides) mentioned anywhere in the hospital chart and present within 72 hours of arrival at this hospital, or at the onset of a CHD event beginning in this hospital?  Included in this definition for pain are ischemic pain, angina, cardiac and substernal pain.  "Chest tightness" "heaviness" or "discomfort" is equivalent to chest pain.  Answer unknown if no history either way or no indication at all of timing.  If the pain began in the ER but before admission, consider onset as occurring out of hospital.

f.     Previous history refers to a time preceding the onset of the event under consideration.  For example, a transfer from another hospital should not be considered a "previous event".  Historical questions generally refer to before 72 hours prior to admission or documented as long-standing by chest x-ray, echocardiogram, or other diagnostic test.  Take information from the history of the resident, cardiologist, attending physician, ER physician, or nursing notes, in that order.  <u>Also review face sheets of all previous admissions for previous MI.</u>  If this information states "previous silent MI," "borderline heart attack," "aborted MI," record the answer as "yes".  **"Aborted MI"** is not an official medical term.  The following probably occurred, there was clinical and ECG evidence of evolving MI or reperfusion was attempted (thrombolysis, angioplasty) or serial ECGs suggested that infarction has not occurred or was limited.  History of "aborted MI" qualifies as history of MI.

An abnormal ECG alone, stating "old MI" cannot be used for positive previous history, unless the physician verifies it.  Angiogram evidence cannot be taken as evidence unless explicitly verified by the physician.  If conflicting information exists in the medical record, base your answer selection on the most reliable source.  Statements such as:  "No cardiac problems", "No adult illness", "Previously well", and "No previous history of heart disease" are sufficient to answer "No" to previous MI.  If no indication either way, answer "Unknown".

g.     If a previous myocardial infarction occurred within four weeks of the event under consideration, answer "Yes".

h.     <u>Angina</u>.  Examine the history for mention of previous angina pectoris or coronary insufficiency prior to this event i.e., > 72 hours before admission).  This would include mention of chronic chest pain, ischemic pain, and "history of chest pain".  Chest pain specified as being "of unknown origin" does not qualify.  Answer "Yes" if the history includes any mention of the patient taking nitroglycerin for chest pain or if the physician notes that the patient has "substernal pressure, pain, tightness, or burning distress precipitated by exercise or excitement, or both and is relieved by rest and/or nitroglycerin".  Answer "No" if the history explicitly states that the patient has <u>no</u> history of any of the above.  Answer U = unknown if none of the criteria for "Yes"/"No" responses apply.

i.     History of other chronic ischemic heart disease, coronary disease, etc. not specified as angina or MI.  This includes CHF described as due to coronary

disease or ASHD (Atherosclerotic Heart Disease).  CHF due to hypertension or other reasons is "No".  Arrhythmias are "No".

20.   Discharge Statements.  Examine the chart, *i.e.*, the discharge summary, ECGs, laboratory reports, transfers, *etc.*

    a.   This may be answered from the discharge summary, face sheet, or hospital index, whichever is most complete.

    d.   Mention of acute MI in the discharge summary.  Examine the narrative portion of the discharge summary.  If there is specific reference to a confirmed or possible acute MI that resulted in this hospitalization or occurred during this hospitalization record "Yes". "Aborted MI" is equivalent to "acute MI" or "acute CHD" and applies to the index event (abstract as all other events).  The following are statements consistent with a "Yes" response--"acute cardia ischemia resulting in tissue damage" and "cardiac biomarker consistent with acute myocardial infarction". **"**Aborted MI**"** is not an official medical term.  The following probably occurred, there was clinical and ECG evidence of evolving MI or reperfusion was attempted (thrombolysis, angioplasty) or serial ECGs suggested that infarction has not occurred or was limited.  History of "aborted MI" qualifies as history of MI.

    e.   (1-4) Streamlining checklist.  The purpose of this question is to reduce abstracting time for cases that would certainly be classified as "NO MI" had they had an entire HRA completed.  This four part  question asks if specific criteria apply to this chart.  They require  the abstractor to evaluate cohort status, presence of ECG, level of  cardiac biomarkers and transfer status.  If all four items are answered  No, then skip to item 97.  If cardiac biomarkers are missing from the chart, record "No" for 20e(3).  Answer "No" to 20.e.3. `is any cardiac biomarker above the normal limit' if there is only a single elevated LDH. (Serum creatinine and BNP are not considered cardiac biomarkers for the purposes of this question.)

21.   <u>First Recorded Blood Pressure and, Pulse Rate (not during CPR)</u>.  First attempt to obtain BP and pulse may be charted on the ambulance sheet.  If the ambulance sheet is not available, take from the ER sheet, the clinical graph or the nursing admission note in that order.  If more than one ambulance or ER is involved, use the first.  The pressure may be from sphygmomanometry or an arterial line.  If both right and left arm blood pressures are given, take the one with the highest systolic pressure.  If the systolic pressure is the same for both arms, record the highest diastolic value.  If a BP or pulse range is given, take the highest value given.  If the patient was admitted from a doctor's office, use the first BP recorded in the hospital.  If the BP or pulse was unobtainable, enter three zeros (000).  If no BP or pulse is recorded or BP is obtained by palpitation, enter '==='.  Note:  If pulse or BP were absent and the patient died, this case is to be treated as an out-of-hospital death.

21.   d.   <u>Smoking Status.</u>   Examine the history for any mention of smoking status.  If unable to determine if a chart with a positive smoking history is a current or past smoker, record "smoker NOS (not otherwise specified)".  For the purposes of this question do not attempt to distinguish between cigarette, pipe or cigar smoking.  If a Current smoking status is indicated in the chart as "non smoker" but no history is mentioned then record as N "never smoker".  If the record indicates patient quit smoking less than or equal to 1 week prior, consider as current smoker.  If the patient quit greater than 1 week, consider as past smoker.  Chewing tobacco only record 'N' for "never smoker".

22.   <u>Discharge Summary Transcribed:</u>  Copy the Discharge Summary.  If no Discharge Summary, copy the Cardiac Consult and last physician progress note.  If no Cardiac Consult, copy the H&P.  This question ought to be always answered 'Yes'.

**Not restricted to 72 hours**

23.   a.   <u>Acute Cardiac Symptoms</u>.  Check the admission history, etc., for mention of the beginning of acute cardiac symptoms which brought the patient to seek medical attention.  Examples of cardiac or CHD symptoms are:  chest pain, collapse, syncope, shortness of breath, gastrointestinal symptoms such as

nausea, palpitations, throat tightness, pain in the neck, left arm, and sternum and sudden death.  Chest tightness, discomfort or heaviness is equivalent to chest pain.  Marked fatigue and shortness of breath may be considered acute cardiac symptoms if the chart seems to indicate this.  If the symptom includes one of these but is obviously noncardiac (e.g. chest pain from pneumonia, nausea from pancreatitis), answer "No".  If a patient came in for a scheduled procedure (such as pacer battery replacement), but reported acute cardiac symptoms prior to arrival, then the symptoms should be considered acute symptoms.  In cases where a patient collapses during a stay and had no other acute cardiac symptoms, consider the collapse a symptom (answered "No, after arrival") and it should be treated as an in-hospital event.  Additionally, if the patient never reported pain or discomfort before the collapse and did not recover, 25a is "Unknown". Neurological syncope or dizziness is "No acute cardiac symptom".

Sometimes, as in cases with chronic angina, there may be no acute symptoms. If there were no acute symptoms, change in symptom quality or frequency such as new unstable angina), or symptoms were only chronic, do not answer "Yes".  The symptoms must have begun outside this hospital to answer "Yes". There is no three day limit on the answer to this question, and it is not limited to chest pain.  The symptoms must have begun outside this hospital to answer "Yes".  For determining the location where symptoms occurred, count the ER as out-of-hospital and the doctor's office as out-of-hospital. If this is a transfer from another hospital, acute symptoms before that hospitalization or in that hospital count as "Yes", because they occurred prior to arrival at this hospitalization.
If a perioperative MI(MI that occurs during the operation or immediately following), answer "No acute cardiac symptoms."
If patient is admitted with chest pain because of atrial fibrillation question 23a should be answered "yes."
If a patient has procedure-induced chest pain during an elective catheterization which necessitates admission question 23a should be answered "yes" because pain is not expected during a catheterization. Pain induced for balloon inflation or angioplasty (if temporary), should be answered "No".

b.    Timing between onset and hospital arrival.  Estimate the time to the best of your ability (refer to instructions for time expressions in General Instructions, item 7).  If there were multiple new episodes of symptoms (e.g. chest pain), you must pick the likely onset which would be the first or most severe depending on the circumstances.  In the case of someone with chronic angina, it is a change in the pain, prompting action, which usually marks the onset of an event.  Stuttering and recurring pains should generally not be taken as separate events unless it is clear that they are such.  Consult your surveillance director when in doubt.

24.  a.    Primary Diagnosis - Admission.  If the patient had no pre-hospital cardiac symptoms (Item 23a), check the admit note or admission sheet diagnosis for the primary reason for admission.  If a patient is admitted for elective angioplasty, consider this an "other non-acute CHD evaluation" (C).
            TIA = "O"
            Elective cardioversion = "O"
            Valve replacement = "O"
            Permanent placement pacemaker = "O"
            EP studies, elective = "C"

b.    In-hospital CHD Event.  Check the ER sheet, admit note, and history for reference to when the CHD event took place.  CHD events in hospital of interest include new infarction, new acute ischemia, reinfarction (including a documented MI "extension" or "aborted MI"), enzyme leak, or enzyme rise, but not procedures (such as CABG) or death.  Also of note as an event is "primary chest pain" - acute chest pain happening for the first time during a hospitalization and prompting additional procedures. For example, if a patient was admitted electively and develops chest pain during the hospitalization, prompting procedures, this should be considered an event.

An answer of "No, After Arrival" to Item 23a does not mean that this question will automatically be answered "Yes".  A patient could experience chest pain, shortness of breath, or other symptoms as a continuation of an

event begun outside the hospital.  Mere continuance of symptoms is not an in-hospital event; nor is the occasional occurrence of a chronic anginal pain.  An event should be definitely identified on the medical record as new infarction, new acute ischemia, reinfarction, or fit the above definition of primary chest pain.

    c.    <u>Date of In-hospital CHD Event</u>.  If more than one, pick the primary or most important, as described in the Note below.

[NOTE:  A problem arises with subsequent questions if the patient had multiple CHD events before and/or during the same admission.  (For example, multiple events would occur if a person was admitted for acute angina, recovered, but infarcted before discharge; or if a patient was admitted for an MI, then reinfarcted.)  In the case of multiple events, the abstractor must decide which is primary or most important, based on severity, biomarkers, physician notes, etc.  In the case of angina followed by infarction, the most important would be the infarction.  With a first infarction, then reinfarction or extension, the first infarction is considered primary.  If two events seem equal, pick the first.  When in doubt, consult your supervisor.  Answer subsequent questions for the most important event.  If a patient has acute symptoms which can be identified as an event and subsequently has a cardiac arrest, this should be treated as one event.  In this case, the arrest is a <u>complication</u> of the first event.  Likewise, after a myocardial infarction, additional episodes of pain which do not lead to a new MI are not to be considered new in-hospital events.

Only new an separate infarctions, as determined by the physician, should be considered second events.  For example, a person could have been admitted for an inferior myocardial infarction, and the day before discharge suffer a new anterior myocardial infarction.  In summary, symptoms and signs that are complications or a continuation of a first MI should <u>not</u> be considered as a second event.]

**Within 72 hours**

25.    a.    <u>Onset of Acute Pain.</u>  For the event under consideration, was there acute pain (tightness, heaviness, discomfort) anywhere in the chest, left arm or jaw, (this description may also have involved the back, shoulder, right arm or abdomen on one or both sides) mentioned anywhere in the hospital chart and present <u>within 72 hours</u> of arrival at this hospital, or at the onset of a CHD event beginning in this hospital?  Onset of event means onset of chest pain or other symptom. Included in this definition for pain are ischemic pain, angina, cardiac and substernal pain.  If pain was chronic and/or no acute episode was evident (eg., perioperative MI), skip to Q. 26.  Answer unknown if no history either way or no indication at all of timing.  If the pain began in the ER but before admission, consider onset as occurring out of hospital.  Be sure to record chest pain within the 72 hours, even if this is a transfer.

NOTE:  See Appendix DD for examples of how Items 23 and 25 should be answered for typical cases.

25.    b.    <u>Date of Onset of Pain</u>.  If the pain is intermittent, then pick the most prominent pain in the last 72 hours. Onset of event means onset of chest pain or other symptom. If intermittent and none seems more prominent, then give the date of the start of the first episode within 72 hours prior to arrival at the hospital or onset of the in-hospital event.

    c.    <u>Chest location</u>.  Indicate specifically if pain involved the chest (yes) or did not (no).  If not mentioned either way, answer "unknown".

    d.    <u>Noncardiac pain</u>.  This question is asked to determine if the pain experienced satisfies the ARIC criteria for chest pain by establishing that there is no definite non-cardiac cause of chest pain.  It refers to the final conclusion about a pain or discomfort, not the "rule-out" diagnosis.  Only specific diagnoses of conditions or diseases made by an M.D. or D.O. to account for the pain in question should be recorded here.  The pain may result from an old diagnosis, rather than a new one.  Answer "Yes" if there is an explicit statement by a physician that the pain is definitely due to a non-cardiac cause. If yes, specify the diagnosis of what the pain was due to.  Examples could be:  fractured ribs, costochondritis, esophagitis, or an acute gallbladder attack.  Pericarditis should be answered as "yes" and specified.  A charted impression "R/O (rule out) fractured rib" should not be recorded as a "Yes" answer.  The answer "No" is to be used when an

explicit statement that the pain is definitely cardiac (e.g., cardiac tamponade).  If patient is admitted with chest pain because of atrial fibrillation question 25d should be answered "no."

If neither a clear positive or negative statement is available, answer "U".

When in doubt, ask the Surveillance Director.  (Note:  It is preferable, when in doubt, to specify the cause so that the true answer can be determined later.)

e.    Specify as described above.  If a specific cause is not noted, write "non cardiac chest pain."

f.    <u>Death in Hospital</u>.  Look in discharge summary or on death record for whether or not the patient died in the hospital.

g.    <u>Timing of Death</u>.  Estimate time from onset of acute symptoms (defined in previous questions) and death.

26.   a.    <u>Reperfusion</u> refers to complete or partial restoration of coronary blood flow by coronary angioplasty, coronary atherectomy, coronary artery bypass graft (CABG), or thrombolysis using intracoronary or intravenous streptokinase, urokinase, anistreplase, APSAC, or tissue plasminogen activator (TPA).  Check procedure notes, EMS, ER notes, and medication lists.  (See Appendix BB for drug information.)  It must occur within 24 hours of onset of acute <u>event</u> (not necessarily the first symptom).  Onset of event means onset of chest pain or other symptom. Answer "Yes" even if reperfusion was unsuccessful.  Note:  The timing is not necessarily the same as that recorded by the physician.  Answer "No" to reperfusion for Transmural Myocardial Revascularization (TMR).

For transfers, answer "Yes" if reperfusion given in first hospital within 24 hours after onset, but in this case 29.h. is answered "No".

**Note:  Always include a review of the cath lab report for medications. If a nurse initialized medication, "0" means not given or given.**

b.    Record time between <u>event</u> (acute symptoms) and onset of reperfusion (intracoronary or intravenous) attempt. Onset of event means onset of chest pain or other symptom.  To determine onset of CABG reperfusion, check anesthesia record for time patient place on bypass.  IF PTCA, take first balloon inflation as the time of reperfusion attempt.  If unclear regarding two times, take the longer. If no timing at balloon inflation is available use the time the patient went into the cath lab.

27.   <u>CCU/ICU</u>.  Check discharge summary or progress notes for any admissions or transfers to the CCU or ICU or a telemetry bed.  Coronary care units (CCU) and intensive care units (ICU) are dedicated areas so assigned by the hospital administration.  Notes designated as written while the patient was in one of these units is evidence of admission.  Telemetry includes less intensive but continuous cardiac monitoring.  In the case of a hospital that does not have either CCU or ICU or telemetry, mark the answer as "No".

28.   For this question, not recorded = "No".  Record findings in this hospital, which refers to any time after arrival of EMS.  If a transfer, do not record findings at the previous hospital.

a.    <u>Shock</u>.  Cardiogenic shock (pump failure) is failure to maintain blood supply to the circulatory system and tissues because of inadequate cardiac output, i.e., faulty valves and/or faulty muscle action.  A person in shock cannot maintain blood pressure or perfuse organs.  The administration of Dopamine is a clue, but not definitive evidence that a patient had shock or pump failure.  Look for the term "shock" or "pump failure".  Answer "Yes" if shock occurred at home, at the ER or hospital or during the hospital stay.  Septic shock = "No".

1.    Note if a physician documented shock as being present during this admission within 24 hours of this event onset of symptoms.

**Note:  For 28.a.1., 28.b.1., and 28.e.1. if there is a clear onset of the**

**condition then use 24 hours since onset.  If there is not a clear onset, then use date of admission and determine if within 24 hours.**

b.   <u>Congestive Heart Failure or Pulmonary Edema</u>.  CHF is an inability to adequately maintain cardiac output, but not as severe as shock.  Pulmonary edema is fluid in the lungs due to poor cardiac output.  Pulmonary edema due to malignancy = "No".  Check the physical exam, ER sheet, admission diagnosis and history, and x-rays.  Definite or probable pulmonary edema, pulmonary congestion, biventricular failure, or CHF noted on x-ray or autopsy is considered "Yes".  Slight, minimal or mild pulmonary congestion should be recorded as "No"; cardiac failure as "Yes".  Mild <u>to</u> moderate pulmonary edema or CHF = "Yes". If record indicates chronic CHF or Pulmonary edema, record "Yes".  If new onset of CHF occurs within first 24 hours of this event in a patient with chronic CHF, record "Yes" to 28b1.

   1.   Note if a physician documented CHF as being present during this admission within 24 hours after onset of this event.  Note: Fluid overload = "no".

c.   <u>S3 Gallop (third heart sound)</u>.  Also known as ventricular or summationgallop.  This would be recorded in the physical exam notes or progress notes.  Do not consider S$_4$ (atrial gallop) as  equivalent.

   Nonspecific gallop = "No".

d.   <u>Rales</u>.  This can be taken from physician's or nurse's notes.  If the patient had rales (moist or widespread, not basilar alone), record this as a "Yes".  Rales are also called "crackles".  Rales are considered present if there are$\geq$ "1/3 of the way up" noted by a physician or noted by a nurse on a day when a physician does not comment on the pulmonary exam.  A "few rales" or "scattered rales" is "No".  Fine, diffuse, some or slight rales $\geq$ 1/3 up is "Yes".  Lower lobe = base.

| <u>No</u> | <u>Yes</u> |
|---|---|
| expiratory crackles | inspiratory rales |
| faint rales | dependent rales |
| rales that clear w/ cough | inspiratory crackles |
| tubular breath sounds | musical rales |
| rhonchi | bilateral rales |
| rales | |

e.   <u>Ventricular fibrillation</u>.  Chaotic contraction of heart resulting in cardiac arrest, sometimes reversible by electrical defibrillation.  Documentation usually in progress notes, arrest record, or discharge summary.  Record in Q30.  Ventricular flutter = "No."  Hospital stay starts when EMS arrives on scene, "at home" is before EMS arrives on scene.

   <u>Cardiac arrest</u>.  Cessation of effective heart pumping due to ventricular fibrillation or asystole.  Would prompt cardiopulmonary resuscitation or death.  Documentation would be found in progress notes, arrest record, or discharge summary.  Respiratory arrest alone = "No".  Ventricular tachycardia with no blood pressure = "Arrest".  Location of arrest is defined as the entire process, not the onset.  For example, if CPR stars outside the hospital but continues after arrival, answer "Yes."  If the patient has an arrest and begins to recover before arrival, then answer "No."

   <u>Asystole</u>.  Complete cessation of heart beat, resulting in cardiac arrest.  Documented usually in progress notes, arrest record, or discharge summary.   Sinus pause is not asystole.  Every person who dies = "Yes".

   Induced cardiac arrest/asystole via cardioplegia during a procedure = "No".

   1.   Note if a physician documented cardiac arrest as being present during this admission within 24 hours of this event.  If the event started as a cardiac arrest, answer "Yes."

f.   <u>Pulmonary embolus</u>.  Blood clot to lung impairing oxygen exchange to blood would be documented in progress notes, discharge summary, lung scan, or pulmonary arteriogram or autopsy.

g.   <u>Stroke</u>.  Synonyms are cerebrovascular accident (CVA), cerebral hemorrhage,

cerebral infarction, cerebral thrombosis, subarachnoid hemorrhage. Documented in progress notes, discharge summary, or CT scan.  Stroke syndrome = "Yes".  SAH = "Yes".  Do not take TIA. A TIA (as opposed to a stroke) is the temporary loss of a function for less than 24 hours = No.

h.     Pneumonia.  Documented in progress notes, discharged summary, or chest x-ray.  Synonym = pneumonitis.  Radiation pneumonitis = "No".

29.     Special Procedures.  Check the physician notes on procedures and the laboratory reports for the following procedures during the present hospital stay.  (If a transfer, do not record procedures at the previous hospital unless a patient is transferred with a Swan Ganz catheter and/or a Balloon pump).  Consider the Swan Ganz a monitoring procedure.  Thus, although the catheter may have actually been inserted at the first hospital, if it remains in place for monitoring procedures, answer 29.d. "Yes". If the Swan- Ganz catherization is used for diagnostic pressure during a cardiac catherization and then removed, answer "No".  Check for operations and procedures codes at the bottom of the face sheet.  These codes may appear without a language description of the operations and procedures.  If this is true, the codes will have to be translated in order to circle the appropriate procedures.  If coronary angioplasty or reperfusion was attempted and completed, "yes" should be answered even if the procedure was not successful in reducing the lesion or increasing blood flow.  If angioplasty was attempted, but for some reason the physician cannot get to the lesion because of some complication, then the answer is "No".  For definitions and descriptions of each of the procedures and ICD procedure codes and the "other" category, please refer to Appendix AA.

For 29f, bypass surgery is not necessarily automatic for mitral valve replacement/repair.

Items 29.c.1., 29.c.3, 29.f.1., and 29.h.1. ask how soon after the event the procedure occurred.

Item 29c.2. If atherectomy appears in the course of a CABG, read through the reports; it can be part of a PTCA procedure.  Synonyms include TEC: Transluminal Extraction Catheter; DCA: Directional Coronary Atherectomy.  Note: enadarterectomy = atherectomy)

The timing question 29.h.1., refers to intracoronary (29.g.) or intravenous 29.h.) reperfusion being performed.

Item 29.k., if multiple tests, include each separated by a slash.

Item 29.e., record transesophageal ECHO as 'Yes'.

Item 29.m. Record YES if a cardiac MRI was performed during this hospitalization. A cardiac Magnetic Resonance Imaging (MRI) is a noninvasive imaging test of the heart which can provide an exact measurement of the left and right ventricular ejection fraction.  Synonyms for this test include "cMRI", "cardiac Magnetic Resonance", "cardiac MR", "cardiac Magnetic Resonance Angiography", "cardiac MRA", or "cardiac MRI/MRA". Note: the MRI scan of heart  only looks at the function and perfusion of the heart and not whether ischemia can be provoked. For

Item 29.n. a pharmacologic stress test should be considered as 'Yes'. Abbreviate, as necessary.  Answer YES if the person has Persantine or other pharmacologic stress test.  (See Appendix 29.j., pg 25.

If the procedure was mentioned but time course cannot be determined, mark "U". Item 29.p. includes either temporary or permanent placement. Pacemaker wires are considered "Yes".

Note:
      An angioget is a device to "vacuum up" a clot at the site of an angioplasty or stent. If there is a large clot at the site it is very difficult to do the stent/angioplasty and this allows them to do it in one procedure instead of anticoagulating the pt and having him/her return days later.  Do not include in 29.Q.

29.p.1 Coronary Stent:

Record "yes" if a coronary stent was placed any time during this hospitalization. Placement of multiple stents counts as "yes".  A coronary stent is a physical

device inserted into the lumen of a coronary artery to establish and/or maintain patency of a vessel for the purpose of revascularization of tissue distal to the stent.  If the physician attempted to place one or more stents and was unsuccessful in completing the procedure record "no". The letters "PCI" for primary coronary intervention can refer to a stent, angioplasty or other intervention.  However, if a stent is used the word stent should appear in the description.  Names for different types of stents may be found in the medical record. These include but are not limited to the following: Mesh stents, Slotted-tube stents, Coil stents, Multidesign stents, and bioabsorbable stents. Coronary stent also includes drug eluting stents.

Timing question 29.p.1.a, refers to the coronary stent.

29.p.2. Implanted defibrillator:

Record "yes" if a cardiac defibrillation device was implanted in the patient at any time during this hospitalization.  If a defibrillator was placed and subsequently removed during this hospitalization record "no".  In the physician attempted to place a defibrillation device and did not successfully complete the procedure record "no".  A defibrillator is a device that monitors the rhythm of the heart and if ventricular fibrillation is detected will deliver a series of electric impulses designed to "shock" the heart back into normal sinus rhythm. The defibrillators may be referred to by a variety of names such as automatic implantable cardioverter defibrillator, AICD, or an implantable cardioverter defibrillator (ICD).  The defibrillators should be obvious as each implant will have a product label in the chart with the name of the company and the model and number.  When in doubt, contact site MD.

Timing question 29.p.2.a refers to the implanted defibrillator.

29.p.2.c.  Record "yes" if a coronary CT was performed.  This includes indication that a multi-slice cardiac computed tomography angiography (CTA) was performed (also referred to as a "64-slice multi-detector coronary CTA".  If a computer tomography (CT) or electron beam computer tomography (EBCT) was performed solely to assess coronary calcium, record "no" for 29.p.2c.

29.p.2.d.  Record "yes" to if a magnetic resonance imaging (MRI)stress test was performed. This test can also be referred to as "cardiac magnetic resonance (CMR) stress test". A stress test is a noninvasive cardiac test to assess for active coronary ischemia or coronary blockages by stressing the heart using either exercise (exercise stress test) or medications (pharmacological stress test).  Stress tests can be done using echocardiography ("stress echo", "dobutamine stress echo"), nuclear imaging ("nuclear stress test"), or cardiac MRI ("cardiac MR stress test").  Note: MUGA or RNV is not a nuclear stress test. This test may be performed before, during, or after either exercise stress or dipyridamole/adenosine infusion to stimulate the effects of exercise.

29.q. Other

Include under "Other" coronary calcium assessment by helical CT or EBLT (electron beam computer tomography).  See Appendix 29.Q.

30.     a.     <u>Closed chest massage or cardiopulmonary resuscitation (CPR)</u>.  This question has two aims:  (a) to support or dispute diagnoses of definite myocardial infarction based on chart abstracts, and (b) to inquire after medical care delivery.  CPR is defined as a basic emergency procedure for life support, consisting of artificial respiration and manual external cardiac massage. It is used in cases of cardiac arrest.  Cardioversion is defined as the use of direct current counter shock through paddles to restore the heart's normal sinus rhythm during cardiac arrest.  (Cardioversion may be used in treatment of atrial fibrillation and arrhythmias, but such elective uses are to be considered "No".) Record "Yes" if there is firing of an implanted defibrillator. Refer to the EMS, ER, ICU/CCU, ward notes, CPR or cardiac arrest sheets.  When there is precordial thump, the response should be "Yes".  When cardioversion is part of CABG or EP studies, the response should be "No". Record  Artificial respiration alone = "No". This question should be answered "yes" for internal (or open chest) cardiac message. Question 30a should be answered "yes" if more than one shock is administered during CABG as this should be considered cardioversion

30.     b.     <u>Date of CPR/Cardioversion</u>.  List the date of the <u>first</u> emergency

cardioversion or CPR attempt for this event.

c.    Location.  Indicate where first CPR and/or cardioversion was started.

31.   Drugs used during hospitalization.  Refer to Appendix BB for definitions of
      nitrates, calcium channel blockers, beta-blockers, digitalis, ACE inhibitors,
      intravenous heparin infusion preparations, antiplatelet agents.  Review the
      hospital medication record and discharge note to see if any of these were given
      during the hospital stay or at discharge.  If a generic or trade name is listed,
      record as "Yes".  If the medication is not listed, record as "No".  Xylocaine
      (lidocaine) used as a local anesthetic is "No" for 31e.  If drug ordered but
      never given = "No", a drug must be listed on the ER sheet/medication sheet,
      initialed and dated. Also, any medications listed as Discharge medications,
      "Yes".".  Heparin used briefly as part of the administration of procedures should
      be considered "No" to intravenous Heparin.  Administration of subcutaneous
      heparin, Heplock, or heparin flush should not be considered as intravenous
      heparin infusion and should be recorded as "No" for HRAF 31i. Recording "No" for
      31i when heparin is given subcutaneously applies only to HRAF31i.  When other
      meds are given subcutaneously, this should be recorded as "Yes".
      Subcutaneous infused Lovenex should be considered as "yes" to HRAF31i. IV
      administered HIRUDIN should be considered as "yes" to HRAF26a, AND HRAF29g or
      HRAF29h. If IV HEPARIN is administered during this hospitalization, record "Yes"
      to HRAF31i. Always include a review of cath lab report and operating room report
      for medications.  For question HARF31j, a Persantine dual isotope stress test is
      not an antiplatelet agent.

31 k.  Glucose, insulin, potassium infusion:

       A glucose, insulin, potassium infusions (sometimes abbreviated GIK infusion) is a
       special procedure to limit infarction size.  It's given as a continuous infusion
       through a vein.  This procedure would be identified from the orders or the
       progress notes and it might be seen with orders such as GIK infusion or protocol,
       glucose insulin potassium or some other indication in the orders of insulin
       infusion plus glucose and potassium.  However care must be taken to differentiate
       GIK for myocardial infarction and the use of infusions to treat other conditions.
       For example insulin infusions are used to treat diabetes and glucose infusions
       are routine in the CCU.  Also many patients need intravenous potassium due to
       hypokalemia.  Infusions of glucose, insulin, and potassium can also be given in
       conjunction with CABG surgery.  If given only as adjunctive therapy to CABG
       record "no" to 31k.

31 l.  Lipid lowering medications (statins, niacin, other)

       Medications designed to lower either total serum cholesterol or low-density
       lipoprotein cholesterol (LDL) may be given during the hospitalization or at
       discharge.  Refer to Appendix BB for names of lipid lowering medications.  Often
       these medications are started before hospitalization and then continued after
       discharge.  If lipid lowering medications are not initiated but continued then
       record "yes".

32.    History of Previous MI.  Previous history refers to a time preceding the onset of
       the event under consideration.  For example, a transfer from another hospital
       should not be considered a "previous event".  Historical questions generally
       refer to before 72 hours prior to admission or documented as long-standing by
       chest x-ray, echocardiogram, or other diagnostic test.  Take information from the
       history of the resident, cardiologist, attending physician, ER physician, or
       nursing notes, in that order.  For transplanted heart, use the history of the
       individual, not the history of the heart.  Also review face sheets of all
       previous admissions for previous MI.  If this information states "previous silent
       MI", "borderline heart attack", history of "aborted MI" record the answer as
       "yes".  An abnormal ECG alone, stating "old MI" cannot be used for positive
       previous history, unless the physician verifies it by mentioning it in the
       discharge summary, progress note, or history/physician notes.  Angiogram evidence
       cannot be taken as evidence unless explicitly verified by the physician.  The
       question is answered "No" if there is specific mention of no previous MI.  (See
       Appendix GG)  If conflicting information exists in the medical record, base your
       answer selection on the most reliable source.  Statements such as:  "No cardiac
       problems", "No adult illness", "Previously well", and "No previous history of
       heart disease" are sufficient to answer "No" to previous MI.  If no indication
       either way (an old MI is not mentioned, regardless of what is said about chest
       pain), answer "Unknown".  "Essentially unremarkable history" should be answered

as "unknown".  An MI noted on the autopsy is recorded as "Yes".  If there is good documentation of a patient's history, the abstractor can answer "No," even if an MI is not specifically stated. "Aborted MI" is not an official medical term.  The following probably occurred, there was clinical and ECG evidence of evolving MI or reperfusion was attempted (thrombolysis, angioplasty) or serial ECGs suggested that infarction has not occurred or was limited.  History of "aborted MI" qualifies as history of MI. History of "aborted MI" is "Yes". "Unequivocal' not open to doubt or misunderstanding.

33.    Angina.  Examine the history for mention of previous angina pectoris or coronary insufficiency diagnosed prior to this event.  This would include mention of anginal pain or ischemic pain.  Chest pain specified as being "of unknown origin" or undiagnosed is "unknown".  Answer "Yes" if the history includes any mention of the patient taking nitroglycerin for chest pain or if the physician notes that the patient has "substernal pressure, pain, tightness, or burning distress precipitated by exercise or excitement, or both and is relieved by rest and/or nitroglycerin".  This does not include nitroglycerine prescribed for another person.  Answer "No" if the history explicitly states that the patient has <u>no</u> history of any of the above.  Additionally, if there is no history of MI or cardiac disease and chest pain has never been diagnosed as angina, answer "No". Answer "U" = unknown if none of the criteria for "Yes"/"No" responses apply. "Angina equivalent" and "silent ischemic" are recorded as "Yes".  Artery spasm on angiography with chest pain = "Yes".  This question should be answered "yes" if patient has a positive history of angina but is currently pain free. If a patient has a history of CABG and/or PTCA, but no mentioned history of angina or MI, question 33 should be answered "unknown" and then specified in question 34.

34.    Other Chronic IHD.  History of other chronic ischemic heart disease, coronary disease, etc. not specified as angina or MI.  This includes CHF, and ischemic cardiomyopathy, or arrhythmia described as due to coronary disease or ASHD (Atherosclerotic or Arteriosclerotic Heart Disease).  If there is no mention of ASHD, coronary insufficiency, coronary or ischemic disease, the answer is generally "No".  **C**HF due to hypertension or associated with an MI, or CHF that is non-chronic or due to non-ischemic reasons is "No".  Arrhythmias are "No".  ASCVD may be taken as "yes" unless the physician is obviously referring to ASCVD in other vascular beds (e.g. brain, leg).  If in doubt, specify, and consult your Surveillance director.  Skip 34 if 32 or 33 is answered "Yes". Asymptomatic CAD that is detected by screening tests requires this question to be answered "yes."

35.    History of valvular disease such as rheumatic heart disease, mitral valve prolapse, valvular stenosis or regurgitation?  Review echocardiogram and cardiac catheterization reports, as well as the history.  The new discovery of valvular disease by echo or angiogram can only be taken as "Yes" if confirmed as long-standing by the physician.  Other valvular diseases include: **Aortic Valve** diseases or disorders, aortic valve incompetence, insufficiency, regurgitation, or stenosis, aortic valve failure; **Mitral valve** diseases, disorders, mitral valve incompetence, insufficiency, regurgitation and stenosis or mitral valve failure; or **Pulmonary valve** diseases, disorders, incompetence, insufficiency, regurgitation and stenosis; and **Tricuspid valve** diseases, disorders, incompetence, insufficiency, regurgitation, stenosis and failure.  In addition, any mention of valvular endocarditis or the above mentioned in an autopsy warrants an answer of "Yes" to history of valvular disease.  Not recorded, trace, trivial, or 1+ regurgitation as seen on ECHO or catheterization is recorded as "No".

History of valvular disease.
a.    May be taken from autopsy.
b.    Valvular sclerosis - generally "No" unless supported by symptoms.
c.    If symptomatic and longstanding, and noted on present admission, "Yes" for history.  If incidental on cath/ECHO, minimal or mild = "No".
d.    IHSS = "Yes".  (Idiopathic hypertrophic subaortic stenosis.)
e.    Redundant valve = "No".
f.    Mitral annular calcification = "Yes".

History of cardiomyopathy.  Types of cardiomyopathies include:  Alcoholic cardiomyopathy, Amyloid cardiomyopathy, Beriberi cardiomyopathy, Congenital cardiomyopathy, Congestive cardiomyopathy, Constrictive cardiomyopathy, Endomyocardial fibrosis, Endomyocardial fibroelastosis, Familial cardiomyopathy, Hypertrophic cardiomyopathy, Idiopathic cardiomyopathy, Ischemic cardiomyopathy, Metabolic cardiomyopathy (Cardiac glycogenosis, Gouty tophi of the heart, and Mucopolysaccharidosis cardiomyopathy).  Additional types of cardiomyopathies may

be listed as:  Nutritional, Obscure Cardiomyopathy of Africa (Becker's Disease), Obstructive, Postpartum, Secondary (Sarcoid or other), Tuberculous or Thyrotoxic cardiomyopathies.  Not recorded is "No".  Hypertensive and dilated cardiomyopathy = "Yes".

36,37.  Coronary bypass or angioplasty.  Has the patient had previous coronary bypass surgery or coronary angioplasty (CABG) before this event (refer to Appendix AA for definitions)?  CABG or angioplasty related to the acute event under consideration should be recorded under 26., not here.  Not recorded is "No".  Record a "Vineberg" as "Yes".  An unsuccessful PTCA in the past is "Yes" for history of angioplasty.  Please record "Yes" for history of angioplasty if there is a history for atherectomy.  Bypass surgery is not necessarily automatic for mitral valve replacement/repair.

38.  a.  Hypertension previous to this admission?  If there is explicit mention of hypertension (high blood pressure) including labile hypertension as being present, answer "Yes".  If hypertension history is explicitly recorded as negative, or "no known cardiac risk factors", answer "No".  If no mention either way, record "U".  Even if the patient is on a medication sometimes used for hypertension (e.g., beta-blocker), but hypertension is not mentioned, answer "U".  "Borderline" or "mild" hypertension = "Yes".  Hypertensive cardiovascular disease = "Yes".  Pulmonary hypertension = "No".

38.  b.  Examine first the discharge summary and diagnoses, then the history and progress notes, for mention of either history of diabetes mellitus prior to or diagnosed during this event.  This includes mention of "diabetes," "diabetes mellitus or DM," "insulin dependent diabetes (mellitus) (IDDM)," "non-insulin dependent diabetes (mellitus) (NIDDM)," "Type I diabetes (mellitus) (DM)," or "Type II diabetes (mellitus)(DM);" it also includes mention of the term "diabetic."  This excludes mention of a history of "glucose intolerance," "hyperglycemia," "hypoglycemia," or "diabetes insipidus" or steriod induced diabetes.

Answer "Yes" if the history includes any mention of the patient taking, either prior to or at discharge, the medication insulin (brand names include:  Humulin, Iletin, Lente, Novolin, Ultralente, or Velosulin Human) or an oral hypoglycemic agent (brand and generic names include: Chlorpropamide, Diabeta, Diabinese, Glipizide, Glucotrol, Glyburide, Glynase Prestab, Micronase, Orinase, Tolazamide, Tolbutamide, or Tolinase; any of these may be referred to as a "sulfonylurea"), even if no explicit mention is made of diabetes.  Do not look at medications given in the hospital, nor at glucose levels during this hospitalization.  Answer "No" if the history explicitly states that the patient has no history of diabetes and there is no mention of diabetes diagnosed during this hospitalization.  Answer "Unknown" if there is no mention of the above terms and no mention of the above medications.

39.  History of stroke prior to this event?  Use the same guidelines for searching the chart as described in the previous MI question (question 32).  This refers to events preceding the present acute illness and hospitalization.  Synonyms for "stroke" may include some of the following:  cortical infarction, intracranial hemorrhage, cerebral thrombosis, cerebral artery occlusion, cerebral infarction, subarachnoid hemorrhage, apoplexy, cerebrovascular accident (CVA), intracerebral hemorrhage.  Answer "Yes" if one or more of the sources makes explicit mention of previous "stroke" or states:  a history of "probable stroke", a history "consistent with stroke", a diagnosis of "CVA vs. TIA", reversible ischemic neurological deficit, or partially reversible ischemic neurological deficit lasting > 24 hours.  Answer "No" if absence of stroke is explicitly mentioned, if symptoms lasted less than 24 hours, if stroke was "possible" or "questionable" only, or if patient had "TIA" only with no documented residual findings.  "No previous cerebrovascular disease" = No.  (This means patient was normal within 24 hours after onset of symptoms and therefore did not have a stroke.)  Answer "U", otherwise, or if the only information about old stroke is from a CT scan without a confirmatory note by the physician. If the physician confirms that CT showed old cerebral infarct then record "yes".  This information is needed to distinguish first events from recurrent events in subsequent data analyses.  Homonymous hemianopia (HH) or left field cut is recorded as "Unknown".  "Denies chronic diseases" is recorded as "Unknown".  If there is good documentation of a patient's history, the abstractor can answer "No", even if no stroke is not explicitly stated.

40.  Stroke within four weeks prior to the event.  Review history for recency of

stroke.

41.    Biomarker availability.  The cardiac biomarkers of interest are total creatinine
       kinase (CK or CPK) and its MB (myocardial band markers of heart) fraction, total
       lactate dehydrogenase (LDH or LD) and its LDH1 and LDH2 fractions, and Troponin I
       and Troponin T.  Refer to laboratory reports.  Do not use biomarker values
       recorded in progress notes unless some or all lab value reports are obviously
       missing.  Were any cardiac biomarkers reported within days 1 to 4 after arrival
       at this hospital or after the in-hospital CHD event?  You must first determine
       when the event occurred, then determine the appropriate biomarkers to review.

42.    a.    Trauma.  Locate laboratory values for biomarker values and note the date
             the biomarkers were done.  Look in the history, etc., for any mention of
             trauma (including any major surgery, CPR, CABG, defibrillation - including
             that for atrial fibrillation, crushing injury, extensive bruising, or
             electrical injury or injections) or rhabdomyolysis (disintegration of
             muscle) within one week prior to the measurement of biomarkers.  These
             major trauma factors are non-ischemic causes for elevated biomarkers.  IM
             injections do represent "trauma".  The interest here is the penetration of
             the muscle and should be answered "Yes".  A Swan Ganz insertion or Swan
             Ganz pacer is a "No" answer. Minor trauma such as scrapes, cuts, nicks,
             and psychological trauma call for an answer of "No".  Dialysis, abdominal
             aortogram, dental surgery also should be answered as "No".  Consider
             "nothing recorded" as "No". A lumbar puncture procedure should be
             considered as "No" trauma.  Seizures = "Yes".  Precordial thump = "Yes".
             Thoracentesis = "Yes".

       Procedures.  Did the patient have any cardiac surgical procedures during the week
       prior to the measurement of biomarkers?  These procedures include invasive
       (cutting) procedures only, such as cardiac cath, angioplasty, etc.  Consider
       "nothing recorded" as "No".  Cardioversion is considered "Yes".  EPS is
       considered "Yes".

       When in doubt, as your Surveillance Director.  Note:  It is preferable, when in
       doubt, to answer "Yes" and specify, so that the true answer can be determined
       later.

42.    b.    If the participant has had trauma, surgical procedures, or rhabdomyolysis,
             select all that apply from the list provided.  If another type of cardiac
             trauma or non-cardiac procedure occurred, specify in the space provided in
             42.b.4 and 42.b.8 respectively.  Included in cardiac procedure (42.b.1) are
             CABG, coronary angioplasty, coronary angiogram, stent placement and any
             procedure that has the potential to cut heart muscle.

42.    c.    Indicate the item number from the biomarker section (CK/CPK, CK-MB, LDH,
             and troponin) corresponding to the first biomarker measurements performed
             after the cardiac procedure, CPR or cardioversion, other cardiac trauma or
             other trauma indicated in 42 a.

             The biomarkers used in the ARIC diagnostic algorithm include CK/CPK, CK-MB,
             LDH, and troponin.  BNP and serum creatinine are NOT used as biomarkers in
             the ARIC algorithm and should not be considered for this answer.

       d.    Hemolytic disease.  Was there any evidence of hemolytic disease in the
             Discharge Summary (examples include:  hemolytic anemia, disseminated
             intravascular coagulation, myelophthisic anemia, nonspherocytic anemia,
             etc.)?  Treat "nothing recorded" as "No".  Also, pernicious anemia,
             macrocytic anemia, normocytic anemia, hypochronic microcytic anemia, anemia
             due to chronic renal failure and microcytic anemia without hemolysis are
             all recorded as "No".

43.    Biomarkers of interest.

       **Total CK**          Synonyms:  CK, CPK, Total CPK, creatine kinase, creatine
                             phosphokinase, CKI
                             It has heart (MB), skeletal muscle (MM), and brain  (BB)
                             fractions.  If MB, MM, and BB are given  separately, add them
                             to obtain total CK.

       **CK-MB**             Synonyms:  CPK-MB, CK-heart fraction

**Total LDH**          Synonyms:  Lactate dehydrogenase, LD

**LDH1** and           Fractions of LDH.  Synonym for LDH1 = heat stable LDH.
**LDH2**               (There are 3 other fractions of LDH 3-5, not of interest.)

**LDH1/LDH2**          Their ratio.  May not be given in some hospitals.

**Troponin I**         Cardiac troponin is a contractile protein not normally found in
                       blood.  Its detection in the circulation is a marker for
                       myocardial cell damage.  Cardiac troponin may be measured in
                       some hospitals and used for diagnosing myocardial injury.  One
                       or both isoforms (I or T) may be measured.  Tropin I may be
                       more specific than CPK-MB and not affected by noncardiac
                       trauma.  Space to record cardiac troponin was added to the HRA
                       Form in May 1997.

**Troponin T**         Most hospitals assay only Troponin I, but T may also be
                       reported.

**BNP**                B-Type Natriuretic Peptide is hormone measured in serum, most
                       commonly as pg/ml.  This peptide is produced by the heart and
                       is elevated in patients with heart failure.  BNP may not be
                       done in some hospitals.

**Serum Creatinine**   Serum Creatinine is an indication of kidney function and is
                       measured most commonly in mg/dl units.

**pro-BNP**            N-terminal prohormone brain natriuretic peptide (pro-BNP) is a
                       cardiac neurohormone specifically secreted from the cardiac
                       ventricles as a response to ventricular volume expansion,
                       pressure overload, and resultant increased wall tension.

Biomarker Units

Biomarker units are variable from hospital to hospital.  Some hospitals may use
different normal ranges within their own laboratory or may even use normal ranges
from another hospital.  Possible units are:

**Total CK**    Units/ml or I.U.

**CK-MB**       Units/ml or I.U.  Special units include: negative/positive,
                absent/present, normal/abnormal, negative/weak positive/positive,
                absent/weak present or trace/present, normal/high normal/abnormal,
                absent/small/moderate/large.

                May also be reported as a percent or decimal proportion of total CK.

**LDH**         Units/l or I.U.

**LDH1, LDH2**  Units/l or I.U.  May also be reported as a percent or decimal
                proportion of total LDH.

**LDH1/LDH2**   Usually expressed as a percentage or decimal proportion.  May be
                reported only as < or $\geq$ 1.0 or 0.8.  May be reported as
                negative/positive or LDH1 vs LDH2, or not flipped/flipped.

**Troponin**    Units/ml or ng/ml.  Special units may also be used and would include
                negative/positive.

**BNP**         **Units pg/ml with one decimal**

**Serum Creatinine  Units mg/dl with one decimal**

Refer to hospital charts or with the hospital lab for information concerning
unusual formats.

Recording Procedure

The first step is to find the range sets in use for hospital days 1-4 and record
the upper limit of biomarkers pertinent to this patient in Q43.  Range Set 1 is
the primary set, Set 2 is the alternate, if one.  Only numbers should go in the

upper limit field.  If not numbers, leave the upper limit field blank and code <u>special units</u>.  Code special units as indicated on the form.  (If there are two different units used for a single biomarker determination, select the more informative unit.)

| Examples (Normal Range) | Upper Limit | Special Unit |
|---|---|---|
| CK-MB (0-10 IU) | 0 0 1 0 . 0 0 0 | |
| CK-MB (Present/Absent) | | 1 |
| LDH1 (0-50% of total LDH) | 0 0 5 0 . 0 0 0 | 3 |
| LDH1/LDH2 (0.0-1.0) | 0 0 1 . 0 0 0 | 6 |
| LDH1/LDH2 (< 100%) | 1 0 0 . 0 0 0 | 5 |
| LDH1/LDH2 (negative/positive) | | 7 |
| Troponin (0.0-1.0) | 0 0 0 . 8 0 | |
| Troponin (negative/positive) | | 1 |

When in doubt, consult the hospital lab.

Occasionally, there may be more than one method used by a hospital to measure a particular biomarker, *e.g.*, a total LDH may be done as part of the admission battery, and also as part of the cardiac biomarker routine, with differing normal ranges with each test.  List them as indicated and use the second range set.  If biomarkers are available in both units and percentages, units are preferred.  Biomarkers recorded for one item number should have been measured at the same time.

If the biomarkers are drawn three times in a day and there is only room to record two sets, select the sets that have the highest total CPK,CK-MB, and /or Troponin values and highest LDH.  Do not mix and match biomarkers drawn at different times unless they are fairly close together (within 1 to 2 hours) and no cardiac procedure took place during that interval.

If a biomarker is not measured, leave the corresponding blocks blank, do not fill boxes with "=".

In cases where an enzyme (LDH, CPK) is reported both as a SMAC profile and as part of a specific isoenzyme battery, record the latter value for the total enzyme.

Note:  Whenever CK fractions (MB, MM, BB) are recorded in international units but not total CK, <u>total CK</u> should be calculated and recorded as the sum of MB + MM + BB.  The upper range for total CK in this case is the sum of the upper ranges for MB + MM + BB.

Troponin has an upper normal range of approximately 0.8 ng/ml.  There may be a semiquantitative assay available that would be negative/positive.

Note:  Troponin levels could be affected by cardiac trauma, such as CATH/CABG.

44. - 56. <u>Patient values</u>.  Determine which biomarkers are available for Days 1-4.  Day 1    is the first calendar day of admission to this hospital or the date of occurrence of in-hospital event.  Day 2 is the next calendar day regardless of the time of the event.  Days 3 and 4 are the succeeding calendar days.  Use date of blood collection,

if recorded on the lab report.  If not recorded, use the date of arrival at or
processing at the lab to determine Days 1-4.  If exact onset of event is unknown, use
best estimate.  (It is better to include biomarkers on form than exclude if dates are
questionable.) Record biomarkers starting at 00:01 on the day of the in-hospital event.

Record values for each biomarker in <u>chronological</u> order.  (The sequential
acquisition number often stamped on the lab reports may be helpful in clarifying
order.)  If no time is listed, assume a time of 12:00 noon.  If no biomarkers
were done on any of days 1-4, indicate this and leave rest of the boxes blank.

If there are a number of biomarkers in Day 1 (more than one) and all are above
normal, select the one with the highest troponin value.  If more than 2 sets on
days 2,3,4, select the 2 sets with the highest troponin value.

For example:

| Date | Time | Troponins Enzymes | Day two Only pick two |
|------|------|-------------------|-----------------------|
| 6/6 | 0622 | 0.10 | 1. 0900   1.12 |
| 6/6 | 0900 | 1.12 | 2. 1700   2.27 |
| 6/6 | 1300 | 0.95 | |
| 6/6 | 1700 | 2.27 | |

Record values accurately, paying careful attention to units and decimal points
for proportions and percents.  LDH1 and LDH2 must be reported on the same
specimen; otherwise the biomarkers recorded in A, C (and E) need not be from the
same specimen.  If there is no value for a given biomarker, leave blank.  Record
LDH1/LDH2 only if it is already computed and recorded in chart.  Do not compute
from LDH1 and LDH2 values.  As indicated in the note in the instructions for the
previous question, <u>do</u> calculate total CPK when all three fractions are given (MB,
MM, BB).

When standard units, I.U., or percents are the biomarker units, and the value is
given with decimal places, record it as it is.    However, if the units are
expressed as a decimal proportions (e.g., LDH1/LDH2 = 0.43), retain the decimal.
A useful rule is that if the value is greater than one, you may round the
decimal places to a whole unit.  If less than one, keep the decimal places.

If a value is reported as a range (e.g., CPK = 20-30, or CPK < 30) record the
higher value (i.e., 30). However, in the case of patient values of troponin
(either I and T), if a value reported is a range (e.g. <0.10) record the range
(i.e. <0.10).  The data entry system will require that the "<" sign be verified,
which the abstractor should do by selecting "Confirm field" from the Problem menu
or pressing CTRL and the "F" key at the same time.  If values for the laboratory
standards for troponin (HRA 43u, 43w, 43y, and 43aa) indicate a range (e.g.
<0.10) record the higher value (i.e. 0.10).  It is not necessary to record the
"<" for the laboratory standards. If a "special value" is used for CK-MB or
LDH1/LDH2, fill in the corresponding letter (A through E) in the box immediately
to the left of the decimal.

If a patient is discharged before day four, put "=" in the boxes for date of
biomarker draw (Item 54a) and leave 54c blank. Complete item 48a and 51a
similarly if patient is discharged prior to day 2 and 3, respectively.

56.ab Record the initial BNP measurement if one is present in the chart in 56.ab.1.
Then record the last measurement available (if more than one) in 56.ab.3.  If
more than two measurements were taken, record the highest measurement of the
remaining measurements in 56.ab.5.

56.ag Record the initial pro-BNP measurement if one is present in the chart in 56.ag.1.
Then record the last measurement available (if more than one) in 56.ag.3.  If
more than two measurements were taken, record the highest measurement of the
remaining measurements in 56.ag.5. If the measurement is greater than 4 digits,
record 9999.9; if the measurement has 4 digits and a greater than sign ">", add 1
to the measurement; if measurement is less than 4 digits and has a greater than
sign, use the ">" before the measurement.

56.ad  Record the initial serum creatinine measurement if one is present in the chart in 56.ad.1. Then record the last measurement available in 56.ad.5.  If more than two measurements were taken, record the second measurement taken after the initial measurement in 56.ad.3.

56.ae  This question should be marked YES if the patient was on kidney dialysis at anytime during this hospitalization or anytime in four weeks prior to his or her hospitalization.

57.  If any 12-lead ECGs were taken during the admission and are available, record "Yes".  (Do not count single-lead or 3-lead rhythm strips.)  If no 12-lead ECGs were taken or none can be found, answer "No" and skip to end.

58.  If at least one 12-lead ECG in the chart is codable, answer "Yes".  If no ECGs are codable, answer "No" and skip to end.

Reasons for uncodable are:

Three or more missing lead(s) (except aVR)

Muscle tremor artifact throughout record that produces possible false initial R's.

Other technical errors such as extreme lack of centering marked clipping which effect the Q-waves, or no calibration mark or calibration off by greater than $\pm$ .5 mm.

When picking ECGs, do not take a 1/2 standard ECG if full standard ECG taken at same time is available.

Note:  Some hospitals with computer ECG databases are no longer printing the ECG standard marks.  If this is encountered, consider the ECG codable unless for another reason it is not.

59.  The "First ECG" (ECGF) is defined as the first codable ECG recorded after arrival regardless of when the event occurred.  Find and code that ECG for Q59-69.  Do not chose an ECG if it is uncodable.

Record the date of the first ECG (ECGF) in Q59.  If time is missing, ECG is uncodable.

59a.  Record time of the first codable ECG. See instruction in Q59 for the selection of the "first codable ECG". ". This question is optional for records that do not need a re-abstraction.

70.  If there are other codable ECGs in the chart answer "Yes".  If not, answer "No" and skip.

71.  Enter the date of the last codable ECG taken during the admission in Q71 and ignore Q72 - 81.

For a one day admit, if there are two ECGs done, use both ECGs, one for ECGF and the other for ECGL.

71a.  Record time of the last codable ECG. See instruction in Q71 for the selection of the "last codable ECG". This question is optional for records that do not need a re-abstraction.

82.  If the event began outside of hospital, day 3 is the third day after arrival, regardless of time of day of admission.  For example, for a patient admitted at 12:01 a.m. on 8/25 day 3 is 8/27.  Similarly, if admitted 11:59 p.m. on 8/25, day 3 is 8/27.  If the event began in the hospital, day 3 is the third day after the event.

If there are codable ECGs (other than ECGL) taken on or after day 3, pick the last codable one on day three or the first available ECG thereafter that is codable be sure to enter the date into Q83 and skip to Item 94.

83.   Date of ECGT:  Record the date of the third ECG.
 Examples on finding ECGT:

```
                         Day 1     Day 2     Day 3     Day 4      Day 8
                                                               (discharged)
         Example A
           8 ECGs        1   2     3   4     5   6       7          8
           taken
                         ECGF                  ECGT              ECGL


                         Day 1     Day 2     Day 3
                                           (discharged)
         Example B
           6 ECGs        1   2     3   4     5   6
           taken
                         ECGF               ECGT ECGL


                         Day 1     Day 2     Day 3     Day 4
                                                     (discharged)


         Example C
           6 ECGs        1   2     3   4     -   -     5   6
           taken
                         ECGF                         ECGT ECGL


                         Day 1                                    Day 8
                                     _____     _____           (discharged)
         Example D
           2 ECGs        1                                         2
           taken
                         ECGF           (No ECGT)                 ECGL



                         Day 1     Day 3     Day 5
         Example E
           6 ECGs        1   2     3   4     5   6
           taken                    Un-
                                   coda-
                         ECGF     ECGT ble         ECGL
```

The following examples for choosing ECGF, ECGL, and ECGT include ones for a) no ECG
until late in the hospital course, b) hospitalizations less than three days, or c) ECGs
taken on less than three days but at least three ECGs are available.  General rule:
Code up to three ECGs if available and codable, even if definitions do not always fit.

```
                           Day 1 ........ Day 7     Day 9        Day 10
                                                             (discharged)
           Example A
           3 ECGs            None            1         2            3
           taken
                                           ECGF      ECGT         ECGL


                         Day 1            Day 2
                                       (discharged)
           Example B
```

```
4 ECGs          1  2  3            4
taken
                ECGF   ECGT        ECGL
```

83a.  Record the time of day 3 ECG.  See instruction in Q83 for the selection of the "day 3 ECG". ". This question is optional for records that do not need a re-abstraction.

94.   Circle the letter(s) corresponding to the 12-lead ECG(s) that will be duplicated and sent to the Minnesota ECG Reading Center for coding.  For example, all three letters will be circled (F.L.T) if at least three ECGs in the chart were codable. Surveillance ECGs that need review should be handled locally by the field center.

Instructions for sending ECGs to Minneapolis ECG Reading Center for Coding

All ECGs are coded by the Minnesota ECG Reading Center.  ECGs should be photocopied and the following protocol should be followed when sending ECGs to Minneapolis:

1.    Staple together the pages belonging to each individual ECG, and label the first page clearly as follows:

      a.    Surveillance ID label
      b.    "Cohort" or "Surveillance" as appropriate
      c.    "ECGF" or "ECGL" or "ECGT" as appropriate
      d.    Date of the ECG
      e.    If 1/2 standard, mark clearly on the ECG.

2.    If an ID has more than one photocopied ECG to be sent, place them in chronologic order and use a paper clip to bind  Cohort ECG's together. Staple Surveillance ECG's.

3.    Send them to the Minnesota ECG Reading Center in batches, each batch containing only cases of one type (i.e. Surveillance or Cohort), and accompanied by a shipping inventory (see Appendix GG) that lists in order of batch contents the Surveillance ID and the number of ECGs sent for that ID.  Lots can be any size (the Reading Center prefers large ones), but you should send them at least monthly.  A sample shipping inventory is attached for you to copy and use.  The batch ID should be of the form ARcEnnnn, where "c" is replaced by the capital letter corresponding to your Field Center and "nnnn" is the sequential batch number, counting all batches you have sent to the Reading Center since the start of the project.  Be sure to keep a copy of each completed batch inventory for your records.  Note that the inventory form provides for exactly 100 IDs, so larger batches can be accommodated by simply inserting the appropriate leading digit(s) in the position ("Pos") columns.

97.   Abstractor Number.  This should be filled in, even when the chart proves to be ineligible.  Double check that your code number has been written in on all the ineligibles since this is a common error.  Include the date.

98.   Date abstract completed.

99.  Source of information abstracted. *(Moved to CHI QxQ item 13)*
     Record "P" if the medical record/s used for abstracting was/were a paper chart/s. If the medical record used for abstracting was/were an electronic chart/s, record "E".  If the medical record/s used for abstracting was/were an electronic chart(s) AND a paper chart, record "B".

## APPENDIX AA

29a.   Cardiac Catheterization - invasive procedure usually performed by a cardiologist
       to visualize heart chambers and contraction.  This procedure is usually
       accompanied by coronary angiography and is generally not performed at the
       bedside.  Include right-sided, left-sided, and both-sided catheterization, but
       not Swan-Ganz catheterization.  (The ICD 9 Codes for cardiac cath include 37.2).

29b.   Coronary Angiography - invasive radiologic procedure to visualize coronary
       arteries.  It is always done with cardiac catheterization, so "cardiac
       catheterization" should also be checked "Yes" when coronary angiography was
       present.  Occasionally, drugs such as streptokinase are given.  References to
       coronary angiography may be found in radiology reports, chart notes,
       cardiologist, or consult notes, etc. (88.5)  This category also includes Digital
       Subtraction Angiography - also for visualizing coronary arteries.  This procedure
       is noninvasive (not done by catheterization) and involves radioisotopes (88.57).

29c.   Coronary Angioplasty - dilation of coronaries via a balloon catheter or laser,
       sometimes done during an acute MI to reperfuse heart. (36.0)  Cardiac
       catheterization is also usually done, so "cardiac catheterization" should also be
       checked "Yes" when coronary angioplasty was present.  It excludes coronary
       atherectomy.

29c2.  Coronary Atherectomy - Involves mechanical (cutting) or thermal removal of an
       atherosclerotic plaque.  It excludes balloon or laser angioplasty (item 29c).
       Cardiac catheterization and coronary angioplasty are almost always done.  Synonym
       = coronary endarterectomy.

29d.   Swan-Ganz Catheterization - insertion of balloon tipped (Swan-Ganz) catheter at
       the bedside into the right side of the heart which can be used to monitor
       pulmonary arterial pressure continuously and pulmonary capillary wedge pressure
       and oxygen of mixed venous blood intermittently.  Includes pacing Swan-Ganz.
       (89.64)

29e.   Echocardiography - a noninvasive procedure, often abbreviated as "echo", used to
       visualize heart valves and chambers.  Synonyms are:  Ultrasound of the Heart; M-
       Mode and Pulsed Doppler Echocardiography. (88.72)

29f.   Coronary Bypass Surgery - open-heart surgery in which a prosthesis or a section
       of blood vessel is grafted onto one of the coronary arteries and connected to the
       ascending aorta to bypass a narrowing or blockage in a coronary artery.  The
       purpose of CABG is to improve blood supply to the heart, to reduce its workload
       and to relieve the pain of angina.  (36.1)

29g.   Streptokinase, urokinase, eminase, hirudin, hirulog, anistreplase or tissue
       plasminogen activator (TPA) are coronary reperfusion agents (See Appendix BB).
       These are drugs given during the early stages of an MI to dissolve coronary
       thrombus or clots.  The drugs may be administered intracoronary or in a
       peripheral intravenous solution.  If given intracoronary, coronary angiography is
       almost always done, so item (b) should be marked.  If given intravenously, answer
       (h) with "Yes", but do not mark (b).  (99.29)

29i.   Aortic Balloon Pump - a mechanical procedure used in severe heart failure or
       shock or post surgery.  Aortic balloon pumps are also called counterpulsation
       pumps, balloon counterpulsation pumps, intraaortic pumps, AVCO System 7, 10,
       Datascope System 80, IABP and Datscope, and Percor IABP.  (37.6)

29j.   Radionuclide Scan of Heart - a radioisotope procedure to a) visualize heart
       contractility and estimate ejection fraction, b) estimate infarct size, or c)
       gauge myocardial perfusion.  Radioisotopes include thallium (Tl201), technetium
       pyrophosphate (Tc99m).  Procedures include "heart scan", MUGA (multigated
       equilibrium blood pool imaging), radionuclide angiography, ejection fraction
       radionuclide scan, thallium scan, SPECT imaging, infarct (MI) scan, positron
       imaging, etc.  Digital subtraction angiography is "No" and is instead recorded
       under coronary angiography, above.  These tests would be recorded in radiology or
       nuclear medicine reports or as procedure codes. (92.05)  Include cardiolite
       thallium and persantine thallium.  Include thallium exercise test in both 29k and
       29n.

29m.    MRI scan of heart - magnetic resonance imaging of the heart.

29n.    Exercise stress test - Test of heart function with stationary bike, treadmill or
        handgrip while monitoring electrocardiogram.  Sometimes includes injection of
        thallium, a radioactive agent that indicates adequacy of blood flow to heart
        muscle with and without exercise.  Also called stress test, treadmill or stress
        thallium.  Include thallium exercise test in both 29k and 29n.

29o.    Holter monitoring - Continuous monitoring of heart rhythm for several hours while
        patient performs usual activities.  Also called Holter and ambulatory ECG.

29p.    Pacemaker - A pacemaker is an artificial device designed to reproduce or regulate
        the rhythm of the heart.  It is implanted in the body of the patient, is battery-
        driven, is usually triggered or inhibited to modify output by sensing intracardiac
        potential in one or more cardiac chambers, and may also have antitachycardia pacing
        function.  Also includes placing of pacing wires or a temporary or permanent
        pacemaker. Synonyms include single-chamber pacemaker, dual-chamber pacemaker,
        biventricular pacemaker, cardiac resynchronization therapy, pacemaker wire, DDD
        pacemaker, VVI pacemaker.

29p.2.  Implanted defibrillator.  This refers to an implantable cardioverter defibrillator
        (ICD) or automatic implantable cardioverter defibrillator AICD.  This is an
        artificial device implanted in the body of the patient to detect potentially-fatal
        fast arrhythmias and to shock patients out of these rhythms (to prevent "sudden
        cardiac death" or an "arrhythmic death").

29p2c   Coronary CT - CT scan of the heart, coronary calcium assessment by helical CT or
        EBCT.

29q.    Other procedures might include aortic aneurismectomy, cardiac transplant,
        pericardiocentesis, electrophysiology (EP) studies.  etc.

**APPENDIX BB**

26a, 29g,h   <u>Reperfusion Agents</u>

| <u>Generic</u> | <u>Trade</u> |
|---|---|
| Anisoylated plasminogen-streptokinase | Abbokinase |
| Activator Complex (APSAC) | Activase |
| Anistreplase | Alteplase |
| APSAC (anisoylated plasminogen- | Eminase |
| streptokinase activator complex) | Kabikinase |
| | Refludan |
| | Refulan |
| | |
| Bivalirudin | Argatroban |
| | Angiomax |
| | |
| Hirudin | Retavase |
| Hirulog | |
| Lepirudin | Streptase |
| Reteplase | TNKase |
| Streptokinase | |
| Tenecteplase | |
| Tissue plasminogen activator (TPA) | |
| | |
| Urokinase | |

31a.   <u>Nitrates</u>

| <u>Generic</u> | <u>Trade</u> |
|---|---|
| | Anginabid |
| | BiDil |
| Isosorbide dinitrate | Cardilate |
| Isosorbide mononitrate | Deponit NTG Film |
| Nitrates | Dilatrate |
| Nitrites | Duotrate |
| | Imdur |
| Nitroglycerin | I.S.D. |
| | Ismo |
| NTG | Iso-Bid |
| | Isochron |
| Trinitroglycerine | Isordil |
| | Isosorbdin |
| | Isosorbide |
| | Isosorb mono |
| | Isotrate |
| | Minitran |
| | Mi-trates |
| | Monoket |
| | Nitrek |
| | Nitro |
| | NitroBid |
| | Nitrocap |
| | Nitrocine |
| | Nitrocot |
| | Nitrodisc |
| | NitroDur |
| | Nitrogard |
| | Nitroglyn |
| | Nitrol |
| | Nitrolin |
| | Nitrolingual |
| | Nitronal |
| | Nitrong |
| | Nitro-par |
| | Nitroquick |
| | Nitrorex |
| | Nitrospan |
| | Nitrostat |
| | Nitrotab |

Nitro-time
Nitro-transderm
Nitrotransdermal
NTG-spray
N.T.S.
Pentylan
Peritrate
Sorbitrate
Transderm
Transdermal NTG
Tridil

31b.  Calcium Channel Blockers

| Generic | Trade |
|---|---|
| Amlodipine | Adalat |
| | Afeditab |
| | Amlod |
| | Azor (contains an angiotensin II inhibitor) |
| Bepridil | Caduet (also contains a lipid lowering med) |
| Clevidipine | Cleviprex |
| Diltiazem | Calan |
| Felodipine | Cardene |
| Isradipine | Cardizem |
| | Cartia XT |
| Mibefradil | Covera-HS |
| Nicardipine | Dilacor XR |
| | Diltia |
| Nifedipine | DynaCirc |
| | Exforge (also contains angiotensin II inhibitor) |
| Nimodipine | Isoptin |
| Nisoldipine | Lexxel (also contains ACE inhibitor) |
| | Lotrel (also contains ACE inhibitor) |
| Verapamil | Nifedical XL |
| | Nimotop |
| | Norvasc |
| | Plendil |
| | Posicor |
| | Procardia |
| | Sular |
| | Tarka (also contains ACE inhibitor) |
| | Taztia XT |
| | Teczem (also contains ACE inhibitor) |
| | Tiamate |
| | Tiazac |
| | Vascor |
| | Verelan |

31c. Beta-Blockers

| Generic | Trade |
|---|---|
| Acebutolol | Betachron |
| | Betapace |
| Atenolol | Bisopro fum |
| | Bisoprol fum |
| | Blocadren |
| Betaxolol | Brevibloc |
| Bisoprolol | Cartrol |
| Carteolol | Coreg |
| Carvedilol | Corgard |
| Esmolol | Corzide |
| Labetalol | Inderal |
| Metoprolol | Inderide |
| Nadolol | Innopran XL |
| Nibivolol | Bystolic |
| Penbutolol | Kerlone |
| Pindolol | Levatol |
| Propranolol | Lopressor |

| | |
|---|---|
| Sotalol | Normodyne |
| Timolol | Normozide |
| Timolol eye drops = "No" | Sectral |
| | Tenoretic |
| | Tenormin |
| | Timolide |
| | Toprol XL |
| | Trandate |
| | Visken |
| | Zebeta |
| | Ziac |

31d.  Digitalis

| Generic | Trade |
|---|---|
| Digitalis glycoside | Cedilanid |
| Digitoxin | Crystodigin |
| Digoxin | Digitek |
| | Lanoxicaps |
| | Lanoxin |

31g.  Aspirin (These are not all aspirin compounds, but likely formulations used for
            heart conditions.)

| Generic | Trade |
|---|---|
| Acetylsalicylic Acid | Aggrenox |
| Aspirin | Alka-Seltzer |
| ASA | Anacin |
| | Arthritis Pain Formula |
| | A.S.A. Enseals |
| | Ascriptin |
| | Aspergum |
| | Baby Aspirin |
| | Bayer (Aspirin) |
| | Buffaprin |
| | Buffered Aspirin |

31g.  Aspirin (continued)

| Generic | Trade |
|---|---|
| | Bufferin |
| | Buffex |
| | Buffinol |
| | CAMA Arthritis Pain Reliever |
| | Easprin |
| | Ecotrin |
| | Empirin |
| | Excedrin |
| | Gelpirin |
| | Genprin |
| | Halfprin |
| | Magnaprin |
| | Measurin |
| | Norwich |
| | St. Joseph |
| | Verin |
| | Wesprin Buffered |
| | ZORprin |

31h.  ACE or Angiotensin II Inhibitors

| Generic | Trade |
|---|---|
| Aliskiren** | |
| Benazepril | Accupril |
| Cadesartan* | Accuretic |
| Captopril | Aceon |
| Enalapril | Altace |
| Enalaprilat | Atacand* |
| Eprosartan * | Avalide* |

```
        Fosinapril                      Avapro*
        Irbesartan*                     Benicar
                                        Capoten
        Lisinopril                      Capozide
        Losartan*                       Cozaar*
        Moexipril                       Diovan*
        Olmesartan*                     Azor (contains a calcium channel blocker)
                                        Exforge (also contains Ca channel blocker)
        Perindopril                     Hyzaar*
        Quinapril                       Lexxel (also contains Ca channel blocker)
        Ramipril                        Lotensin
        Telmisartan*                    Lotrel (also contains Ca channel blocker)
        Trandolapril                    Mavik
        Valsartan*                      Micardis*
                                        Monopril
                                        Prinivil
                                        Prinzide
                                        Tarka (also contains Ca channel blocker)
                                        Teczem (also contains Ca channel blocker)
                                        Tekturna**
                                        Teveten*
                                        Uniretic
                                        Univasc
                                        Vaseretic
                                        Vasotec
                                        Zestoretic
                                        Zestril
        *ATII inhibitor
        **renin inhibitor
```

31i.  **Intraveneous Heparin/Low Molecular Weight Heparin**

| Generic | Trade |
|---|---|
| Anisindione | Arixtra |
| Ardeparin | Fragmin |
| Dalteparin | Heparin |
| Danaparoid sodium | Heparin Sulfate |
| Enoxaparin | Lovenox |
| Fondaparinux | Miradon |
| Heparin | Normiflo |
| Heparin Sulfate | Orgaran |
| Tinzaparin | Innohep |

31j.  **Antiplatelet Agents (non-aspirin)**

| Generic | Trade | Investigational |
|---|---|---|
| Abciximab | Aggrastat | Orofiban |
| Cilostazol | | |
| Clopidogrel | Aggrenox | |
| Dipyridamole | Flolan | |
| Epoprostenol | Integrilin | |
| Eptifibatide | Persantine | |
| Ticlopidine | Plavix | |
| Tirofiban | Pletal | |
| | ReoPro | |
| Xemilofiban | Ticlid | |

31l.  Lipid Lowering Medications

Generic                            Trade

Abitrate
Advicor
Altocor
Altoprev
Antara
Atorvastatin
Atromid

Generic                            Trade

Baycol
Bezafibrate
Bezalip
Caduet (also contains a calcium channel blocker)
Cerivastatin
Cholestabyl
Cholestyramine
Cholox
Choloxin
Cholybar
Clofibrate
Colesevelam
Colestid
Colestipid
Colestipol
Colestrol
Crestor
Cuemid
Dextrothyroxine sodium
Endur-acin
Ezetimibe
Fenofibrate
Fenoglide
Fluvastatin
Gemfibrozil
Lescol
Lestid
Lipitor
Lismol
Lofibra
Locholest
Lopid
Lorelco
Lovastatin
                                   Lovaza
Mevacor
Nia-bid
Niacels
Niacin
Niacinamide*
Niacinol*
Niacor
Niac
Niaspan*
Niatab*
Nico-400
Nicobid
Nicolar
Nicotinamide*
Nicotinex
Nicotinic acid*
Omacor

Pravachol
Pravastatin
Prevalite
Probucol
Quantalan
Questran
Questran light
Rosuvastatin
Simvastatin
Slo-niacin
Tricor
Triglide
Vitamin b-3
Vytorin
WelChol
Zetia
Zocor

*For the Q by Q:  The niacin-related products marked with an * may be used for nutritional supplementation or lipid-lowering.  Try to determine use for lipid-lowering from the record.

**APPENDIX CC**

HOSPITAL CODES

| Forsyth County | Name | Hospital Type | Notes |
|---|---|---|---|
| 11 | North Carolina Baptist | Teaching | |
| 12 | Forsyth County Memorial | Non teaching | |
| 13 | Medical Park | Non Teaching | |
| 96 | Hospital outside study area | | |

| Jackson | | | |
|---|---|---|---|
| 21 | University of Mississippi Med Center | Teaching | |
| 22 | Veterans Administration Hospital | Teaching | |
| 23 | St. Dominic's Hospital | Non teaching | |
| 24 | Central Mississippi Med Center | Non teaching | |
| 25 | Mississippi Baptist Hospital | Non teaching | |
| 26 | River Oaks Hospital | Non teaching | |
| 27 | Madison County Med Center | Non teaching | JHS only |
| 28 | Rankin Medical Center | Non teaching | JHS only |
| 97 | Hospital out of study area | | |

| Minneapolis | | | |
|---|---|---|---|
| 30 | Abbott-Northwestern | Teaching | |
| 31 | Riverside Medical Center | Teaching | |
| 32 | Fairview-Southdale | Non teaching | |
| 33 | Fairview- Ridges | Non-teaching | Closed |
| 34 | Hennepin County Med. Center | Teaching | |
| 35 | Mercy Hospital | Non teaching | |
| 36 | Methodist Hospital | Teaching | |
| 37 | Metropolitan | Non teaching | Closed |
| 38 | Midway | Non teaching | Closed |
| 39 | Mt. Sinai | Non teaching | Closed |
| 40 | North Memorial | Teaching | |
| 41 | St. Paul Ramsey | Non teaching | Closed |
| 42 | St. John's Northeast | Non teaching | Closed |
| 43 | St. Mary's | Non teaching | Closed |
| 44 | Unity | Non teaching | |
| 45 | University of Minnesota Hospital | Teaching | |
| 46 | VA Hospital | Teaching | |
| 47 | Fairview | Non teaching | |
| 48 | Phillips Eye Institute | Non Teaching | |
| 98 | Hospital out of study area | | |

| Washington Co. | | | |
|---|---|---|---|
| 51 | Washington County Hospital | Non teaching | |
| 52 | Western Maryland Center | Non Teaching | |
| 53 | VA Medical Center, WV | Non Teaching | |
| 54 | University of Maryland | Teaching | |
| 55 | Frederick Memorial | Non teaching | |
| 56 | Johns Hopkins Hospital | Teaching | |
| 57 | Washington Hospital Center | Non Teaching | |
| 58 | George Washington University | Teaching | |
| 59 | Georgetown University | Teaching | |
| 60 | Saint Joseph Medical Center | Non teaching | |
| 61 | Washington Adventist | Non teaching | |
| 62 | Sinai Hospital | Non teaching | |
| 63 | Union Memorial | Non Teaching | |
| 99 | Hospital out of study area | | |

**APPENDIX DD**

|          | Symptoms |  | Answers Q23a | Q23b | Q25a | Q25b |
|----------|----------|--|------|------|------|------|

A.  9/1      First episode of acute, severe chest    Y    H    Y    9/2
             pain, 8 AM

    9/2-4     Many daily, less severe episodes of
              chest pain; none more prominent

    9/5      Admission, 10 AM

    Explanation:  The first pain seems most prominent (use judgement
    based on chart).  Although onset of first pain was 9/1, the first within 72 hours
    was on 9/2.

B.  9/1      Collapse, no mention of pain, 8 AM     Y    B    N    -

    9/1      Admission, 9 AM

    Explanation:  No chest pain occurred.

C.  9/1      First acute, severe chest pain, 8 AM,    Y    A    Y    9/5
              resolved quickly

    9/2-4     No symptoms

    9/5      Second acute, severe chest pain, 8 AM,
              did not resolve

    9/5      Admission, 8:30 AM

    Explanation:  Second pain is most prominent and is the event.

D.  9/1-4    Chronic anginal pain, 8 AM every day    Y    B    Y    9/5

    9/5      Different, severe pain, 8 AM

    9/5      Admission, 9:30 AM

    Explanation:  9/5 pain is the event.

E.  9/1      Admitted for hernia repair         N    -    Y    9/3

    9/3      First acute chest pain

    Explanation:  In-hospital event.

|          | Symptoms |  | Answers Q23a | Q23b | Q25a | Q25b |
|----------|----------|--|------|------|------|------|

F.  9/1      Indigestion, 8 AM             Y    H    Y    9/2

          Settles in chest, 10 AM

    9/2-4     Stays in bed with vague chest pain
              which gradually gets worse

    9/5      Admission, 10 PM

    Explanation:  Clearest onset is AM 9/1.  If pain was continuous,
    first pain within 72 hours of admission was 9/2 at 10PM.

G.  9/1      Marked fatigue and shortness of      Y    G    N    -

breath, 8 AM

9/2      Admitted after MD does office ECG, 8 AM

<u>Explanation</u>:  Marked fatigue and shortness of breath can be acute
cardiac symptoms.  Never had chest pain.

**APPENDIX EE**

SOUNDEX


Soundex is a system of converting names and addresses to a short abbreviation.  It is used in ARIC abstracting when the hospital, for confidentiality reasons, will not let the patient name or address be abstracted verbatim.  In that case it is often acceptable to record the Soundex code for the patient's name and address.

The following section is arranged in three parts.  Part A discusses Soundex coding for surnames.  Part B discusses Soundex coding for given names.  Part C discusses coding for address.

**APPENDIX FF**

ARIC SURVEILLANCE ECG SHIPPING INVENTORY

Batch: _____        Date:_____        Type of Case:_____

| Pos | Surv.ID | #ECG | Pos | Surv.ID | #ECG | Pos | Surv.ID | #ECG | Pos | Surv.ID | #ECG |
|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|
| 01 | _____ | ____ | 26 | _____ | ____ | 51 | _____ | ____ | 76 | _____ | ____ |
| 02 | _____ | ____ | 27 | _____ | ____ | 52 | _____ | ____ | 77 | _____ | ____ |
| 03 | _____ | ____ | 28 | _____ | ____ | 53 | _____ | ____ | 78 | _____ | ____ |
| 04 | _____ | ____ | 29 | _____ | ____ | 54 | _____ | ____ | 79 | _____ | ____ |
| 05 | _____ | ____ | 30 | _____ | ____ | 55 | _____ | ____ | 80 | _____ | ____ |
| 06 | _____ | ____ | 31 | _____ | ____ | 56 | _____ | ____ | 81 | _____ | ____ |
| 07 | _____ | ____ | 32 | _____ | ____ | 57 | _____ | ____ | 82 | _____ | ____ |
| 08 | _____ | ____ | 33 | _____ | ____ | 58 | _____ | ____ | 83 | _____ | ____ |
| 09 | _____ | ____ | 34 | _____ | ____ | 59 | _____ | ____ | 84 | _____ | ____ |
| 10 | _____ | ____ | 35 | _____ | ____ | 60 | _____ | ____ | 85 | _____ | ____ |
| 11 | _____ | ____ | 36 | _____ | ____ | 61 | _____ | ____ | 86 | _____ | ____ |
| 12 | _____ | ____ | 37 | _____ | ____ | 62 | _____ | ____ | 87 | _____ | ____ |
| 13 | _____ | ____ | 38 | _____ | ____ | 63 | _____ | ____ | 88 | _____ | ____ |
| 14 | _____ | ____ | 39 | _____ | ____ | 64 | _____ | ____ | 89 | _____ | ____ |
| 15 | _____ | ____ | 40 | _____ | ____ | 65 | _____ | ____ | 90 | _____ | ____ |
| 16 | _____ | ____ | 41 | _____ | ____ | 66 | _____ | ____ | 91 | _____ | ____ |
| 17 | _____ | ____ | 42 | _____ | ____ | 67 | _____ | ____ | 92 | _____ | ____ |
| 18 | _____ | ____ | 43 | _____ | ____ | 68 | _____ | ____ | 93 | _____ | ____ |
| 19 | _____ | ____ | 44 | _____ | ____ | 69 | _____ | ____ | 94 | _____ | ____ |
| 20 | _____ | ____ | 45 | _____ | ____ | 70 | _____ | ____ | 95 | _____ | ____ |
| 21 | _____ | ____ | 46 | _____ | ____ | 71 | _____ | ____ | 96 | _____ | ____ |
| 22 | _____ | ____ | 47 | _____ | ____ | 72 | _____ | ____ | 97 | _____ | ____ |
| 23 | _____ | ____ | 48 | _____ | ____ | 73 | _____ | ____ | 98 | _____ | ____ |
| 24 | _____ | ____ | 49 | _____ | ____ | 74 | _____ | ____ | 99 | _____ | ____ |
| 25 | _____ | ____ | 50 | _____ | ____ | 75 | _____ | ____ | 00 | _____ | ____ |

**APPENDIX GG**
HRA
Table of Response by Type of Past History

| | Q. 32 MI | Q. 33 angina | Q. 38 HTN | Q. 38b Diabetes | Q. 39 STR |
|---|---|---|---|---|---|
| No prior IHD/CHD | N | N | U | U | U |
| Previously well | N | N | N | N | N |
| No heart disease | N | N | U | U | U |
| No adult diseases | N | N | N | N | N |
| Negative medical history | N | N | N | N | N |
| No cardiovascular disease | N | N | U | U | U |
| No cardiac problems/history | N | N | U | U | U |
| No neurological problems | U | U | U | U | N |
| No major medical problems | N | N | U | N | N |
| General health quite good | N | N | U | N | U |
| Denies medical problems | N | N | N | N | N |
| In good health | N | N | U | N | N |
| Negative health history | N | N | N | N | N |
| In general good health | N | N | U | N | N |
| Generally in good health (vague) | U | U | U | U | U |
| Previous heart disease (vague) | U | U | U | U | U |
| No prior history of cardiac problems | N | N | U | U | U |
| No previous medical history | N | N | N | N | N |
| No major illnesses | N | N | U | N | N |
| Unremarkable | N | N | U | N | N |
| Essentially unremarkable | U | U | U | U | U |
| No known cardiac risk factors | N/A | N/A | N | N | N/A |
| Denies chronic diseases | U | U | U | N | U |
| No definite cardiac history (vague) | U | U | U | U | U |
| Healthy | N | N | U | N | N |

**APPENDIX HH**
HRA
Center Specific Health Insurance Lists for Question 9.b.

## Forsyth

**1) Prepaid insurance or health plan, such as BC/BS or HMO,**

BCBS MEDICARE PRIME
PARTNERS MCARE CH
MEDCOST PREF
UNITED NC MCARE
UNITED HC INDEM
BCBS BLUE CARE
CIGNA NC INC-HMO

**2) Medicare,**

MEDICARE OUTPT
MEDICARE PROFEES
MEDICARE INPT 2003

**3) Medicaid,**

MEDICAID NC
CAROLINA ACCESS MEDICAID

**4) Other.**

SELF PAY - NO INSURANCE

## Jackson

**1) Prepaid insurance or health plan, such as BC/BS or HMO,**

LIBERTY MUTUAL
UNITED HEALTHCARE
BLUE CROSS BLUE SHIELD
BENEFIT PLANNERS
MUTUAL OF OMAHA
FORTIS BENEFIT
STATE OF MS

**2) Medicare,**

MEDICARE

**3) Medicaid,**

MEDICAID

**4) Other.**

CHAMPUS

## Minneapolis

**1) Prepaid insurance or health plan, such as BC/BS or HMO,**

BLUE CROSS/BLUE SHIELD
AARP
HEALTH PARTNERS
PATIENT CHOICE
MEDICA
AETNA
PREFERED ONE
MHP

**2) Medicare,**

U CARE MN

**3) Medicaid**

U CARE MN

**4) Other.**

TRI CARE
USAA
CHAMPUS
VA

## Washington County

1) Prepaid insurance or health plan, such as BC/BS or HMO,


AARP (UNITED HEALTHCARE)
ACORDIA NATIONAL
ACORDIA NATIONAL BEECH ST
ADMINSTRATIVE SERVICE CONSULT
ADVENTIST RISK MANAGEMENT
AETNA
AETNA HMO
AETNA INSURANCE (BELL ATLANTIC)
AETNA US HEALTHCARE
ALLIANCE
ALLIANCE BLUE CROSS (MISSOURI)
ALLIANCE PPO
ALLSTATE INS CO (MVC ONLY)
ALLSTATE INSURANCE COMPANY
AMERICAN POSTAL WORKERS (MED)
AMERICAN PSYCH SYS HEALTH CARE
AMERIHEALTH ADMIN
ANTHEM BC KENTUCKY
ANTHEM BC OHIO
ANTHEM BC VIRGINIA
ANTHEM BLUE CROSS OF VA
BEECH STREET
BEECH STREET ACORDIA
BENEFIT PLAN ADMIN
BLACK LUNG PROGRAM
BLUE CROSS (PEBFT)
BLUE CROSS MARYLAND
BLUE CROSS MASSACHUSETTS
BLUE CROSS NAT CAP AREA
BLUE CROSS NATIONAL ACCT
BLUE CROSS NATIONAL ACCT (GM)
BLUE CROSS NATIONAL POS
BLUE CROSS NORTHEAST PA
BLUE CROSS NY/ROCHESTER
BLUE CROSS OF ALABAMA
BLUE CROSS OF ARKANSAS
BLUE CROSS OF CALIFORNIA
BLUE CROSS OF CENT NY
BLUE CROSS OF CENTRAL NEW YORK
BLUE CROSS OF CT ANTHEM
BLUE CROSS OF DELAWARE
BLUE CROSS OF GEORGIA
BLUE CROSS OF ILLINOIS
BLUE CROSS OF KANSAS
BLUE CROSS OF MICHIGAN
BLUE CROSS OF MINNESOTA
BLUE CROSS OF NOTH CAROL
BLUE CROSS OF NORTH CAROLINA
BLUE CROSS OF RHODE ISLAN
BLUE CROSS OF RHODE ISLAND
BLUE CROSS OF ROCHESTER AREA
BLUE CROSS OF SOUTH CAROLINA
BLUE CROSS OF TENNESSEE
BLUE CROSS OF TEXAS
BLUE CROSS OF WESTERN NEW YORK
BLUE CROSS OF WESTERN PEN
BLUE CROSS OF WESTERN PENNA
BLUE CROSS OF WISCONSIN
BLUE CROSS OF OREGON REG
BLUE CROSS OF OTHER I
BLUE CROSS OF SOUTH CARO
BLUE CROSS OF SOUTH CAROLINA
BLUE SHIELD OF CALIFORNIA HMO
CAPITAL BLUE CROSS
CAREFIRST BLUE CHOICE
CAREFIRST BLUE CROSS

CAREFIRST BLUE CROSS POS
CAREFIRST BLUE CROSS PPO
CAREFIRST BLUE PREFERRED
CAREFIRST BLUE PREFERRED PPO
CAREFIRST FEDERAL BC
CBSA
CHAMPVA CENTER
CHESTERFIELD RESOURCES
CIGNA HEALTHCARE
CIGNA HEALTHCARE EPO
CIGNA HEALTHCARE HMO
CIGNA HEALTHCARE IND
CIGNA HEALTHCARE NET
CIGNA HEALTHCARE POS
CIGNA HEALTHCARE PPO
CIGNA HEALTHCARE IND
CLAIM MANAGEMENT SERV
CMS (MCI/MCTC/RCI) CLAIMS DEPT
COLUMBIA FREESTATE HEALTH PLN
COMMERCE BENEFITS GROUP INC
COMMERCIAL INSURANCE/OTHER 1
COMMERCIAL INSURANCE/OTHER 2
COMP I CENTER
COMPENSATION/WC HEALTH SYSTEM
CORESOURCE
CORESOURCE JACKSON
DEPARTMENT OF THE NAVY
DEPT HEALTH AND MENTAL HY
EDUCATORS HEALTH PARTNERS
EMPIRE BLUE CROSS
EMPLOYERS HEALTH PROGRAMS
EXCELLUS BLUE CROSS UTICA REG
EQUITABLE INSURANCE (RETIRES)
ERIE INSURANCE COMPANY
FIDELITY BENEFIT ADMIN
FIRST ADMINISTRATORS
FIRST HEALTH
FIRST PRIORITY
FORTIS INSURANCE CO
GEICO INSURANCE COMPANY
GENERAL AMERICAN
GREAT WEST LIFE
GUARDIAN
HARRINGTON BENEFIT SVS
HMO/OTHER
HOSPICE OF THE PANHANDLE, INC.
HOSPICE OF WASHINTON COUNTY
INFORMED
INTEGRATED BEHAVIORAL HEALTH
KAISER FOUNDATION HEALTH
KEY BENEFIT ADMINISTRATORS
KIDNEY DISEASE PROGRAM
HIGHMARK BLUE CROSS
HORIZON BLUE CROSS
INDEPENDENCE BLUE CROSS
KEYSTONE HEALTH PLAN EAST
LBA HEALTH PLANS
MAGELLEN
MAIL HANDLERS BEN PLAN
MALCOLM GROVE MEDICAL CENTER
MAMSI LIFE AND HEALTH
MARYLAND HEALTH INSURANCE PLAN
MARYLAND BC - POINT OF SERVICE
MARYLAND BLUE CROSS/WCBOE
MCCREW CARE CENTRAL
MDIPA
MEGA LIFE AND HEALTH
MENNONITE MUTUAL AID
METRAHEALTH
MOUNTAIN STATE BLUE CROSS
MUTUAL OF OHAMA

NATIONWIDE INSURANCE COMPANY
NATIONWIDE INSURANCE ENTERPRIS
NCAS
ONE HEALTH
OPTIMUM CHOICE
PENNSULVANIA BLUE SH
PRINCIPAL LIFE
PRINCIPAL LIFE INS CO
PROGRESSIVE AUTO INSURANCE
QUAD/MED CLAIMS
REGENCE LIFE AND HEALTH INS CO
SENTARA/VETRI SYSTEMS
STAR ADMINISTRATIVE SVS
STATE FARM AUTO INSURANCE
STATE FARM MEDICAL
STATTON FURNITURE (UFW)
STRATEGIC RESOURCE CO
THE LOOMIS COMPANY
TRANSPLANT RESOURCE CENTER
TRICARE PRIME (HAGER PARK)
TRICARE PRIME (MONOCACY VALLEY)
TRIGON BLUE CROSS (VIRGINIA)
TRISTATE HEALTH PARTNERS/CHP
UNICARE
UNITED
UNITED AMERICAN INSURANCE
UNITED FURNITURE WORKERS
UNITED HEALTCARE
UNITED HEALTCARE MID ATLANTIC
UNITED HEALTCARE OF MID-ATLAN
USE FOR MOTOR VEHICLE INS ONLY
USE FOR MVA ONLY
VA DEPT OF VETRANS AFFAIRS
VA MEDICAL CENTER
VALLEY COMMUNITY HEALTHCARE
WASHINGTON CO DETENTION CENTER
WASHINGTON COUNTY HEALTH DEPT
WAUSAU BENEFITS


2) Medicare,

MEDICARE PART A AND B
MEDICARE PART B
OTHER MEDICARE HMO PLANS
TRICARE PRIME MEDICARE HMO




3) Medicaid,


ACS STATE HEALTHCARE
AMERICAID COMMUNITY CARE
MAPA
MARYLAND HEALTH PARTNERS
MARYLAND MEDICAID FED
MARYLAND PHYSICIAN CARE
MEDICAID OTHER
OTHER MEDICAID HMO PLANS
PRIORITY PARTNERS MCO
UNITED HEALTCARE MA
WVA MEDICAID/UNISYS
WVA WELFARE/CONSULTEC.INC.


4) Other.

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ACE USA
CHAMPUS TRICARE REG 1
CHAMPUS TRICARE REG 2
CHAMPUS TRICARE REGION 2
COMPENSATION/WC HEALTH SYSTEM
DOT FOODS
ERIE INSURANCE GROUP
FOOD LION, INC (WORKERS COMP)
INJURED WORKERS INSURANCE FUND
PMA MANAGEMENT CORPORATIN
SELF PAY
TRICARE PRIME RETIRED
WORKMENS COMPENSATION
WORKMENS COMPENSATION/OTHER
WVA WORKMENS CONPENSATION FUND
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