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SECTION A: INTRODUCTION

A.1 Adult Changes in Thought (ACT) Chart Review Project description

A.1.1 Purpose

Systematically collect historical information on ACT participants to transform medical record data into a format useful for epidemiological studies.

A.1.2 Overview

- Chart abstraction is performed by chart abstractors who review medical records and enter specific pieces of data directly into an Access database.
- Abstraction is from Group Health, later Kaiser Permanente Washington, chart (paper and electronic medical records) information only. Additional data are collected separately from electronic pharmacy, laboratory, and enrollment data.
    - Note: Group Health Cooperative (GHC) became Kaiser Permanente Washington (KPWA) in ~2017. Any reference to GH or GHC also means KPWA.
- Abstraction is performed by Kaiser Permanente Washington Health Research Institute (KPWHRI) Research Specialists who are certified in the study protocol.
- The Manual of Operations is reviewed and updated regularly by the lead abstractor or project manager. The Manual of Operations Change Log is located here: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Question Logs\ACT_Chart_Rev_Qx_Log_20091204.xls
- This chart review project is being conducted in multiple phases by cohorts of interest:
    1. Charts of ACT participants who are deceased with a completed autopsy.
    2. Charts of ACT participants who are deceased and previously took insulin (as reported in GH pharmacy records).
    3. Charts of ACT participants who are not part of the autopsy or insulin group in birth order, from earliest birth date to most recent.
    4. Charts of ACT participants who used antihypertensive medications.

A.2 Timeline

Stage 1	2/2005 – 6/2007: • Initial codebook draft developed, early chart abstraction
Stage 2	6/2007 – 10/2007: • First 30 charts abstracted blood pressure and antihypertensive medications only. • Validation samples • R01 grant submission by Paul Crane 10/07
Stage 3	10/2007 – 5/2008

	• Additional reviews, changes to database • Focused on diabetes mellitus and atrial fibrillation • Grant Submission 3/2008 • Resubmission of R01 6/2008
Stage 4	6/2008 – 3/2009 • Decision to streamline data collection and shorten abstraction time • In-depth review of variables and scientific merit of each • Complete revamp of variables list • Major restructuring of database • New database piloted • Codebook refined
Stage 5	11/2009 – 5/2010 • Chart review staff hired • Abstractor training materials created • 40+ charts piloted • 15 pilot chart validations performed • Manual of Operations developed; Version 2.0 released 5/18/2010 • Database updated
Stage 6	6/2010 – 12/2023 • Manual of Operations Version 3.0 released 6/18/2010 • Certification of chart abstractors in study protocol • First 50 charts completed 8/25/2010 • First Inter-Rater Reliability (IRR) chart completed 8/30/2010 • Manual of Operations 3.1 released 10/4/2010 • Manual of Operations 3.2 released 12/02/2010 • Manual of Operations 3.3 released 5/10/2011 • Manual of Operations 3.4 released 10/20/2011 • Data Dictionary Ver. 1.0 released 12/20/2011 • Manual of Operations 3.5 released 4/26/2012 • Data Dictionary Ver. 1.1 released 6/4/2012 • Manual of Operations 4.1 released 10/4/2012 • Data Dictionary Ver. 1.2 released 3/28/2023 • Data Dictionary Ver. 1.2 released 7/10/2023 • Manual of Operations 4.2 released 7/12/2013 • Manual of Operations 4.3 released 3/14/2014 • Manual of Operations 4.4 released 11/4/2014
Stage 7	1/2024 – Current • Manual of Operations 5.0 released 1/1/2024 • Data Dictionary Ver. 2.0 released 1/1/2024

A.3 Developers

A.3.1 Investigators:

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A.3.2 Current Staff:

Anne Renz, MPH, Project Manager
Mary Lyons, BFA, Abstractor
Sundary Sankaran, Programmer

GENERAL INSTRUCTIONS

A.4 Template for Variables in the Manual of Operations

Description	Short description of information needed
Codes	Codes and/or format for data entry
Definition	Definition of condition or process to record
Abbreviations/ Synonyms	Any other words or abbreviations used to describe condition or process
Sources	Specific places in the medical record where information about this condition or process is commonly found. Information about alternate places in the medical record that can also be used. See the Discussion section of each variable for specific exclusions.
Discussion	Other information needed to make a decision about this variable, including exclusions

A.5 Medical Record Abstraction

Description	Collection of medical and social information from ACT Study research subjects over the subjects' entire enrollment in Group Health Cooperative (GHC), later Kaiser Permanente Washington (KPWA). Medical information includes specific health conditions, medical procedures, lab results, medications, and surgical history. Social information includes demographics, functional status, social history, and residence. Some information will be collected one time only, some information will be collected yearly, and some will be collected in three periods per year.
Start Date	Subject's first GHC/KPWA visit (or before if there are records of earlier medical care or other historical data included in the chart)
End Date	Subject's last GHC/KPWA visit, death, or disenrollment date
Abbreviations/ Synonyms	Enrollee = patient = subject = participant Paper medical records = chart Electronic medical records (EMR) = EpicCare = online medical records (occasionally "chart" will refer to the entirety of the subject's medical records including electronic medical records)
Sources	GHC paper medical records GHC/KPWA electronic (EpicCare) medical records Include outside medical records that are found in the above sources and are dated prior to or during GHC/KPWA enrollment
Discussion	The ACT Study is a large cohort study that began enrollment in 1994 and continues enrollment to the present date. Initial enrollment of the Original Cohort (1994–1996) was n = 2,581 GH members at least 65 years old from clinics between Tacoma and Everett. An Expansion Cohort was enrolled from 2000 – 2002 (n = 811). Continuous enrollment began in 2004 and consistently maintains around 2,000 living and cognitively intact subjects in this longitudinal study. <u>Chart Review Project Philosophy</u> The design of the chart review project was based on several principles: 1. Elements to include in the chart review were based on: a) Specific Aims of the ACT project; b) ACT Investigator research interests; c) other elements where it was plausible that there might be scientific value to the data. In each case, elements were chosen to maximize validity while minimizing time necessary for abstraction. 2. In most cases, our goal is to try to figure out what was going on in the body of the patient. For some conditions, diagnoses written down by a provider are useful. For other conditions, other data (such as blood

pressure measurements and medications used to treat hypertension) are thought to be better indicators of the underlying biology than whether the provider had made a diagnosis. In each case the elements chosen for abstraction are carefully considered alongside other streams of data (automated laboratory data from 1988 on, automated pharmacy data from 1977 on, ACT study data, and so on).

3. In general, the job of the chart reviewer is to abstract what is written in the chart. Medical records are produced by human beings and there are often errors. Egregious and easily caught errors such as a chart page with the wrong patient's name should not be abstracted, but in general the data in the database should reflect exactly what is in the chart.
4. Chart reviewers are encouraged to ask questions. While great pains have been taken to develop the chart review abstraction project, further refinements will improve our process.

Paper Medical Records

Undated records: Undated records may be used if they are filed in the correct area of the chart and appear to be in date order.

Master Problem List: The yellow "Master Problem List" list on the front left side of newer charts can be used as a reference but diagnoses, treatments, medical history, and diagnosis dates should be supported elsewhere in the chart. Social history/demographics recorded on the Master Problem List that are not supported elsewhere should be entered in Conditions of Note (a note-taking section of the Access database), but not in the main data entry areas of the Access database.

LHMP and double-entry: Most charts in our preliminary analyses contained one or more Lifetime Health Monitoring Program (LHMP) self-report questionnaire forms. These forms collect information about particular elements in a systematic fashion, making them extremely valuable from a research perspective. We thus re-designed the computerized chart abstraction tool to facilitate complete capture of relevant fields from this form. Another principle of the chart review project has been to avoid double abstraction (when possible). Thus, there will be references in several places to guide in avoiding double entry of elements from the LHMP form.

EpicCare Medical Records

Overview: EpicCare is the electronic medical record system used by Group Health Cooperative. All subjects will have an EpicCare medical record but not all subjects will have information in their record. The use of EpicCare began slowly in September of 2003, and it was not until November of 2005 that all clinics were documenting medical information completely online. Some medications in Epic date back to 1999. Different types of medical information (x-rays, lab results, medications) have been/are being scanned into EpicCare.

SnapShot tab: The "SnapShot" tab in Epic can be used as a reference but Problem List diagnoses, treatments, medical history, and diagnosis dates should be supported elsewhere in the medical record. If social history and

	demographics recorded in the "Significant History/Details" and "Family Comments" areas seem relevant but aren't supported elsewhere in the paper or Epic record, they should be entered in Conditions of Note. Otherwise, this information should not be entered in the main data entry areas of the Access database. *Scanned documents prior to 2003:* Effective 1/1/24, do not review/abstract scanned documents prior to 2003 because they are almost always duplicates of what is in the paper chart. *Consulting nurse, secure messages, MyChart:* Effective 1/1/24, do not review/abstract non-encounters such as calls to the consulting nurse or secure messages. Note: Continue to abstract real-time virtual phone/video) encounters. See D.8.6, "Abstracting Yearly Data on Form 2" for more details. *Care Everywhere*. Effective 1/1/24, if Care Everywhere encounters show up as being from outside facilities, only review/abstract the discharge summary (and the H&P if the discharge summary says "see H&P"). If Care Everywhere encounters at an outside facility show up as a KP encounter, review/abstract it. Final Check Tab in the Access Database The 'Final Check' tab lists all required variables. To finalize data collection, the abstractor must complete this checklist. Tracking Chart Completion The Chart Review team uses a spreadsheet to track more information on completed abstractions in addition to the Tracking tab in the Access database. Paper worksheets and forms are used as needed by abstractors to assist in tracking specific variables from year to year (see Appendix D.7). Procedures *For ordering charts, chart room guidelines, and chart tracking:* https://sp-cloud.kp.org/sites/KPWHRI-Research-Operations/SitePages/Medical-Records.aspx *For questions and incorporating decisions*: see Appendix D.8.4: Whom to Contact with Questions. Conflicting/Missing Information in Medical Records Subject medical records may contain discrepancies in variables such as social history, demographics, female history, medical/surgical history, diagnoses, and dates of diagnoses. Specific dates may be missing from records or exact dates may be unknown. Specific directions on how to handle conflicts/missing information for individual variables can be found in the individual variable discussion sections. Refer to section B.1.7, Abstractor Notes, for further instructions on how to document conflicting information in the Abstractor Notes section of the Access

	database. • Use the source document if possible when recording a date or diagnosis. For example, a diagnosis and date on an operative report or pathology report would be more reliable than a verbal report of date and diagnosis from a family member. • Self-reports from documents which are chronologically earlier in the chart are generally more accurate than later secondhand reports. However, ensure that the data you record captures the information you need for abstraction. For example, a self-report of the number of living children a subject has may not be an accurate report of Gravida/Para, as the number of living children would not include miscarriages, abortions, or deceased children. • Reports from a specialist in the field of the diagnosis of interest, a hospital discharge summary with the discharge diagnosis of interest, or from a subject's primary care provider are generally more accurate than reports from a specialist in an unrelated field. For example, a patient may have been diagnosed with a TIA in a hospital or ER discharge summary. Later you see a report of a stroke on the same date on an ophthalmology medical history summary. Abstract the diagnosis from the visit or the specialist pertaining to the diagnosis of interest over that found in unrelated visit/specialist notes. In this example, the correct diagnosis is TIA, abstracted from the hospital discharge summary. • When there is conflicting information about a condition, abstract based on the specialist who would typically diagnose and treat that condition over the diagnosis of primary care or another provider. • If varying reports of an item of interest appear within the year, record all of them, if that is an option in the Access database. For example, if varying reports of a participant living in an independent and dependent living situation are found, record both. If you find later evidence that the subject lived in only one of these settings, you can change the earlier data. If recording all the possible reports is not an option, see the specific section in the codebook. • Review the criteria in each specific section of the Manual of Operations on coding discrepancies in social history and demographic variables. For example, you may find discrepancies in smoking pack year history within a year, however, the protocol states to abstract only the first reported pack year history within the year of interest. • If you find a diagnosis in a chart that you feel is incorrect, record the conflict as directed in B.1.7 Abstractor Notes and record your decision and action. For example, a subject has been diagnosed with asthma which you have coded previously, and you find one reference to COPD on a consulting nurse phone encounter, but no other prior or subsequent evidence that the subject was ever diagnosed with or treated for COPD. You decide that this is not a correct diagnosis and record the conflict and your decision not to code it in the Abstractor Notes text field. • If you find incorrect data and have evidence to support why it is incorrect,

	use the data you know to be correct. For example, "No HRT" is self-reported on the breast cancer screening form, however, you have abstracted Pre-1977 HRT prescriptions for the subject. Choose "HRT Ever" on the Female History form in the Access database. • If the data in the chart is unclear about a subject's diagnosis, or you are unsure if a subject has received a definitive diagnosis, review the chart with the lead abstractor. If you and the lead abstractor feel it is still unclear, email a brief summary to the PM and bring the corresponding chart pages to the PI meeting. • If you find conflicting dates for a condition that does not require a specific date and is within the same year of interest, enter the condition within the year of interest. • If you find conflicting dates in different years for the same diagnosis or event, use the date from the source data. If the source data is not available for review, use the date that appears on the earlier record (unless there is compelling evidence otherwise). • If a month/day level date is missing for a procedure, event, or diagnosis, leave the date field blank, but enter the event in the database year it occurred. If the day, month, and year are all missing, enter the event in Conditions of Note with a date of "Year Unknown." • If the procedure, event, or diagnosis is at an outside hospital and is described on the discharge summary but the actual date of the event is unknown, use the hospital admission date. Similarly, if a subject is diagnosed with a condition in the course of a hospitalization, and you do not know the specific date the diagnosis was made, enter the hospital admission date. For example, a subject is hospitalized with chest pain and is discharged with a diagnosis of MI. Enter the date of admission as the date of the MI. • If there is a lab with a missing date, use it in order of the section of the labs where it is filed if it is apparent which trimester and year it would fall into. Labs are almost always filed in correct date order. • If a subject has medical/surgical history prior to GHC enrollment, but the date is unknown, enter the historical item in Conditions of Note with the information that is available. For example, "Appendectomy in 1950s, exact year unknown." • If a subject has a medical/surgical historical condition and reports the year of onset as a range, choose the lower number of years. For example, in 1990 a participant reported a history of hearing loss for the last 10-15 years. Enter the initial report of hearing loss in 1980 (10 years prior, which is the lower number in the range). • If a subject reports a condition or includes a variable that occurred a specified number of years in the past, count backward and enter the event in the year it occurred. For example, a health history questionnaire filled out in 1979 states the subject was married 7 years ago. Count 7 years backward from 1979 and enter the marriage in the year 1972 (assuming

	other criteria are met for entering a year in the Access database. See Section A.5, History items). • Abstract the typed report date at the bottom left on x-ray slips in lieu of the handwritten date (requisition date) at the top of the slip as these dates can differ. • If there are multiple dates on the ECGs, use the earliest date. This will ensure consistency among abstractors. • Do not collect memory diagnoses or any other medical diagnoses from autopsy reports. The only information that may be abstracted from an autopsy report or death certificate is the date of death. • When two different ages are found for the Female History variable "age at first birth," use the first chronological mention in the medical record.

A.6 History Items

Description	Record of historical conditions in the initial year they are found according to variable descriptions requiring at least one of the following: **Diagnosis** – identifying a disease from its signs and symptoms; a conclusion based on investigation and analysis **Documentation** – a record of pertinent facts, findings, observations which support a diagnosis; evidence contributing to a diagnosis **Record of –** written or reported information that a subject in the past had a history of symptoms, medical conditions, or medical procedures
Definitions	**Height** – one-time collection of first adult height recorded in chart (see B.1.5) **Female History –** female reproductive history and hormone medication use **Initial Diagnoses –** a newly diagnosed condition (AFIB, CHF, COPD, hearing difficulties), which is collected in the Form 1: History section of the database
Abbreviations/ Synonyms	Dx = diagnosis R/O = record of (do not confuse this with Rule Out in chart notes) Hx = history H/O = history of
Sources	All medical records, paper and electronic
Discussion	<u>Tracking tab</u> Contains fields for reviewer name, final review date, total review time, review source (paper, Epic), abstracted through (death or a specific year), height, exercise treadmill test, Conditions of Note, and Abstractor Notes. <u>Female History tab</u> Refers to the collection of female reproductive history and hormone medication use (for Female History, see section B.3). <u>Initial Diagnoses tab</u> Refers to a newly diagnosed condition (AFIB, CHF, COPD, and hearing difficulties), which is collected in the Form 1: History section of the database for the initial episode (thereafter collected in the Form 2: Yearly Items section) • Atrial fibrillation, see section C.8 • Congestive heart failure (CHF), see section C.2.13 • Chronic obstructive pulmonary disease (COPD), see section C.2.16 • Hearing difficulties, see section C.3.9

A.7 Yearly Items

Description	Record of active conditions in the year they are found according to variable descriptions requiring **diagnosis, documentation, and/or record of.**
Definition	**Active condition** – refers to a newly diagnosed condition or indicates a change in treatment or medication (including dose change) for that condition. Examples of what makes certain conditions active can be found in the module for each condition and in a list found in section D.12. **Diagnosis** – identifying a disease from its signs and symptoms; a conclusion based on investigation and analysis **Documentation** – a record of pertinent facts, findings, observations which support a diagnosis **Record of –** written or reported information that a subject in the past had a history of symptoms, medical conditions, or medical procedures
Abbreviations/ Synonyms	Dx = diagnosis Hx = history H/O = history of
Sources	All medical records, paper and electronic
Discussion	Create a year in the database for each year in which there is a variable to abstract, regardless of whether it occurred prior to or during GH/KP enrollment. In many cases, patients have records from their prior health care provider included in their GH/KP medical records. These records should also be abstracted. However, do not create a year to abstract instances of certain variables when they occur prior to the patient's first encounter with the GH/KP system; see below. **Excluded Medical History variables**: When the following variables occur prior to the subject's first encounter with the GH/KP system, do not add a year to the database. Instead, abstract these variables into the next year for which there is other abstractable data. • Alcohol use, either currently or history of • Smoking, either currently or history of For example, in 1976 a patient says they have been smoking one pack a day for 20 years. However, they didn't enroll in (have a medical encounter with) GH until 1970. A year cannot be created for Smoking prior to enrollment, so Smoking would need to be abstracted in the next available year that has other abstractable data (which in this case happened to be 1968, when a year was created to record a diagnosis of asthma). **Self-reported clinical information prior to GH enrollment** Sometimes patients will self-report clinical information on their GH enrollment form without accompanying medical records. If the condition is consistent with

	their later health history (e.g., asthma) or is a technical term that patients aren't likely to misuse (e.g., cholecystectomy), abstract it. For terms that are commonly and often imprecisely used (e.g., pneumonia, depression), use judgment. If you are pretty sure it's real, create a year and abstractor. If unsure, do not abstract but list in Conditions of Note. **Active Condition -** This project borrowed heavily from experiences abstracting medical records from the Cardiovascular Health Research Unit (CHRU). One of the important distinctions made in CHRU chart abstractions is the notion of an active vs. an inactive chronic medical condition. Active medical conditions are unstable, uncontrolled, or changing. Inactive medical conditions are stable, controlled, or unchanging. Inactive medical conditions may be monitored, followed, or evaluated, but they do not prompt changes in therapy or new referrals to a specialist. An inactive medical condition may be chronically followed by a specialist, but a new referral to a specialist would make it an active condition. The way these data will be used is that chronic conditions will be identified by their first mention in the database. They are then presumed to be present until death. The only thing that needs to be abstracted in years following the initial presentation of a chronic condition is whether that condition was active in each year. If the condition was inactive in a particular year of interest, no data need to be recorded for that year. Subject-specific medication information is available in electronic pharmacy records for all years post-1976. Medication dosage information, medication changes, and medication additions do not need to be abstracted or used to determine if a condition is active in post-1976 years because they will be analyzed from electronic pharmacy data. <u>Active Condition Abstraction Instructions</u> **For all years, abstract the following as indicators of an Active Condition:** • Initial diagnosis (baseline) • Surgery • Referral to a specialist (e.g. physical therapist, nutrition, medical specialty) and new referrals to the same specialist in subsequent years qualify as criteria for an Active Condition. It has to be a new referral to be coded as an active condition. For example, a Physical Therapy referral which includes 6 visits is only one referral. A subsequent new referral to Physical Therapy would be counted again as a referral. • If the patient is referred to a specialist in a particular year but doesn't see the specialist until the following year, use the year the patient saw the specialist as the year the condition was active, not the year of the referral. • A specialist visit while hospitalized or a specialist visit in the ER counts as a specialist visit for an indicator of an Active Condition. **Do NOT abstract the following after 1/1/1977 as indicators of an Active**

	Condition, as they are captured in the pharmacy data: • Change in medication dosage of the same medication (either an increase or a decrease in dosage if specifically noted) • Change to a different medication to treat the condition • Prescription of a new/additional medication to treat the condition • Do not count medications given in hospital as indicators of an Active Condition (see specific directions for COPD and CHF). **Do NOT include the following as an Active Condition (change in treatment or medication) in any year:** • Change in patient disease status (e.g. increased HbA1c, which will be captured in labs) • Provider orders a test that does not result in a change of treatment/ management • Do not code a medical condition as an active condition if the patient had an ER visit or was hospitalized for an exacerbation of that condition in a given year, without a change in medications. We code CHF and COPD exacerbations, but not exacerbations of other conditions, unless they meet any of the other criteria for an Active Condition. <u>Diagnosis</u> A "rule out (R/O)" is not a diagnosis. A differential diagnosis, DD, is not a diagnosis. A "?" preceding a diagnosis is not enough to code that variable in the year unless otherwise stated specifically in the manual of operations section for that variable. For example, "?depression" should not be coded as depression. Do not assign a condition based on ICD codes. Be sure there is supporting information in the chart notes, as the ICD code may have been assigned while ruling out a diagnosis, and/or the ICD criteria may be different than the definitions used in this study. If you find information you feel is incorrect in the chart, see section A.4, Medical Record Abstraction, and section B.1.7, Abstractor Notes for instructions.

A.8 Laboratory Items

Description	Collection of specific lab results 3 times per year for all years **prior to 1/1/1988**, including lab results from prior medical history and/or outside medical records **prior to 1/1/1988**. Collection of **all PT/INR results** per year along with their specific dates for all years **prior to 1/1/1988,** including all PT/INR results from prior medical history and/or outside medical records **prior to 1/1/1988.** The database does not allow data entry of labs starting in 1988 onward.
Discussion	Specifics are located in the laboratory variable discussion in section C.12.

A.9 Medications

Description	Prior to 1977: Yearly collection of specific medications prescribed to subject. Effective 1/1/2024: Only abstract years in which the participant was aged 40+. If they were born after 1937, do not abstract pre-1977 meds because all years would be before age 40. If they were born prior to 1937, abstract the years from age 40 until 1977. In any year: Collection of incidences of cessation of any medication due to the patient's intolerance or contraindication, the results of a specific study (e.g., doctor notes that HRT is being discontinued due to WHI findings), or new clinical guidelines with a programmatic practice change (e.g., doctor notes pre-emptive medication change due to GH/KP initiative to switch patients off certain high-risk meds)..
Definitions	**Cessation of Medication** – Record of **any medication** that is discontinued due to intolerance or contraindication **Intolerance** – A situation which led to stopping or not starting a drug that would not be considered a risk to the subject's health and well being. It can be viewed as a "nuisance side effect." For example, a certain medication caused the subject to experience a dry mouth or nausea. Oftentimes another medication is substituted because, even though the side effect is not harmful, the subject cannot tolerate it. **Contraindication** – Any special symptoms or circumstance that renders the use of a drug inadvisable, usually because of a risk, sometimes life threatening. Examples would be the use of aspirin causing a gastric ulcer, or interaction with another medication the patient is taking.
Abbreviations/ Synonyms	See specific instructions for Medications in section D.6.
Sources	All medical records, paper and electronic.
Discussion	The medications module was designed very carefully. We have access to an amazing resource in the GHC Pharmacy Database which came online in 1977. This database records all fills of prescription medications from a Group Health pharmacy, including drug name, dose, number of pills dispensed, and date. We have used those data for several publications. The role of the medications module is to extend beyond what is readily available in the pharmacy database. Specifically, for certain classes of medications, we are interested in prescriptions before 1977. A patient is at risk of exposure to a drug if they meet certain criteria. However, if they are prescribed the drug and suffer a major side effect or adverse drug reaction, they are much less likely to be prescribed that drug in the future. In that case, such a person is no longer at risk for exposure to that drug. As an example, consider an analysis of hormone replacement therapy. All women who reach menopause are at risk of exposure. A woman is prescribed

	Premarin and has a deep venous thrombus and a pulmonary embolus, ascribed to the Premarin, and she is discontinued from the Premarin. The choice of whether to use Premarin again in the future would be different for her because of her personal history of a complication. In the analysis of HRT, her time not exposed to Premarin must be considered separately – that period of time between menopause and when she was exposed (during which period of time she could potentially have been exposed) can be lumped together with other women's time periods of potential exposure. At the time she develops the complication, her time will no longer count in the analysis – a procedure referred to as "censoring." **Pre-1977 medications (see also section C.10)** **Prior to 1/1/1977** (pre-'77): Record of medications of interest to include those from the following categories: • antidepressant • antihypertensive • antipsychotic • diabetic medication including insulin • hormone • sedative • thyroid • antimalarials The list also includes a few specific medications of interest that do not fall in these categories but were chosen by the investigator. **Cessation of medication in any year (see also section C.11)** Abstractors record cessation of medications due to intolerance, contraindication, the results of a specific study, or new clinical guidelines.

SECTION B: ACT CHART REVIEW FORM 1: HISTORY

B.1 Subject Information

B.1.1 Study ID

Description	Study Identification Number
Codes	Drop-down list
Definition	Subject's ACT Study identification number
Abbreviations/ Synonyms	Study ID, ACT Study #
Sources	ACT Study Database Crosswalk
Discussion	Verify study ID in the database with the study ID on the chart request form. Note: This is not the Group Health Consumer Number or KPWA Medical Record Number. The ACT Study ID number is used as a linking variable between GH/KP records and ACT study records. A few people have access to the crosswalk between names and ACT Study ID numbers, but many people do not have such access. All members of the Chart Review Team have been approved to have access to patient identifiers, but many ACT researchers have no need to have such access. For that reason, the data in the database do not include identifiers other than the ACT Study ID number and select dates. One- or two-digit study ID numbers should be excluded from data analysis as these are test records and "dummy" records used for inter-rater reliability (IRR) audits.

B.1.2 ACT Study Enrollment Date

Description	Date of ACT Study Enrollment
Codes	mm/dd/yyyy (will be preloaded)
Definition	Subject's enrollment date in the ACT Study
Abbreviations/ Synonyms	First biennial visit date in ACT Study
Sources	ACT Study Database
Discussion	This date will vary by subject. Enrollment began in 1994 and continues to the present date. This date is used as the beginning time point for many analyses of dementia onset, since it was on this date that the person was first evaluated and found to be free of dementia.

B.1.3 Birth Date

Description	Date of birth
Codes	mm/dd/yyyy (will be preloaded)
Definition	Subject's date of birth
Abbreviations/ Synonyms	DOB
Sources	ACT Study Database, EpicCare, and anywhere in the medical record
Discussion	Confirm accuracy with medical record

B.1.4 Gender

Description	Gender
Codes	M - Male F - Female
Definition	May reflect sex assigned at birth (biological factors) as well as gender (social factors) depending on how the participant answered.
Abbreviations/ Synonyms	sex, woman, man, ♀, ♂
Sources	ACT Study database, MD or provider visit notes, specialty visit notes, Epic Demographics page
Discussion	The gender variable in the Chart Review database is pre-populated from the main ACT database. The main ACT database is based on self-report. Historically, ACT captured "gender," which may reflect as sex assigned at birth (biological factors) as well as gender (social factors). More recently, ACT asks separate questions about sex assigned at birth and gender identity. Sex assigned at birth pre-populates the Chart Review database because an answer of "female" allows data entry into the Female History variables – see section B.3 for more details.

B.1.5 Height

Description	Height
Codes	Height | numeric text box | __ (ft) __ __ (inches) __ __ __(cm)
Definition	Subject's height
Abbreviations/ Synonyms	HT, Ht
Sources	MD or provider visit notes, PE forms, X-ray/radiology reports, Adult Health History Questionnaire (non-LHMP) (Paper chart only; abstraction in EPIC discontinued as of 1/1/2024)
Discussion	This is a required variable that is abstracted only once. Record first adult (≥20yo) height of subject found in the medical record. Record height as it is found in the chart. Round heights less than ½ in/cm **down** to the nearest inch/cm. Round heights of ½ and ¾ in/cm **up** to the nearest inch/cm. Use an actual measurement rather than self report. Height may be reported in feet and inches (ex: 5'6") or in inches only (ex: 66"), depending on how it appears in the chart.

B.1.6 Conditions of Note

Description	Record of other significant medical information
Codes	Text field
Definition	Medical information not otherwise captured in the chart abstract that an abstractor finds noteworthy to provide context to chart review
Sources	Anywhere in the medical review
Discussion	The purpose of this field is to provide a place for notating important information about the subject's health that is not captured elsewhere. The data collected here may be used to suggest modifications to the Chart Review protocol and will facilitate making those changes without having to re-review all of the charts. Data collected here will also facilitate a more thorough understanding of the patient's medical condition. We chose to formally abstract data regarding conditions that we thought would be at least somewhat prevalent, knowing that it would be difficult or impossible to capture everything that might impact the subject's health in general and their brain in late life in particular. Use the following conventions: 1. Enter the date if known and year, followed by a space, followed by text, followed by a period. Do not use dashes or semicolons between dates and diagnoses as they make it hard to do text searches. 2. If there are multiple items to enter in one year, use a separate sentence and separate date for each. 3. Use quotation marks around the name of a procedure or condition if it is not the actual name of the procedure. For example, a self-report or secondhand report of "breast surgery" would have quotation marks, but R modified radical mastectomy listed on an operative report would not have quotation marks. 4. Put events in chronological order. Record anything that seems potentially important to the overall picture of the subject's health in the abstractor's opinion. Include the following items in Conditions of Note: 1. History of surgeries with general anesthesia (prior to and during GHC enrollment) – see section below for more details 2. Significant medical conditions or diagnoses not abstracted elsewhere in the chart review (prior to and during GHC enrollment) that may have an effect on subject's health and/or functioning. Examples: Loss of limb(s), paraplegia, post-Polio syndrome, rheumatic fever, scarlet

	fever, viral meningitis, schizophrenia, psychosis, valvular prolapse, post-partum depression, steroid-induced diabetes, sleep apnea. 3. Historical items which would normally be abstracted in the Access database, but the exact year is unknown or unclear (e.g., pneumonia in 1950s, or blood transfusion mid-1960s, year unknown, or self-reported items on a health questionnaire in the section entitled "Have you ever had any of the following"). 4. Items from health history forms (non-LHMP) that don't fit elsewhere. 5. Information that helps clarify why a patient is taking a certain drug: e.g. taking a Parkinson's drug for restless leg syndrome (but does not have Parkinson's) <u>Surgical History</u> Enter the full name and year, if known, of surgical procedures requiring general anesthesia. For example, instead of "Knee surgery," record "Left Total Knee Replacement." It is not necessary to capture surgeries with spinal anesthesia or conscious sedation. Do not include surgeries which are captured elsewhere in the chart abstraction tool. However, surgery for cancer treatment should be included in Conditions of Note, although it is also coded as "Surgical" treatment type for cancer. <u>Surgeries we capture in chart review include</u> • Pacemaker placement and removal • CABG • Carotid endarterectomy • Coronary angioplasty • Cholecystectomy • Cataract surgery • PVD procedure • Prosthetic valve placement <u>Lab results</u> Include lab results that are reported in different units than we collect. For example, some blood glucose and hemoglobin labs from the 1950s and 1960s are reported as ">120" or "<120" instead of the numeric values or "normal" value we collect in the Labs section of the Access database. The lab test name, year and time period, and result should be entered in Conditions of Note. <u>Format/content of data entry in Conditions of Note</u> 1. Do not write "Medical-surgical hx" or "PMH" as this is included in the definition of what is contained in this field. 2. Enter the date first, then the diagnosis or surgery name. If you are entering additional information about an item collected

	elsewhere in the chart review, use the title or synonym for the item that is used in the Manual of Operations. For example, additional information about atrial fibrillation that you enter in Conditions of Note should be entitled AFIB, atrial fibrillation, or one of the other synonyms listed in the Manual of Operations. <u>Exclusions</u> 1. Do not input any information disclosing a Sexually Transmitted Disease (STD) in Conditions of Note, Ceased Medications, or any other text areas of the database. STDs include chlamydia, gonorrhea, syphilis, HIV/AIDS, viral hepatitis (Hepatitis B), trichomoniasis, genital herpes, genital warts, and Human Papilloma Virus (HPV). 2. Do not include names of doctors, outside hospitals, assisted living facilities, or city or state of residence. You can enter "at an outside hospital" or "moved out of state," instead of identifying the specific place names. OHS stands for 'outside hospital system' and is used as shorthand in Conditions of Note (ex: "2004 Head CT at OHS"). 3. Do not record participation in research studies unless they result in a new diagnosis or a treatment that we are collecting. Do not record studies where the subject was a control or we have no data about the result of study participation. 4. Do not collect family history of Alzheimer's, dementia, or other family history of memory complaints in Conditions of Note. (These data are collected by the ACT study in some detail, and are collected in a systematic fashion that is likely to be of superior quality to data in the medical records.)

B.1.7 Abstractor Notes

Description	Record of variables which were difficult to abstract and specific detail by case
Codes	Text field
Definition	Documentation of conflicting data within the medical record and the process for resolution of difficult variables.
Sources	Anywhere in the medical review
Discussion	Record if there was conflicting information in the chart and document the conflicting information. Include the date(s) of the chart notes/Epic records in question, and how the final decision was made. Indicate if the case was discussed with the Principal Investigator. Use this field to note any other significant event regarding the chart review, for example: • A second abstractor was involved with reviewing the chart, • A volume of the paper chart was missing, e.g., Chart Vol. II, 1990-1999, missing, archives could not locate • Gaps in records because patient moved out of the area, e.g., no chart records available after 5/2000 although patient was not deceased until 10/2003). Abstractor Notes can also be used for explanations of why a condition was not abstracted: e.g. "hx of afib noted since 1993, but not abstracted b/c does not qualify as afib, per codebook."

B.1.8 Exercise Treadmill Test (ETT)

<table>
<tr><td>Description</td><td>Record of exercise treadmill testing (ETT)</td></tr>
<tr><td>Codes</td><td><table><tr><td>ETT</td><td>checkbox</td></tr><tr><td>If checked, specify year</td><td>YYYY</td></tr></table></td></tr>
<tr><td>Definition</td><td>Documentation of subject results of an exercise treadmill test</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>ETT, Exercise ECG; ECG - exercise treadmill; EKG - exercise treadmill; Stress ECG; Exercise electrocardiography; Stress test - exercise treadmill, Bruce protocol</td></tr>
<tr><td>Sources</td><td>Anywhere in the medical review</td></tr>
<tr><td>Discussion</td><td>An exercise stress test is a screening tool to test the effect of exercise on the heart. It provides an overall look at the health of the heart. The subject will walk or pedal on an exercise machine while the electrical activity of the heart is measured with an electrocardiogram (ECG), and blood pressure readings are taken. This will measure the heart's reaction to the body's increased need for oxygen. The test continues until the subject reaches a target heart rate, unless complications such as chest pain or an exaggerated rise in blood pressure develop. The subject will continue to be monitored for 10 - 15 minutes after exercising, or until the heart rate returns to baseline.

History of an ETT is being collected for selection purposes of a future chart review project, to identify which ACT subjects have participated in an exercise treadmill test. If an ETT has been performed, check the box and enter the first year in which the participant did an ETT (regardless of results and whether the participant was able to complete it).

This variable is not included in the inter-rater reliability audit (IRR). See Appendix D.8 for description of the IRR.

<u>Exclude:</u>
• Pharmacologic stress myocardial perfusion studies</td></tr>
</table>

B.2 Reviewer Information

B.2.1 Reviewer Name

Description	Name of medical chart reviewer
Codes	<table><tr><td>Reviewer name</td><td>drop-down</td><td></td></tr></table>
Definition	Name of person who performs the medical chart review
Abbreviations/ Synonyms	Chart abstractor
Sources	Specified staff from the Chart Review Team staff list
Discussion	In the case of two abstractors having performed reviews, record the name of the person who completed the review. Make note of the other abstractor in the text field under "Abstractor Notes." This applies to situations in which the primary abstractor is unable to finish a chart. It does not apply to IRRs; the primary abstractor's name should remain as the name of record.

B.2.2 Final Review Date

Description	Abstraction completion date
Codes	Final Review Date | date entry | mm/dd/yyyy
Definition	Date the abstractor completes all aspects of the chart review for the entire medical record and the data entry of all required variables
Abbreviations/ Synonyms	
Sources	Abstractor
Discussion	Record the last date information was entered into the database

B.2.3 Total Review Time

Description	Total time it took to review the complete medical record
Codes	<table><tr><td>Total Review Time</td><td>numeric entry</td><td>Hours _ _._ _</td></tr></table>
Definition	Total time in hours and minutes (rounded to the nearest quarter hour) to review the complete medical record.
Abbreviations/ Synonyms	
Sources	Abstractor who signs off chart
Discussion	Total the logged hours and minutes to complete chart review. Record in decimal values (for example, 5.25 hrs). Round minutes to the nearest quarter-hour (for example .25, .50, .75, .00). Data from this field will be used to help us plan subsequent phases of the project. While we are interested in tracking time, efficiency, and throughput, our primary goal is validity and accuracy.

B.2.4 Review Source

Description	Medical record sources used for the review
Codes	<table><tr><td>Review Source</td><td>checkboxes</td><td>Paper Chart EpicCare</td></tr></table>
Definition	Medical record source types used in the review
Abbreviations/ Synonyms	
Sources	Paper charts from Group Health Cooperative (GHC) EpicCare electronic medical records from GHC or Kaiser Permanente Washington (KPWA)
Discussion	Check all that apply. Most patients will have an Epic record but it may not contain any information to abstract if the patient dropped out of Group Health or was deceased prior to the early 2000s. The abstractor should review the Epic record for every patient and determine if there is any information to abstract. Information in the early 2000s may be duplicated between Epic and the paper chart. Do not check the EpicCare box in the "Review Source" section of the Access database if there is no unique information to abstract from Epic.

B.3 Female History

B.3.1 Hysterectomy/Oopherectomy

<table>
<tr><td>Description</td><td>Record of a hysterectomy/oopherectomy</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Hysterectomy</td><td>options group</td><td>No
Yes
Unknown</td></tr>
<tr><td>Hysterectomy Month</td><td>date entry</td><td>01 – 12</td></tr>
<tr><td>Hysterectomy Year</td><td>date entry
checkbox</td><td>YYYY
Estimated (If year is estimated, check “estimated” checkbox)</td></tr>
<tr><td>Ovaries Removed (bilateral)</td><td>options group</td><td>No
Yes
Unknown</td></tr>
<tr><td>Info Source (ovaries)</td><td>drop-down</td><td>OP/Path report
MD note
Self
Other</td></tr>
<tr><td>Year Removed (ovaries)</td><td>date entry
checkbox</td><td>YYYY
Estimated (If year is estimated, check “estimated” checkbox.)</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>A surgical operation to remove the uterus and sometimes the cervix

Removal of the entire uterus and the cervix is referred to as a total hysterectomy.

Removal of the body of the uterus without removing the cervix is referred to as a subtotal hysterectomy.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>TAH=Total Abdominal Hysterectomy
TVH=Total Vaginal Hysterectomy
USO=Unilateral Salpingo-Oophorectomy (removal of one ovary) (not included in data collection)
BSO=Bilateral Salpingo-Oophorectomy (removal of both ovaries, sometimes referred to as surgical menopause, along with the Fallopian tubes (“salpynx”))</td></tr>
<tr><td>Sources</td><td>OB/GYN visit notes, operative reports, Epic/chart problem list, Breast Cancer Screening Form, Adult Health History Questionnaire (non-LHMP)</td></tr>
<tr><td>Discussion</td><td>This variable is required for all participants assigned female at birth.</td></tr>
</table>

	Hysterectomy Hysterectomy does not necessarily include removal of the ovaries. A hysterectomy (any type) does not inform whether ovaries were removed unless ovary removal is noted in the operative report. If the Breast Cancer Screening Program form indicates "Still Menstruate: No (Naturally)," this can be coded as Hysterectomy "No." If there is evidence later in the chart that a participant has had a subsequent hysterectomy, code Hysterectomy "Yes." Ovaries Removed Include bilateral (both sides) ovary removal only. Do not include unilateral (one side) ovary removal. The point of collecting information about ovary removal is that removal of both ovaries ceases their role in producing female sex hormones such as estrogen. If only one ovary is removed, the remaining ovary still produces female sex hormones. The Info Source variable refers to the information source where the ovary removal is mentioned. Do not record an information source for hysterectomy. If the ovaries were not removed, or if it is unknown whether the ovaries were removed, the "Info Source" field will be grayed out and unavailable. If there is no information in the chart regarding whether the ovaries were removed or not, code "Unknown." Do not assume "No." If ovary removal is mentioned in more than one chart document, the Info Source should be recorded in the following hierarchy: 1) Operative/Pathology report 2) MD note 3) Self-report 4) Other

B.3.2 Parity/Gravidity

<table>
<tr><td>Description</td><td>Record of pregnancies and births</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Age at 1st birth</td><td>date entry</td><td>YYYY</td></tr>
<tr><td>Number of pregnancies</td><td>numeric text entry</td><td>_ _</td></tr>
<tr><td>Number of live births</td><td>numeric text entry</td><td>_ _</td></tr>
<tr><td>Number of stillbirths</td><td>numeric text entry</td><td>_ _</td></tr>
<tr><td>Number of miscarriages/ abortions</td><td>numeric text entry</td><td>_ _</td></tr>
<tr><td>Number of other (ectopic/ molar pregnancies)</td><td>numeric text entry</td><td>_ _</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Gravidity – is the number of times the subject has been pregnant.
Gravidity includes ectopic pregnancies, miscarriages, pregnancy terminations, stillborn births, and live births.

Parity – is the number of times the subject has given birth at or after 20 weeks gestation. Parity includes live births and still births (baby born dead at or after 20 weeks of gestation). A woman who has twins (i.e. 2 babies) gets only one parity point for the twin birth, not 2 points. Also note twins or multiple births in Conditions of Note. (Clinicians may report parity incorrectly.)</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>G/P, grava/para</td></tr>
<tr><td>Sources</td><td>Cytology lab report forms (blue), female health visit record, OB/GYN visit notes, PE forms, Breast Cancer Screening Form, Adult Health History Questionnaire (non-LHMP)</td></tr>
<tr><td>Discussion</td><td>This variable is required for all females.
Sometimes the notation is a series of abbreviations which represents:

GPA terminology, with GPA as the abbreviation for gravida, para, abortus. Accompanied by Arabic numbers, G, P, and A (or Ab) describe the patient’s obstetric history. Roman numerals are not used.

G gravida (number of pregnancies)
P para (number of births at 20+ weeks)
A or Ab abortus (abortions or miscarriages)</td></tr>
</table>

	The notation may also be a series of four numbers called TPAL terminology. TPAL terminology is a system used to describe obstetrical history: T = term births P = preterm births (prior to 37 weeks gestation) A = abortions L = living children (TPA twins count as one number, but for L they count as two) If only a range is given for the age at first birth, record the age in the middle of the range. Example: If range is age 25-29, record 27 (will always be represented in a range of 4 years on the Breast Cancer Screening From). The exact age is preferable if it is found elsewhere in the medical record. When two different ages at first birth are found, use the first chronological mention in the medical record. Self-reports from documents that are chronologically earlier in the chart are generally more accurate than later secondhand reports. However, ensure that the data you record captures the same information you need for abstraction. For example, a self-report of the number of living children a subject has may not be an accurate report of Gravida/Para, as the number of living children would not include miscarriages, abortions, or deceased children. Other than number of pregnancies, do not enter zero in any of these fields where there is no information in the chart (i.e., do not infer values). Leave these fields blank.

B.3.3 OC Use

Description	Record of oral contraceptive (OC) use
Codes	<table><tr><td>OC Use</td><td>options group</td><td>Ever Never Unknown</td></tr></table>
Definition	Record of use of oral contraceptives taken in subject's lifetime
Abbreviations/ Synonyms	Birth control pills, BCPs, OC, OCPs
Sources	Breast Cancer Screening Form, female exam lab slip, female health visit record, OB/GYN visit notes, PE forms, MD or provider visit notes, Adult Health History Questionnaire (non-LHMP)
Discussion	A response for this variable is required for all females. If you do not see any evidence of OC use, and it is not specifically mentioned that the participant did not use OC, don't assume "Never." Instead, enter "Unknown."

B.3.4 Hormone Use

<table>
<tr><td>Description</td><td>Record of hormone use</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>HRT Use</td><td>options group</td><td>Ever
Never
Unknown</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Record of use of hormone therapy in subject’s lifetime. Specifically refers to treatment with prescription hormonal medications to relieve the symptoms of menopause and to prevent osteoporosis. At one time these medications were also commonly used to prevent heart disease; the landmark Women’s Health Initiative randomized controlled trial found that hormone therapy actually increased cardiovascular risk, resulting in dramatic changes in the use of these drugs nationwide.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Hormone therapy, Estrogen replacement therapy, ERT, HRT, estrogen, EST, HT, PERT</td></tr>
<tr><td>Sources</td><td>Female exam lab slip, female health visit record, OB/GYN visit notes, PE forms, MD or provider visit notes, Adult Health History Questionnaire (non-LHMP), Epic Medication tab, Medication flow sheets in chart, Breast Cancer Screening Form</td></tr>
<tr><td>Discussion</td><td>A response for this variable is required for all females.

HRT includes estratab, medroxyprogesterone, oral Premarin, Estradiol, Climara, Estrace, injectable Estradiol, and others. One prescription is enough to include as history of hormone use.

Do not record use of over-the-counter estrogen products, naturopathic remedies and/or estrogen creams. Premarin cream is not recorded. The rationale for that is that Premarin cream is not systemically absorbed and is used for vaginal dryness. Do not include use of NuvaRing.

If you find incorrect data and have evidence to support why it is incorrect, use the data you know to be correct. For example, “No HRT” is self-reported on the breast cancer screening form, however, you have abstracted Pre-1977 HRT prescriptions for the subject. In this example, choose “HRT Ever” on the Female History form in the Access database.

The Medication tab in Epic and medication flow sheets in the chart can be used to code HRT.</td></tr>
</table>

SECTION C: FORM 2: YEARLY ITEMS

C.1 Demographic/BP

C.1.1 Blood Pressure

Note: As of 1/1/2024, this variable is only abstracted from the paper chart, not Epic. EHR data will be extracted and added to the dataset from clinical records rather than abstracted manually.

<table>
<tr><td>Description</td><td>Record of blood pressure</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Systolic/Diastolic 1:</td><td>numeric entry</td><td>NOT out-pt</td><td>checkbox</td></tr>
<tr><td>Systolic/Diastolic 2:</td><td>numeric entry</td><td>NOT out-pt</td><td>checkbox</td></tr>
<tr><td>Systolic/Diastolic 3:</td><td>numeric entry</td><td>NOT out-pt</td><td>checkbox</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>The pressure of the blood within the arteries. It is produced primarily by the contraction of the heart muscle.

Measurement is recorded by two numbers. The first (systolic pressure) is measured after the heart contracts and is highest. The second (diastolic pressure) is measured before the heart contracts and is lowest.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>BP, bp</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, PE forms, specialty care visit notes, Epic Vitals Flow sheet, Adult Health History Questionnaire (non-LHMP), Lifetime Health Monitoring Program Questionnaire</td></tr>
<tr><td>Discussion</td><td>Record the first outpatient blood pressure documented in each of these time periods/per year in the corresponding field. If no outpatient measurement is recorded, take the first BP at any setting. If there are no other BPs in the time period besides self-report, abstract it. If there is no blood pressure taken in the time period at all, leave blank.

Time period 1: January 1 through April 30
Time period 2: May 1 through August 31
Time period 3: September 1 through December 31

Give priority to outpatient blood pressure, even if inpatient BP occurs earlier in the time period. Outpatient = scheduled visit or procedure (regardless of in a clinic or hospital. For example, some radiation treatment might take place in</td></tr>
</table>

	a hospital); outpatient includes self-report as lowest priority. If the blood pressure is not from an outpatient visit, click the "NOT out-pt" checkbox. **Not Outpatient** = ER, Medic 911 Care Reports, hospital notes, hospital discharge summaries, urgent care, hospice, fire station, nursing home or other in-patient situation. On physical exam forms, be sure to enter the date found on the last page (where the actual physical measurements are recorded), and not the date on the front of the questionnaire. Missing dates For missing dates/partial dates, leave the date field blank. When entering BP, if there is a BP with a full date in a time period, use that BP instead of a BP without a date. BP reported in other formats If a BP is reported as one number for the systolic and a range for the diastolic, such as 176/76-96, skip that BP reading and use the next BP in the time period. If there is no other BP recorded in the time period, use the average for the range (the mean value, in this case 76 + 96 / 2 = 86). There is no need to document it separately in "Abstractor Notes." If a blood pressure is written in a format such as 160/88 – 90, where it is unclear if the 90 represents a pulse reading or a diastolic range, use the next BP reading in the period. If there is no other BP recorded in the time period, document the reading 160/88 – 90 in Abstractor Notes. If a blood pressure is reported with a 0 in place of the diastolic, such as 142/0, skip that BP reading and use the next BP in the time period. If there is no other BP recorded in the time period, leave the blood pressure data entry box in that time period blank.

C.1.2 Alcohol

Note: As of 1/1/2024, this variable is only abstracted from the paper chart, not Epic. EHR data will be extracted and added to the dataset from clinical records rather than abstracted manually.

<table>
<tr><td>Description</td><td>Record of alcohol consumption and treatment</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Consumption</td><td>drop-down</td><td>None
Rarely
Occasional
Frequent
ETOH abuse presently</td></tr>
<tr><td>Action</td><td>drop-down</td><td>Hospitalization
Counseling + Medication
Medication
Counseling/Counseling referral
PCP advise reduction/cessation
Refused treatment
None/Unknown</td></tr>
<tr><td>History of alcohol abuse</td><td>checkbox</td><td></td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Consumption pattern for alcoholic beverages, treatment modalities if indicated</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>ETOH</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, PE forms, Epic Snapshot Significant History/Details, Adult Health History Questionnaire (non-LHMP)</td></tr>
<tr><td>Discussion</td><td>
<table>
<tr><td>None</td><td>No alcohol in the entire year</td></tr>
<tr><td>Rarely/Social</td><td>Anything less than Occasional/Light/Moderate
or noted as “social” drinker, or if noted that subject drinks alcohol but unable to determine quantity
<1drink/wk</td></tr>
<tr><td>Occasional/ Light/Moderate</td><td>1-9 drinks/week
≤4 days/week and/or
≤2 drinks/day
or noted as “light,” “occasional,” or</td></tr>
</table>
</td></tr>
</table>

	"moderate" drinker
Frequent/Heavy/Binge	Average ≥10 drinks/week ≥5 days/week and/or ≥2 drinks/day or noted as "heavy," "excessive," or "binge" drinker
ETOH abuse presently	Provider diagnosis

Record the highest amount of alcohol use reported within each year. If the level of use is unclear or conflicting, choose the higher level of use as a default. If the frequency conflicts, take the higher level; for example, "one drink daily" equals 7 drinks per week (occasional) but is 7 days per week (frequent) – abstract 'frequent.'

<u>ETOH abuse</u>
ETOH abuse presently or ETOH abuse history requires a provider diagnosis. "ETOH abuse presently" can be coded if it is self-reported, as long as the provider does not contradict or rule out the self-report of ETOH abuse presently. The self-report or provider diagnosis must indicate there is alcohol abuse or the patient is an alcoholic. A provider diagnosis of "Alcohol overuse syndrome" or "alcohol dependence syndrome" can be coded as "ETOH abuse."

<u>History of ETOH abuse</u>
History of ETOH abuse means alcohol abuse prior to the current year that is being abstracted. This is entered in every year prior ETOH abuse appears in the chart. Thus, History of ETOH abuse can be abstracted in a year that a participant does not drink alcohol. "History of alcohol use" should be checked in every year it is mentioned in the chart, independently from the alcohol use status or alcohol treatment status for the year. Mentions of ETOH abuse of a chronic duration should be coded as "History of ETOH abuse." ETOH abuse history can be coded if it is self-reported, as long as the provider does not contradict or rule out the self-report of ETOH abuse history.

<u>Level of Alcohol Use</u>
If there is a range of alcohol use entered, choose the number in the middle. For example, 8-10 drinks/wk = 9 drinks/wk. If alcohol use is not recorded in the medical record, leave blank. Note: if there are two middle numbers in a range, for example 8 and 9 in the range of 7-10 drinks; choose the higher number (9 in this instance). If it is recorded that the patient drinks alcohol, but the frequency is unknown or unable to be determined, choose "Rarely." "Less than one drink per week" should be coded as "Rarely." If the frequency is known to be one drink per week or greater, abstract accordingly even if the type or amount are unknown.

If the type of alcohol is unknown, default to beer, which is the least potent type of alcohol listed below.

If a participant's alcohol use is given as a secondhand report from a family

	member, neighbor, friend, or other contact, the abstractor should use other evidence in the year and/or judgment to determine if the report is valid. If the amount of alcohol use is referred to as "regular drinking" and there is other evidence in the chart in the same year for a higher level than "Rarely," code as "Occasional/Light/Moderate" ETOH use for the year. Earlier versions of the LHMP included four questions about alcohol use and its impacts on the participant's life (CAGE questionnaire). Do not use these questions to determine the level of alcohol use as they do not contain quantities. <u>Alcohol serving sizes</u> 1 drink equals • 12 oz beer • 8-12 oz. wine cooler • 6 oz. malt liquor • 4 oz wine (about 5 servings in a standard size bottle of wine) • 1.5 oz. hard liquor <u>Quantity abbreviations</u> Gal. = Gallon (128 oz.) L. = Liter Oz. = Ounce Pt. = Pint Qt. = Quart (32 oz.) Shot = 1.5 oz. of hard liquor Fifth, 5th = 1/5 of a gallon (750mL or ~ 26 fl. oz. or 17 shots [1.5 oz. serving size]) Jigger = 1.5 oz PEG = 1.5 oz <u>Action</u> The action recommended by the provider should be recorded, even if the patient does not follow through with the treatment type. For example, if the provider recommends counseling, but it is unclear if the patient actually attended counseling, the treatment type "Counseling/counseling referral" should still be recorded. If the provider recommends a treatment type and the patient refuses treatment, code the treatment type recommended. "Refused treatment" should only be selected if the type of treatment recommended is unknown, but it is known that the patient refused. An action type is <u>required</u> if the level of alcohol use is "Frequent" or "ETOH Abuse presently." If the level of alcohol use is "Frequent" or "ETOH Abuse presently" but the provider takes no action, record "None/Unknown" as the Action type. If the level of alcohol use is lower than "Frequent" or "ETOH Abuse presently," and no action is taken, do not code "None/Unknown." If the level of alcohol use is lower than "Frequent" or "ETOH Abuse presently," and an action is taken, "Action" can be selected. For example, a recovering alcoholic who is receiving counseling but is no longer drinking alcohol could be

	coded "Alcohol: None" and "Action: Counseling." A provider diagnosis of alcohol abuse is not needed to code an action or treatment type. If a provider recommends that a participant attend Alcoholics Anonymous (AA) this is coded as "Counseling/Counseling referral." Referral to ADAPT (Alcohol and Drug Abuse Prevention and Treatment) program counts as referral to counseling. Do not record "PCP advise reduction/cessation" if the advice is due to a medical condition other than known or suspected alcohol abuse. For example, some medications or medical conditions are not compatible with alcohol consumption and the patient would be advised to avoid alcohol consumption while taking the medication or while the medical condition is present. <u>Include</u> • If participant goes into ETOH withdrawal during any hospitalization and is treated for ETOH withdrawal during that inpatient hospitalization, the treatment type should be coded as hospitalization. The hospitalization treatment type is collected the same way as hospitalization for anxiety (Section C.2.3), bipolar (Section C.2.7), and depression (Section C.3.1). • If the ETOH problem is severe enough that it would warrant inpatient treatment without other medical co-morbidities, and it is treated during an inpatient hospitalization, it should be coded as treatment type: hospitalization. • "No significant alcohol use" as documented in a chart note (including ER/UC chart notes) should be coded as "Alcohol Use: Rarely." <u>Exclude</u> • Alcohol overdose used as a method of suicide attempt should not be coded as alcohol use for the year. Data collected on the LHMP form should not be entered in duplicate in the Demographics/BP tab in the database. This includes Alcohol.

C.1.3 Physical Activity

Abstraction of this variable was discontinued as of 1/1/2024.

C.1.4 Smoker, Current/History

Note: As of 1/1/2024, cigarette smoking is only abstracted from the paper chart, not Epic. EHR data will be extracted and added to the dataset from clinical records rather than abstracted manually. Abstraction of cigars and pipes was discontinued as of 1/1/2024.

<table>
<tr><td>Description</td><td>Record of current and historical smoking status (cigarettes only)</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Smoking history</td><td>checkbox</td><td>History
pack years: Total number of lifetime cumulative pack years, abstracted from the first documentation within each year. If no documentation of pack year history within the year, leave blank.</td></tr>
<tr><td>Smoker, Cigarettes</td><td>numeric entry</td><td>Number __ __ __/day, week, month, year</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Status of subject’s cigarette smoking habits for a given year</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Tobacco, smoking
Packs per day=PPD (not the same thing as the ppd skin test for tuberculosis)</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, ER/UC notes, PE forms, Epic/chart problem list, specialty visit notes, Epic Snapshot Significant History/Details, Adult Health History Questionnaire (non-LHMP)</td></tr>
<tr><td>Discussion</td><td>Check all that apply.

<u>Current smoking status</u>
If notes indicate the subject smoked at all during the year, record as being a smoker for the entire year by checking the “cigarettes.”

If the number per day, week, month, or year is known, also enter that number. If number of cigarettes per unit (day, week, month, year) is not known, leave the number of cigarettes per unit (day, week, month, year) field blank. Be aware that subject may “quit” smoking numerous times before their final quit date.

If there is a range of cigarettes per day documented, choose the number in the middle. For example, documentation of 2-4 cigarettes per day would be recorded as 3 cigarettes. Note: if there are two middle numbers in a range, for example 8 and 9 in the range of 7-10 cigarettes/day, choose the higher number (9 in this instance). A range listed as 2-3 cigarettes per day could be averaged as 2.5 and rounded up to 3.</td></tr>
</table>

	Record the smoking amount each year from the first documentation of smoking amount found in the medical record that year. You may find discrepancies in amount within a year. Only abstract the first reported smoking amount within the year of interest. The exception is when information in Epic is clearly copied over from year to year. If there is new/original information typed into a visit summary that contradicts it, take the first instance of new information in a year. Historical smoking status One pack of cigarettes contains 20 cigarettes. A "pack year" means that the subject smoked an average of 1 pack of cigarettes (20 cigarettes) per day for 1 year. For example, a subject who smoked 1 pack a day for 30 years would have a 30 pack-year history. If the subject smoked 2 packs of cigarettes (40 cigarettes) per day for 1 year, that would count as 2 pack-years even though it only covered the time period of one calendar year. For example, a subject who smoked 2 packs a day for 30 years would have a 60 pack-year history. If a smoking history is mentioned for the subject, check the "Smoking History" checkbox. If the amount of smoking history is mentioned, you can enter the pack-year history which is listed or calculate the pack-year history (packs per day multiplied by years). If the amount of smoking history is not mentioned, check Smoking History but leave "# pack years" box blank. If there is a range documented, choose the number in the middle. For example, "20-30 yr. smoking history" = 25 years. Note: if there are two middle numbers in a range, for example 8 and 9 in the range of 7-10 cigarettes/day, choose the higher number (9 in this instance). Record the pack-year history each year from the first documentation of pack-year history found in the medical record that year (even if the subject is not a current smoker). You may find discrepancies in smoking pack-year history within a year; only abstract the first reported pack-year history within the year of interest. Code the minimum pack-year history if the years are known but the specific number smoked per day is unknown. For example, "smoked >1pk/day for 26 years" code 26 years, or "smoked for 20 years" code 20 years. If you find contradictory amounts (duration/packs/cigarettes per day) in the same visit, abstract the most specific data. If the subject has a smoking history, but is not a current smoker, check the "Smoking History" box, record the first pack year history documented within the year (if any) and leave the "Smoker, cigarettes," box blank. If the subject has a smoking history indicated and is also a current smoker, indicate both the history and the current status, with amounts for each, if known. Mentions of "chronic smoking" should be coded as "smoking history." Round pack years up to the nearest year. For example, if a subject has 5.5 pack years, round to 6 years. A subject must have smoked at least 100 cigarettes (5 packs) in their lifetime in order to be considered to have a smoking history.

	Smoking Pack Year Calculator "Smoking history" checkbox can be checked without entering a value in the numeric text box for "# pack year." However, "Smoking history" checkbox must be checked in order to enter a value in "# pack year." A Smoking Pack Year Calculator was created in Excel, based upon the online version found at http://smokingpackyears.com/. This calculator simplifies the task of calculating pack years when a subject changed their smoking habits over the years. We have recorded the formulas used in the calculator, to have available for reference. The formulas in the calculator as of 2/09/2011 are listed below. 1 pack year = 20 cigarettes/day * 365 days/year = 7300 cigarettes Abstractors can access the tool here: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Database Work Area\Smoking\Smoking Pack Year Calculator Formulas 20110209.xls Data collected on the LHMP form should not be entered in duplicate in the Demographics/BP tab in the database. This includes Smoking.

C.1.5 Stress ("Life Changes")

Abstraction of this variable was discontinued as of 1/1/2024.

C.1.6 Weight

Note: As of 1/1/2024, this variable is only abstracted from the paper chart, not Epic. EHR data will be extracted and added to the dataset from clinical records rather than abstracted manually.

<table>
<tr><td>Description</td><td>Record of weight</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Weight</td><td>numeric text entry</td><td>_ _ _ lbs
_ _ _ kilograms</td><td>Date measured _ _/ _ _/ _ _ _</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Subject’s first recorded weight in a year</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>WT, Wt</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, PE forms, Epic Flow Sheet Vitals, Lifetime Health Monitoring Program Questionnaire, Adult Health History Questionnaire (non-LHMP), X-ray/radiology reports</td></tr>
<tr><td>Discussion</td><td>Hierarchy of weights
1. Chart note where an in-office weight was taken. In-office weight has priority over self-report even if the in-office weight is later in the time period.
2. Self-reported weights listed on radiology reports, ECGs, breast cancer screening forms, or other self-reports.

Record the weight taken at a visit rather than a self-report, if possible. Enter the date the weight was measured.

Take dry weight, if given. Dry weight is body weight without any excess fluid in the lungs or in the tissues. Dry weight may be recorded for patients undergoing hemodialysis, where fluctuations of several kilos between dialysis cycles are frequent.

Round weight less than ½ lb/kilo down to lower weight; round weight of ½ lb/kilo or higher up to higher weight.

If the weight is taken from an X-ray report slip where several different dates are recorded (date ordered, date performed, and date read), use the typed date in the lower left-hand corner. This is usually the date the X-ray is performed. Choosing this date will standardize results between multiple abstractors.

If the weight for the year is unknown, leave blank. If the date the weight was taken is unknown, leave the date field blank.</td></tr>
</table>

C.1.7 Functional Status

Abstraction of this variable was discontinued as of 1/1/2024.

C.1.8 Residence

Abstraction of this variable was discontinued as of 1/1/2024.

C.1.9 Home Health Services

Abstraction of this variable was discontinued as of 1/1/2024.

C.2 Med Cond/Proc (A-C)

C.2.1 AICD

Abstraction of this variable was discontinued as of 1/1/2024.

C.2.2 Angina

Description	Diagnosis of angina
Codes	<table><tr><td>Angina</td><td>checkbox</td></tr></table> Click if present in that year.
Definition	Angina is chest pain due either to reduced blood flow to the heart or to certain other abnormalities of heart function. Angina is thought to be due to an imbalance between oxygen demand by the heart and oxygen supply. Hardening (atherosclerosis) of the coronary arteries that feed the heart is usually the underlying problem. Spasms of the coronary arteries may also cause angina.
Abbreviations/ Synonyms	Angina pectoris
Sources	Cardiology visit notes, emergency room report, hospital discharge summaries, MD or provider visits notes
Discussion	There are three main types of angina: <u>Stable angina</u> This type of chest pain comes on during exercise and is both common and predictable. Stable angina is most often associated with atherosclerosis. Stable angina is relieved with rest and/or nitroglycerine. <u>Variant angina</u> Can occur at rest or during exercise. This type is primarily due to sudden coronary artery spasm, though atherosclerosis may also be a component. <u>Unstable angina</u> This is similar to stable angina, but is marked by either increasing severity of pain with the same amount of exercise that used to be tolerated well; less vigorous types of exercise produce pain; or pain at rest. Unstable angina is the most severe type and occurs with no predictability and can quickly lead to a heart attack. Unstable angina may represent (acute) worsening of coronary stenosis, such as development of an unstable plaque, and is typically treated by urgent hospitalization as if it were an acute myocardial infarction. Together with acute myocardial infarction, unstable angina is classified as an “acute coronary syndrome” (ACS). The patient must have a diagnosis of angina for each discrete event of angina. <u>Include</u> • An angina exacerbation can be coded as an active condition for the year if the subject had a previous diagnosis of angina and is symptomatic.

	Exclude • Do not assume references to "chest pain" are angina. It depends on what the patient was doing at the time. Angina increases with exertion. Experiencing relief through rest or nitroglycerine indicates an angina exacerbation. • Do not code stable or controlled angina with no acute exacerbations. • If the angina is not diagnosed as "angina" until it is no longer a problem, it should not be coded. For example, it may initially be diagnosed as "chest pain," which we do not code as angina. Later it may be diagnosed as angina (which can be coded), but the initial diagnosis of "chest pain" should not be coded as angina. • Do not code angina if antianginal meds are offered or prescribed in the absence of a diagnosis of angina. Active Condition coding includes: Referral to cardiologist, referral to hospice for terminal angina, or exacerbations in the year. Pre-1977 medication change.

C.2.3 Anxiety

<table>
<tr><td>Description</td><td>Documentation of anxiety</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Anxiety</td><td>checkbox</td><td></td></tr>
<tr><td>Diagnosis type</td><td>drop-down</td><td>Mental health provider
Other provider dx./consider problem
Self report</td></tr>
<tr><td>Action</td><td>drop-down</td><td>Hospitalization
Counseling + Medication
Medication
Counseling/Counseling referral
Refused treatment
None/Unknown</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>A feeling of apprehension and fear characterized by physical symptoms such as palpitations, sweating, and feelings of stress. Anxiety disorders are often chronic, relentless, and can grow progressively worse if not treated.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Anxiety neurosis, anxiety tension state (ATS), “battle of nerves,” generalized anxiety disorder (GAD), panic attacks, panic disorder, phobias, nervous breakdown, obsessive-compulsive disorder, “psychoneurosis hysteria,” or situational anxiety. Also code a description of the patient as “anxious,” “nervous,” “irritable,” or a diagnosis of “tension” in conjunction with a prescription for a medication used to treat anxiety.</td></tr>
<tr><td>Sources</td><td>Emergency room report, MD or provider visit notes, mental health visit notes, telephone encounters, urgent care reports</td></tr>
<tr><td>Discussion</td><td>Anxiety is often paired with depression. An active condition might include a change in anti-anxiety medication (Pre-1977 only) or having an anxiety attack. Anxiety or one of the abbreviations/synonyms for anxiety listed above must be mentioned in the medical record. Do not consider a prescription for an anti-anxiety medication in the absence of mention of anxiety in the medical record to be anxiety. A description of the patient as “anxious,” “nervous” or a diagnosis of “tension” in conjunction with a prescription for a medication used to treat anxiety can be coded as anxiety.

<u>Provider diagnosis types</u>
“Mental Health Provider” includes psychiatrists, psychologists, Psych ARNPs, licensed counselors or social workers.</td></tr>
</table>

	"Other provider" includes any other provider who is not a mental health provider, such as PCPs, specialists, hospitalists, ARNPs, PAs. An ICD-9 code consistent with anxiety can be used as a diagnosis if it is in the Assessment or Diagnosis section of the chart note. Self-Report diagnosis type Documentation in medical visit notes, telephone encounters, or email messages of a subject or their family members reporting symptoms or a medical condition. Self-report of "battle of nerves" and "nervous breakdown" can be coded as self-report of anxiety. The hierarchy of provider diagnosis types is listed in the drop-down menu. Use the highest level of provider and treatment recommendations over the course of the year. The hierarchy is as follows, with Mental Health Provider being the highest priority provider diagnosis type: 1. Mental health provider 2. Other provider dx./consider problem 3. Self report Action (treatment type) The action recommended by the provider should be recorded, even if the patient does not follow through with the treatment type. For example, if the provider recommends counseling, but it is unclear if the patient actually attended counseling, the treatment type "Counseling/counseling referral" should still be recorded. If the provider recommends a treatment type and the patient refuses treatment, code the treatment type recommended. "Refused treatment" should only be selected if the type of treatment recommended is unknown, but it is known that the patient refused. The hierarchy of action (treatment types) is listed in the drop-down menu. Use the highest level of provider and treatment recommendations over the course of the year. The hierarchy is as follows, with Hospitalization being the highest priority action (treatment type): 1. Hospitalization 2. Counseling + Medication 3. Medication 4. Counseling/Counseling referral 5. Refused treatment 6. None/Unknown Hospitalization means hospitalization in a psychiatric unit. Do not count hospitalization on a medical unit unless the anxiety is severe enough that it would have warranted a psychiatric unit admission, in the absence of other medical co-morbidities. Counseling treatment must be from a mental health professional and not from a primary care provider.

	<u>Exclude</u> Exclude the following treatments as indicators of an active condition or as a treatment type for the initial diagnosis of anxiety: • acupuncture • massage • yoga • relaxation classes • meditation Exclude anxiety/paranoia/panic attacks if the onset occurs after dementia diagnosis because these are part of the natural progression of dementia, not a separate anxiety spectrum disorder. <u>Active Condition coding includes:</u> Referral to mental health professional or hospitalization, anxiety attack. Pre-1977 medication change.

C.2.4 Arthritis

<table>
<tr><td>Description</td><td>Diagnosis of arthritis</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Arthritis</td><td>checkbox</td></tr>
<tr><td>Osteoarthritis
Rheumatoid Arthritis</td><td>checkboxes</td></tr>
<tr><td>Prescription NSAID</td><td>checkbox</td></tr>
<tr><td>Prescription Steroid</td><td>checkbox</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Arthritis is inflammation of a joint, usually accompanied by pain, swelling, and frequently changes in structure</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Osteoarthritis (OA), rheumatoid arthritis (RA), degenerative joint disease (DJD), hypertrophic arthritis</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, orthopedic visit notes, rheumatology visit notes, CT scans, X-ray reports, Imaging tab in Epic for CT scans and X-rays</td></tr>
<tr><td>Discussion</td><td>Code all that apply

Osteoarthritis (OA) is a chronic disease involving the joints, especially those bearing weight. Also known as degenerative arthritis, wear and tear arthritis, degenerative joint disease (DJD), hypertrophic. If MD just writes “arthritis,” they are documenting OA. Facet Arthritis is included in this category. OA should only be abstracted once.

An X-ray report reading rules out a possible or probable diagnosis in a chart note. For example, a provider suspects osteoarthritis, diagnoses it as “?OA”, and orders an X-ray to rule out or confirm OA. No OA is found by the radiologist. The X-ray report should be the final diagnosis of no OA at that time.

Osteoarthritis diagnosed on X-ray alone without correlation in chart notes should not be abstracted, since we consider osteoarthritis a clinical diagnosis. For example, if OA of a new joint is found incidentally on X-ray and is not considered or discussed by a provider, the diagnosis should not be abstracted from the X-ray report alone. However, if OA is diagnosed on X-ray and also diagnosed by a provider, it can be abstracted. If osteoarthritis of a joint is diagnosed on an X-ray in one year, but not mentioned in a clinician’s note until a later year, use the clinician’s note as the date/year of diagnosis.</td></tr>
</table>

	Exclude self-reports of arthritis in a new joint by a provider in an unrelated specialty which is never followed up or confirmed elsewhere. Rheumatoid arthritis (RA) is a chronic systemic disease characterized by inflammatory changes in joints and related structures that result in crippling deformities. Also known as atrophic, deformans. If "rheumatism" is ever diagnosed as RA, the first mention of "rheumatism" can be coded as RA. If "polyarthritis" is ever diagnosed as RA, and sometimes referred to as "polyarthritis," it can be coded as RA. Psoriatic arthritis, Inflammatory arthritis, and Ankylosing Spondylitis may be abstracted as arthritis. Do not check Osteo or Rheumatoid as the type. Record in Conditions of Note that it is psoriatic arthritis, inflammatory arthritis, or ankylosing spondylitis. Prescription NSAIDs (non-steroidal anti-inflammatory drugs) A check in this category signifies that the NSAID is prescribed for Arthritis. ASA (aspirin) and Ibuprofen are available without a prescription (over-the-counter), but should be included as a "Prescription NSAID" if the provider has 'prescribed' them to treat arthritis (for example "recommended that the patient take 800 mg ibuprofen TID; cheaper over the counter"). If the patient is on a chronic NSAID for arthritis but arthritis is not an "active condition" for the year, check the Prescription NSAID box only and do not check the 'Arthritis' box. Do not collect NSAIDs if they are prescribed for a chronic condition other than arthritis (such as tendonitis, bursitis, back pain, headaches, etc.). Chronic ASA use is set forth at the time of prescription by the doctor. We are collecting NSAID use in order to evaluate the severity of the arthritis. If a subject is taking ASA for arthritis, it is coded as both an NSAID for arthritis and ASA. Include both over-the-counter and prescription NSAIDs and ASA. Refer to Medications Appendix D.6.4 NSAID list to become familiar with the NSAIDs that are included. If you find "continue xxx medication for xxx pain" and the xxx pain was defined as OA the previous year and the same medication (NSAID) was given, then you can presume that this continued medication is prescribed to treat OA in the current year (as long as there isn't other pain in that area noted that is not OA). In other words, if there is no reason to suspect the participant is taking NSAIDs/aspirin for another reason (e.g., heart, acute injury), abstract continued use of NSAIDs. Do not abstract for p.r.n. or 'as needed'. Baby aspirin (81 g) is unlikely to be taken for arthritis. Prescription Steroids (corticosteroids) A check in this category signifies that a steroid is prescribed for arthritis. The interest is systemic steroids. **Do not include steroid injections**. If the patient is on a chronic systemic steroid for arthritis, but arthritis is not an "active condition" for the year, check the Prescription Steroid box only and do not check the 'Arthritis' box. Do not collect prescription steroids if they are prescribed for a chronic condition other than arthritis. We are collecting oral steroid use in order to evaluate the severity of the arthritis.

	Refer to Medications Appendices D.6.4 NSAID list and D.6.3 Steroid list. <u>Exclude</u> • Exclude osteoporosis, osteopenia (bone thinning), para-arthritis, and septic arthritis. They are not the same thing as osteoarthritis. • Polymyalgia Rheumatica, Temporal Arteritis (which is an artery disease and not a joint disease), and Gouty Arthritis are not considered arthritis for these purposes and should not be recorded in this section, but should be recorded in the Conditions of Note box. If non-prescription medications such as chronic NSAIDs (for arthritis) are listed on the LHMP form, they can also be listed in the Arthritis: NSAIDs section. Chronic NSAIDs mentioned on the LHMP Question should only be abstracted under Arthritis: NSAIDs if the subject takes them for arthritis. For progressive conditions, including arthritis, if a subject receives a diagnosis from a non-specialist, then later sees a specialist (even in a later year) who does formal testing and rules out the diagnosis, remove the original diagnosis from the record.

C.2.5 ASA Use, Chronic

<table>
<tr><td>Description</td><td>Documentation of chronic aspirin (ASA) use</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>ASA</td><td>checkbox</td><td></td></tr>
<tr><td>Discontinuation of ASA</td><td>checkbox</td><td></td></tr>
<tr><td>Discontinuation Date</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Reason for Discontinuation</td><td>text box</td><td></td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>ASA Use: Use of aspirin on an ongoing basis

Discontinuation of ASA: Record of discontinuation of regular aspirin use in a given year</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Anacin arthritis formula (compound of ASA, APAP & caffeine), ASA, aspirin, Bayer, Bufferin, Easprin, Ecotrin, EC (enteric coated) aspirin (ECASA), Empirin, Trilisate, baby aspirin, extra-strength aspirin, Agranox, Emprazil (codeine product with some aspirin in it)

For reference, there is an exhaustive list of medications containing aspirin (as of January 2012) here: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\References\Meds containing aspirin.pdf</td></tr>
<tr><td>Sources</td><td>To include, but not limited to: MD or provider visit notes, Medication flow sheets in the chart or in the Medication tab in Epic, optometry / ophthalmology records, LHMP</td></tr>
<tr><td>Discussion</td><td>ASA Use

We are collecting NSAID use in order to evaluate the severity of the arthritis. If a subject is taking ASA for arthritis, it is coded as both an NSAID for arthritis and ASA. Include both over-the-counter and prescription NSAIDs and ASA. Refer to Medications Appendix D.6.4 NSAID list to become familiar with the NSAIDs that are included.

<u>Include</u>
• Chronic aspirin use for any medical condition (to include, but not limited to, osteoarthritis or other chronic medical conditions, or cardiac/stroke prevention) can be abstracted as long as the medical record states that the condition is chronic, or that the aspirin is taken on an ongoing basis.
• Chronic ASA use is set forth at the time of prescription by the doctor.</td></tr>
</table>

	• Wording that might indicate the ASA is prescribed chronically includes, but is not limited to: ASA qd, daily, once daily, or qhs. • If the aspirin is taken for reasons other than cardiac prevention, it must be taken on a chronic basis to be abstracted. • Include ASA prescriptions in Epic medication list and chart medication flow sheets. • Include mentions of "ASA" on a med list with no mention of frequency or indication, to include, but not limited to, mentions on ophthalmology records, and chart notes. • Compound medications which include ASA in any amount should be counted as ASA Use, Chronic, if the compound medication is taken chronically. • If chronic aspirin use is listed on the LHMP (without specifying that it's being taken for arthritis), it can be abstracted as chronic ASA use. If the chronic aspirin use is noted as being for arthritis, both ASA and NSAID should be abstracted. <u>Exclude</u> • **Do not collect sporadic ASA use for headaches or pain.** • Do not collect aspirin prescribed short-term for a specific acute condition or "prn" (as needed) for aches and pains. • When abstracting ASA discontinuation, chronic ASA use should be left blank if there is no evidence in the year that the patient was prescribed chronic ASA. **Discontinuation of ASA** <u>Include</u> • ASA discontinuation for any reason (except temporary discontinuation in preparation for surgery) should be recorded. Collection of the reason for discontinuation is not limited to contraindication or intolerance. • Use the best estimate for discontinuation date of ASA in a year. If the date of discontinuation is unknown, leave the date field blank. • Record reason(s) for discontinuation in "Reason for discontinuation" textbox. Be brief and use the patient's or doctor's own words. For example, upset stomach, GI bleed, or starting coumadin or other blood thinners might be reasons listed for discontinuation. Document the reason exactly as it is noted in the chart. If no reason is listed, leave the "Reason for Discontinuation" box blank. • If the reason for discontinuation of ASA was due to contraindication or intolerance, record the reason in the "Reason for Discontinuation" text box. Do not enter ASA discontinuation in the Ceased Medications module in the Access database. • ASA <u>discontinuation</u> may be documented in the chart in the absence of documentation of chronic ASA <u>use</u>. For example, a chart note states that the patient was advised to discontinue ASA. However, there is no

	prior evidence in the year that patient was prescribed chronic ASA. In this case, abstract the ASA discontinuation, date, and reason, if known, but do not abstract chronic ASA use. Chronic ASA use should be left blank if there is no evidence in the year that the patient was prescribed chronic ASA. • ASA could be discontinued multiple times over the patient's life and the discontinuation should be recorded each time. • If non-prescription medications such as chronic NSAIDs (for arthritis) are listed on the LHMP form, they can also be listed in the Arthritis: NSAIDs section. Chronic NSAIDs mentioned on the LHMP Question should only be abstracted under Arthritis: NSAIDs if the subject takes them for arthritis. <u>Exclude</u> • Do not count temporary discontinuation in preparation for surgery. • Do not count discontinuation for a day because of a nosebleed. Paul is interested in semi-permanent discontinuation rather than day-to-day fluctuations, i.e., if they are no longer at risk for exposure.

C.2.6 Asthma

Description	Diagnosis of asthma
Codes	Asthma: checkbox
Definition	A common disorder in which chronic inflammation of the bronchial tubes (bronchi) makes them swell, narrowing the airways Asthma involves only the bronchial tubes and does not affect the air sacs (alveoli) or the lung tissue (the parenchyma of the lung) itself.
Abbreviations/ Synonyms	Reactive airway disease, RAD, asthmatic bronchitis
Sources	Emergency room reports, MD or provider visit notes, pulmonary visit notes, urgent care reports, Epic/chart problem list
Discussion	Often confused with COPD. Asthma is reactive in that it responds to bronchodilators. Reversible obstruction may be seen on pulmonary function testing (PFT), but does not require pulmonary function testing to make the initial diagnosis. An initial diagnosis of asthma can be abstracted if it is diagnosed in visit notes or reported as a medical history item. Most asthma starts in childhood or adolescence. COPD on the other hand is usually associated with smoking (while asthma may be completely independent of smoking). COPD tends to be less responsive (if at all) to bronchodilator treatment during pulmonary function testing. Exclude: • Chronic obstructive asthma which should be coded as COPD Include • Asthmatic bronchitis can be abstracted as asthma. For progressive conditions, including asthma, if a subject receives a diagnosis from a non-specialist, then later sees a specialist (even in a later year) who does formal testing and rules out the diagnosis, remove the original diagnosis from the record. If the patient is seen same-day for asthma (even if it's an outpatient visit with their usual care provider), it counts as an exacerbation because it was not an otherwise scheduled visit. If the doctor happens to notice breathing during a visit for another reason, that would not count as an exacerbation. Active Condition coding includes: Referral to specialist (pulmonologist), seen in ER/UC or hospital admission for asthma exacerbation. Pre-1977-medication change.

C.2.7 **Bipolar**

Abstraction of this variable was discontinued as of 1/1/2024.

C.2.8 Blood Transfusion

Description	Record of a blood transfusion
Codes	Blood transfusion: checkbox
Definition	The process of transferring blood or blood-based products from another person into the circulatory system of the subject in a given year.
Abbreviations/ Synonyms	RBCs, PRBCs, whole blood, platelets, FFP, Cryoprecipitated Antihemophilic Factor (AHF), Cryoprecipitated AHF, cryo (be sure it refers to cryoprecipitate blood product)
Sources	Operative reports, hospital discharge summaries
Discussion	Subject may be inpatient or outpatient. Accompanying documentation may be laboratory orders and/or results for type and cross match, or a note about a transfusion reaction. Note that type and cross match does not mean that blood was transfused; that would require separate documentation. Do not collect autologous blood transfusion (where the subject donates his or her own blood prior to surgery for possible transfusion during surgery). If a transfusion has occurred prior to the subject becoming a GHC member, enter the year the subject received the transfusion and check "Blood Transfusion." We are interested in every blood product, which includes: fresh frozen plasma (FFP), platelets, cryoprecipitate, packed red blood cells (PRBCs), antihemophilic factor (AHF), and whole blood.

C.2.9 CABG

Description	Record of a CABG procedure
Codes	CABG | checkbox
Definition	Coronary Artery Bypass Graft
Abbreviations/ Synonyms	Coronary artery bypass graft, 5 way (5 vessel), 3 way (3 vessel)
Sources	Cardiology visit notes, operative reports, outside GHC hospital discharge reports, Epic/chart problem list
Discussion	CABG surgery is a form of bypass surgery to create new routes around narrowed and blocked coronary arteries, permitting increased blood flow to deliver oxygen and nutrients to the heart muscle. The diseased sections of coronary arteries are bypassed with healthy artery or vein grafts. This is a big open chest surgery. Cardiac catheterizations (tube inserted into vein/artery) and angiograms (dye through tube/x-ray) both emphasize diagnostic procedures. Angioplasty (stent/balloon) and CABG (grafting) are treatment/therapeutic intervention. Redirecting vs opening up (i.e. angioplasty) grafting vs stenting balloon. This surgery is usually performed outside of GH/KPWA.

C.2.10 Cancer

<table>
<tr><td>Description</td><td>Diagnosis of cancer (medical term is malignant neoplasm)</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Cancer</td><td>checkbox</td><td></td></tr>
<tr><td>Dx. this year</td><td>checkbox</td><td></td></tr>
<tr><td>Recurrent</td><td>checkbox</td><td></td></tr>
<tr><td>Metastatic</td><td>checkbox</td><td></td></tr>
<tr><td>Type</td><td>drop-down</td><td>Bladder
Breast
Colon and Rectal
Endometrial
Kidney (renal cell)
Leukemia (includes AML & CLL)
Lung
Melanoma
Non-Hodgkin’s Lymphoma (NHL)
Pancreatic
Prostate
Thyroid
Other
text box for “other” type</td></tr>
<tr><td>Tx (treatment)</td><td>checkboxes</td><td>Surgical
Chemotherapy
Radiation
Other
text box for “other” type</td></tr>
</table>
> button to add additional records

Delete Record button
</td></tr>
<tr><td>Definition</td><td>An abnormal growth of cells which tend to proliferate in an uncontrolled way and, in some cases, to metastasize (spread)</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>CA, ca</td></tr>
<tr><td>Sources</td><td>Cancer staging reports, oncology visit notes, pathology report, radiology visit notes, Epic/chart problem list</td></tr>
<tr><td>Discussion</td><td>If cancer is an active condition (receiving treatment or diagnosis in the year) check the “cancer” checkbox.</td></tr>
</table>

	Cancer Diagnosed this Year If cancer was diagnosed within the year, check the "dx. this year" checkbox. If cancer was diagnosed in a previous year, do not check this box, unless it is a new and distinct cancer. Do not code metastases as "dx. this year." Do not abstract in situ or a benign tumor; for breast cancer, do not abstract DCIS (ductal carcinoma in situ), LCIS (lobular carcinoma in situ), or Stage 0 (non-invasive, non-malignant). Include molar pregnancy if cancerous. Do not abstract MDS (myodysplastic syndrome) as it is anemia, not yet leukemia. Do not abstract "presumed" or "probable" cancer diagnosis. This is often seen at end of life. Only code as a cancer diagnosis if there is pathology to confirm. Recurrent Cancer If a cancer is diagnosed as recurrent, check the "recurrent" checkbox. Record recurrence in the year it recurs. Mark each recurrence only in the year it first recurred, if the same recurrence is present continually over multiple years. For example, breast cancer occurs and is cured. Five years later, it recurs and the recurrence is present over two consecutive years. Record "Recurrent" only in the first year of the recurrence. In order for a cancer to be recurrent, it must occur in a site, be completely treated and cured, and then later re-occur in the same organ/site. If a cancer originally occurs in a paired organ (breast, testicles, ovaries, lungs, kidneys (renal cell carcinoma)), it must recur in the same-side organ ("ipsilateral") in order to be recorded as "recurrent." For example, if breast cancer occurs in the L breast in 1990, and recurs in the L breast in 1998, count as recurrent. If cancer occurs in the L breast in 1990 and occurs in the R breast in 1998, do not count as recurrent. For singular organs (e.g., liver, bladder) any subsequent cancer in the same organ is a recurrence. Metastatic Cancer If the cancer is metastatic, check the "metastatic" checkbox. Do not record the site(s) of the metastases. Record the primary site only. See below for a discussion about metastases. If the cancer metastasizes in a subsequent year, enter the primary site of the cancer in both the previous and subsequent year(s) and check the Metastatic checkbox in the initial subsequent year of the metastases. Only abstract the initial year of a metastasis to each individual organ (i.e. a "new" metastasis). Example: a woman with breast CA, metastatic to lung in Y2, metastatic to liver in Y3. She has breast CA in Y1, Metastasis in Y2, and Metastasis (a new one) in Y3.

	compared with
	
	Example: a woman with breast CA, metastatic to lung in Y2, another note in Y3 indicates presence of breast CA in the lung.
	She has breast CA in Y1,
	Metastasis in Y2,
	and No metastasis recorded in Y3.
	
	Record cancer which is described as widely metastatic. Do not record adjacent lymph node metastases. If the TNM Cancer Staging System (see below) is recorded, be sure the cancer is "M1." The most common sites of metastases from solid tumors are lungs, bones, liver, and brain. Metastasis means the spread of cancer. Cancer cells can break away from a primary tumor and enter the bloodstream or lymphatic system (the system that produces, stores, and carries the cells that fight infections). That is how cancer cells spread to other parts of the body. When cancer cells spread and form a new tumor in a different organ, the new tumor is a metastatic tumor. The cells in the metastatic tumor or their progenitors come from the original tumor. This means, for example, that if breast cancer spreads to the lungs, the metastatic tumor in the lung is made up of cancerous breast cells (not lung cells). In this case, the disease in the lungs is metastatic breast cancer (not lung cancer). Under a microscope, metastatic breast cancer cells generally look the same as the cancer cells in the breast. Do not code the site(s) of the metastases.
	
	You do not need to code TNM; the information below is just for your information to determine whether the cancer is metastatic.
	
	TNM Cancer Staging System
	
	• **T** (a, is, (0), 1–4): size or direct extent of the primary **T**umor
	• **N** (0–3): degree of spread to regional lymph **N**odes
	  o N0: tumor cells absent from regional lymph nodes
	  o N1: tumor cells spread to closest or small number of regional lymph nodes
	  o N2: tumor cells spread to an extent between N1 and N3.
	  o N3: tumor cells spread to most distant or numerous regional lymph nodes
	• **M** (0/1): presence of **M**etastasis
	  o M0: no distant metastasis
	  o M1: metastasis to distant organs (beyond regional lymph nodes)
	
	Use of an "X" in the TNM system instead of a number or other suffix means that the parameter was not assessed.
	
	http://www.cancer.gov/cancertopics/factsheet/Sites-Types/metastatic
	
	For progressive conditions, including cancer, if a subject receives a diagnosis from a non-specialist, then later sees a specialist (even in a later year) who does formal testing and rules out the diagnosis, remove the original diagnosis from the record.

	Type of Cancer Record the type of cancer in the drop-down menu. If the type of cancer is not listed in the drop-down menu, or if the primary site is unknown, select "other" and enter the type or "unknown primary site" in the text box. If the primary site is unknown but a likely or probable primary site is identified, "likely/probable" is sufficient to code the primary site. Record the organ that the cancer occurs in. For example, ductal carcinoma should be recorded as breast cancer, and cecal adenocarcinoma should be recorded as colon cancer. In the case of skin cancer, record only melanoma. Do not record basal cell carcinoma or squamous cell carcinoma, even if the patient received radiation or chemo for it (although it can be noted in Conditions of Note). Count "lentigo maligna melanoma" as melanoma. Exclude Do not abstract carcinoma in situ or benign tumors as cancer. Do not abstract basal cell or squamous cell carcinoma. Cancer Treatment Enter the treatment(s) for the cancer using the checkboxes. More than one type of treatment can be selected within each year. If the treatment type is not listed in the options below, choose "Other" and type the treatment type in Conditions of Note. Code treatment in each year it is given, even if it is prophylactic. Treatment could include: • Surgical (including fulguration, TURP, mastectomy, and nephrectomy; do not count biopsies that were done for diagnostic purposes as treatment, even if the biopsy removed all of the cancerous tissue) • Chemotherapy (including BCG; if BCG, write in Cond. of Note) • Radiation (but not for palliative care) • Other Or, a combination of these. Code all that apply. Other treatment types could include, but are not limited to: 1. Angiogenesis Inhibitors Therapy 2. Biological Therapies 3. Gene Therapy 4. Hyperthermia 5. Lasers (high-intensity light) 6. Photodynamic Therapy 7. Targeted Cancer Therapies (drugs that block the growth and spread of cancer by interfering with specific molecules involved in carcinogenesis) Notes about 'Treatment Type: Other' - Do not abstract watchful waiting since treatment is not being administered. - Do not abstract XRT for palliative care since its purpose is pain management rather than active treatment.

	- Do not record oral adjuvant medications such as Tamoxifen, or hormonal treatments such as Lupron as "Other" cancer treatment type. These types of medications are included in the GHC electronic pharmacy data and do not need to be abstracted in the "Cancer" section of the Access database. - Do not abstract topical creams that are used to treat melanoma. If more than one distinct cancer was diagnosed, recurred, or treated in a given year, code separately, up to 4 types if needed, using the scrolling feature to go to a new record. Do not record the site of metastases as a cancer type. <u>Active Condition coding includes:</u> New diagnosis, tx. (chemo, radiation, surgery, other), recurrence, metastasis. Capture each year they get a treatment, even if not a new dx. If the same treatment is ongoing in another year, code in both years.

C.2.11 Cardiac Arrest

Description	Diagnosis of cardiac arrest
Codes	Cardiac arrest: checkbox
Definition	The sudden cessation of heartbeat and cardiac function resulting in the loss of effective circulation The sudden and life-threatening onset of chaotic and unproductive heart rhythm caused by an arrhythmia
Abbreviations/ Synonyms	Sudden cardiac arrest, SCA, sudden cardiac death, cardiopulmonary arrest, cardiorespiratory arrest
Sources	Death certificate, emergency room reports, hospital discharge summary, Medic 911 care reports
Discussion	This is not the same as an MI (heart attack), although a heart attack can cause cardiac arrest. Cardiac arrest requires cardiopulmonary resuscitation (CPR) or defibrillation to be survivable. The most common rhythm resulting in sudden cardiac death is ventricular fibrillation (VF), which is diagnosed with a cardiac monitor attached to the patient's chest with leads or paddles. Once the diagnosis of ventricular fibrillation is made, rapid shocks (defibrillation) can restore sinus rhythm. Defibrillators are in every police car, fire truck, and many public places such as restaurants and airports. Many people who have had sudden cardiac death and been resuscitated will have an implanted automated cardioverter defibrillator (AICD). Active Condition coding includes: Abstract every time it occurs, specialist referral (cardiologist), surgery

C.2.12 Carotid Endarterectomy

Description	Record of a carotid endarterectomy procedure
Codes	Carotid endarterectomy: checkbox
Definition	Carotid endarterectomy is a surgery in which the obstructing plaques from the carotid arteries (to the brain) are removed to prevent future TIAs or strokes. The purpose is to improve blood flow to the brain.
Abbreviations/ Synonyms	CEA
Sources	Operative reports, specialty visit notes
Discussion	Strokes, TIAs and death are not infrequent complications of this procedure. The surgeries are sometimes done soon after a TIA. The surgery will follow diagnostic evaluation now done typically with ultrasound to determine whether the carotid arteries are stenotic.

C.2.13 CHF

<table>
<tr><td>Description</td><td>Diagnosis of congestive heart failure (CHF) or heart failure (HF)</td></tr>
<tr><td>Codes</td><td>Initial episode CHF (In Form 1: History) (This is a one-time only entry)
<table><tr><td>CHF, date of initial diagnosis</td><td>date entry</td><td>mm/dd/yyyy</td></tr></table>
Subsequent years CHF (In Form 2: Yearly Conditions) (This will be entered in all subsequent years in which CHF exacerbations are present)
<table><tr><td>CHF exacerbation this year</td><td>drop-down</td><td>0
1
2
3
4 or more</td></tr></table></td></tr>
<tr><td>Definition</td><td>Inability of the heart to keep up with the demands on it and failure of the heart to pump blood with normal efficiency.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>CHF – Congestive heart failure, heart failure, left ventricular systolic dysfunction, left ventricular diastolic dysfunction, systolic dysfunction, diastolic dysfunction</td></tr>
<tr><td>Sources</td><td>Cardiology visit notes, emergency room reports, hospital discharge summaries, MD or provider visit notes, urgent care reports, Epic/chart problem list</td></tr>
<tr><td>Discussion</td><td>CHF involves a constellation of symptoms (shortness of breath, fatigue, orthopnea, paroxysmal nocturnal dyspnea (PND) and physical signs (edema/swelling, rales, tachycardia, a gallop or S3 rhythm) that occur when cardiac output can’t match metabolic needs.

CHF can occur transiently during times of acute stress such as pneumonia or a GI bleed in an elderly person. CHF can also be a chronic condition and may result from years of high blood pressure, a cardiomyopathy, valvular heart disease, and/or a previous MI.

Traditional treatment includes a low salt diet and medications.

Many of these medications may be used for other indications as well:
Furosemide (Lasix)
ACE inhibitors (enalapril/Vasotec; lisinopril/Prinivil or Zestril; captopril/Capoten)
Digitalis preparations (digoxin/Lanoxin)
Vasodilators
Hydralazine/Apresoline</td></tr>
</table>

	Nitrates Beta-blockers CHF needs a clinical diagnosis, i.e., it can't be abstracted from an imaging report without an accompanying clinical dx. The echo report is the report of a test, but CHF as a diagnosis is the clinical syndrome. Systolic and diastolic failure both count as CHF. Systolic heart failure is when the left ventricle doesn't have much squeeze – EF less than 0.4. Diastolic heart failure is failure of the ventricle to fill in the first place. Bulky muscle doesn't relax well for blood to go in. Either way the result is similar – blood builds up. Can have great EF (70%) and still have CHF if they have diastolic heart failure – CHF is a clinical syndrome/dx. <u>Initial episode date</u> Record the date of the initial onset in the "Initial Diagnoses" tab in Form 1: History. This can be diagnosed at in-person visits to an outpatient clinic, ER, Urgent Care, and hospital admission. Administration of IV diuretics is not required to abstract the initial episode of CHF. There is no need to differentiate between compensated vs. non-compensated CHF. The initial episode is a distinct event from an acute exacerbation and should not be double-coded as both the initial episode and an acute exacerbation. Do not record additional acute exacerbations during the initial year of diagnosis. <u>Ejection Fraction tests</u> If the patient has any Ejection Fraction (EF) tests performed in the initial year or in subsequent years of CHF, record them in the Ejection Fraction Test section in the Yearly Conditions tab D-L. EF is recorded independently from CHF. <u>Subsequent year CHF exacerbation</u> A CHF exacerbation is defined as clinical worsening due to CHF. Heart failure is pump failure – the heart no longer pumps adequately, forward flow does not work as well as it had previously, and fluid backs up behind the heart, causing pulmonary congestion and shortness of breath. Patients are hospitalized for two reasons: 1) because they often require IV diuretics and possibly other medications to feel better, and 2) one of the reasons CHF can get worse is because of an acute myocardial infarction, so that must be presumed to be present and looked for ("CHF exacerbation, r/o MI"). A CHF exacerbation clinically can look a lot like pneumonia, as can a chest x-ray of such a patient. It is not uncommon for patients with known CHF to be hospitalized for shortness of breath; a chest film is taken along with cardiac enzymes, other labs, and an ECG, and the differential diagnosis is pneumonia vs. CHF exacerbation. The patient may be treated for both CHF and pneumonia. The patient may receive both IV diuretics (i.e. treating CHF) AND IV antibiotics (i.e. treating pneumonia). The patient may also receive an addition/adjustment of the antihypertensive

	medications, an addition/adjustment of digoxin, or an addition/adjustment of other CHF medications. At the end of the hospitalization, one hopes that one or both of these treatment paths actually worked and the patient got better. We often don't really know whether it was pneumonia, CHF exacerbation, or both. In this instance, count such an episode as a CHF exacerbation, as well as pneumonia. If the patient has a history of CHF, but CHF is not in the differential diagnosis recorded in the chart, CHF can be abstracted if the patient has fluid overload and required IV diuretics. Record the number of acute exacerbations in the subsequent years after the year of the initial episode. To code a CHF exacerbation, it is required that the subject is: 1. Hospitalized and treated with diuretics (diuretics do not have to be specified as IV). OR 2. Seen in the ER/UC or in an outpatient setting and treated with IV diuretics. To code an exacerbation in an outpatient setting, the record must specify that the subject received IV diuretics. The subject may also have pulmonary edema but this is not required for abstraction. Record whether a clinician thought the patient had CHF exacerbations during the year by selecting the number of exacerbations (0, 1, 2, 3, or 4 or more). The left ventricle is the part of the heart that pumps blood to the body, so for our purposes CHF is left sided (ventricular) failure. This can be due to inadequate strength to pump (a low ejection fraction) and/or due to failure to relax sufficiently during diastole to permit filling with blood (for example left ventricular hypertrophy), in which case the ejection fraction may be high but the pump function is still inadequate. <u>Active Condition Coding includes:</u> CHF exacerbations in subsequent years must include hospitalization w/ CHF exacerbation + diuretics (don't have to be specified as IV diuretics), or seen in outpatient setting + IV diuretics or ER/UC + IV diuretics.

C.2.14 Cholecystectomy

Description	Record of cholecystectomy procedure
Codes	Cholecystectomy | checkbox
Definition	Surgical removal of the gallbladder
Abbreviations/ Synonyms	Gallbladder surgery
Sources	Operative report, MD or provider visit notes, Epic/chart problem list
Discussion	If the subject reports a cholecystectomy in a year prior to their first GH/KPWA visit, enter the year the surgery was performed in the Access database and check the “Cholecystectomy” checkbox.

C.2.15 Confusion during inpatient hospitalization

<table>
<tr><td>Description</td><td>Documented confusion during an inpatient hospitalization</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Confusion during inpatient hospitalization</td><td>checkbox</td><td></td></tr>
<tr><td>Hospital admission date</td><td>date entry</td><td>mm/dd/yyy</td></tr>
<tr><td>Present on admission</td><td>checkbox</td><td></td></tr>
<tr><td>Documentation</td><td>text box</td><td></td></tr>
</table>
> button to add additional records

Delete Record button
</td></tr>
<tr><td>Definition</td><td>New-onset delirium arising at any time during hospitalization which consists of acute onset and fluctuating course of delirium symptoms, inattention, and either disorganized thinking or altered level of consciousness</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>See discussion section below</td></tr>
<tr><td>Sources</td><td>Emergency room reports, discharge summaries</td></tr>
<tr><td>Discussion</td><td>The goal of this is a proxy for delirium, which will likely be imprecisely captured with outpatient GHC/KPWA charts (delirium tends to be an in-patient condition). So we are looking for “mental status changes” or “confusion” as a proxy.

a.) Synonyms
• Acute confusion
• Acute confusional state (ACS)
• Acute mental status change (MS Δ)
• Delirium
• Mental status change
• Acute brain syndrome
• Acute brain failure
• Acute cerebral insufficiency
• Acute organic psychosis
• Acute organic brain syndrome
• Metabolic encephalopathy
• Toxic-metabolic encephalopathy
• Toxic psychosis</td></tr>
</table>

	• Reversible dementia • Pseudosenility b.) Other descriptions that can be collected as confusion • Altered level of consciousness • Diminished level of responsiveness • Difficulty with arousal • New-onset coma, stupor, lethargy or somnolence • Obtunded c.) Look for these terms and explore whether there has been a change from previous level • Disorientation • Agitation • Hallucinations • Delusions • Paranoid ideation • Inappropriate or disruptive behavior O X 1, O X 2 (Oriented x 1 or Oriented x 2 in association with inappropriate or disruptive behavior) (if change from previous) Indicate if the confusion was present upon admission by checking the "present upon admission" checkbox. If the confusion developed during the course of the hospitalization, do not check "present upon admission." Copy and paste (from Epic) or type in (from the paper chart) the relevant information (verbatim) about the confusion from the discharge summary or other relevant documents into the "confusion" text box. This can be up to several paragraphs. Include the following in the information you copy/paste or type into the textbox: • Admission diagnosis/diagnoses • Description of the delirium during the hospital course • Discharge diagnosis/diagnoses <u>Include</u> • Collect all confusion, including confusion caused by medical conditions such as TIA or stroke. • Include ETOH delirium / delirium tremens (DTs) during inpatient hospitalization as confusion. <u>Exclude</u> • Do not include any reports of confusion in an outpatient setting. ER visits without a hospital admission should not be counted. <u>Active Condition Coding includes:</u> Abstract every time it occurs

C.2.16 COPD

<table>
<tr><td>Description</td><td>Diagnosis of COPD</td></tr>
<tr><td>Codes</td><td>Initial episode COPD (In Form 1: History) (This is a one-time only entry)

<table><tr><td>COPD, date of initial diagnosis</td><td>date entry</td><td>mm/dd/yyyy</td></tr></table>
Subsequent years COPD exacerbations (In Form 2: Yearly Conditions) (This will be entered in all subsequent years in which COPD exacerbations are present)<table><tr><td>COPD exacerbation this year</td><td>checkboxes</td><td>yes
no</td></tr></table></td></tr>
<tr><td>Definition</td><td>Chronic obstructive pulmonary disease</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Emphysema, Chronic obstructive asthma, chronic obstructive pulmonary disease (COPD), chronic pulmonary disease, chronic obstructive lung disease (COLD), chronic obstructive airway disease (COAD), chronic obstructive respiratory disease (CORD)</td></tr>
<tr><td>Sources</td><td>Emergency room reports, MD or provider visit notes, Epic/chart problem list, pulmonary visit notes, urgent care reports</td></tr>
<tr><td>Discussion</td><td>Any disorder that persistently obstructs bronchial airflow. COPD mainly involves two related diseases: emphysema alone and chronic bronchitis with emphysema. While emphysema alone is considered COPD, chronic bronchitis must be paired with emphysema to be considered COPD. Both cause chronic obstruction of air flowing through the airways and in and out of the lungs. The obstruction is generally permanent and progresses (becomes worse) over time.

COPD is usually associated with smoking. COPD tends to be less responsive (if at all) to bronchodilator treatment during pulmonary function testing.

Do not include diagnosis of reactive airway disease (RAD); see asthma.

For progressive conditions, including COPD, if a subject receives a diagnosis from a non-specialist, then later sees a specialist (even in a later year) who does formal testing and rules out the diagnosis, remove the original diagnosis from the record.

Initial Year COPD
The initial year COPD diagnosis does not need to meet the criteria for a subsequent year COPD exacerbation, but must be diagnosed by a provider. Do not code additional COPD exacerbations during the initial year of diagnosis.</td></tr>
</table>

	Subsequent Year COPD Exacerbations After the initial year COPD diagnosis, code only COPD exacerbations in subsequent years. COPD acute exacerbations as indicators of an Active Condition must include a). Hospitalization plus an increased steroid dose or beginning the use of steroids; or b). Hospitalization with a diagnosis of COPD exacerbation. You do not need to enter the number of COPD exacerbations per year. There is one checkbox in the database which captures one or more COPD exacerbations per year. Do not code additional COPD exacerbations during the initial year of diagnosis. Pulmonologist referrals, lung transplant/reduction surgery, and pre-1977 subsequent year COPD med changes should not be coded as COPD in subsequent years. Diagnoses of a COPD exacerbation in subsequent years which do not meet the criteria of hospitalized with steroids or hospitalized and given a diagnosis of COPD exacerbation should not be coded. For example, a COPD/emphysema exacerbation listed in an ER or outpatient visit without a hospitalization does not count as an exacerbation. COPD diagnosed on radiology alone does not count as a diagnosis of COPD. Do not abstract diagnoses of COPD found incidentally on chest X-ray reports in the absence of supporting documentation of the diagnosis elsewhere in the chart. The reason for this is that COPD is not a radiographic diagnosis. If you find a diagnosis in a chart that you feel is incorrect, record the conflict as directed in B.1.7 Abstractor Notes and record your decision and action. For example, a subject has been diagnosed with asthma which you have coded previously, and you find one reference to COPD on a consulting nurse phone encounter, but no other prior or subsequent evidence that the subject was ever diagnosed with or treated for COPD. You decide that COPD is not a correct diagnosis and record the conflict and your decision not to code it in the Abstractor Notes text field. Exclude Do not abstract idiopathic pulmonary fibrosis. Do not abstract chronic bronchitis without accompanying emphysema. Active Condition Coding includes: Subsequent year exacerbations require: hospitalized and given steroids or hospitalized with dx. of COPD exacerbation

C.2.17 Coronary Angioplasty

Description	Record of a coronary angioplasty
Codes	Coronary angioplasty: checkbox
Definition	Coronary angioplasty is a procedure in which a balloon is used to open a blockage in a coronary artery narrowed by atherosclerosis.
Abbreviations/ Synonyms	Percutaneous Coronary Intervention (PCI), Percutaneous Transluminal Coronary Angioplasty (PTCA)
Sources	Hospital discharge summaries, operative reports, outside hospital discharge summaries, Epic/chart problem list
Discussion	In this procedure a catheter-guided balloon is used to open a narrowed coronary artery to improve blood flow to the heart. Cardiac catheterizations (tube inserted into vein/artery) and angiograms (dye through tube/x-ray) both emphasize diagnostic procedures. Angioplasty (stent/balloon) and CABG (grafting) are treatment/therapeutic intervention. Angioplasty is a common medical procedure. It may be used to improve symptoms of coronary artery disease, such as angina and shortness of breath. It also may be used to reduce damage to the heart muscle from a heart attack; angioplasty can be used during a heart attack to open the blockage and restore blood flow through the artery. A stent (a wire-mesh tube that expands to hold the artery open) is usually placed at the narrowed section during angioplasty. Stenting has become more common over the past couple of decades. Do not abstract peripheral angioplasty, renal artery angioplasty, carotid angioplasty, or cerebral artery angioplasty in this section. Peripheral angioplasty should be abstracted in the PVD Procedure section if it is done to treat peripheral vascular disease. Also note that there is an important distinction between cardiac catheterization solely for diagnostic purposes and catheterization that includes angioplasty, where balloons are inflated. “Cardiac cath” is often solely diagnostic, but depending on what is found may be followed either immediately or subsequently with angioplasty and possibly stenting. We are interested in this field in capturing interventions to improve blood flow, as opposed to the use of an invasive diagnostic test.

C.3 Med Cond/Proc (D - L)

C.3.1 Depression

<table>
<tr><td>Description</td><td>Documentation of depression</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Depression</td><td>checkbox</td><td></td></tr>
<tr><td>Diagnosis type</td><td>drop-down</td><td>Mental health provider
Other provider dx./consider problem
Self report</td></tr>
<tr><td>Action</td><td>drop-down</td><td>ECT (with or w/o hospitalization)
Hospitalization (without ECT)
Counseling + Medication
Medication
Counseling/Counseling referral
Refused treatment
None/Unknown</td></tr>
<tr><td>Depression Dx.</td><td>text box</td><td></td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>A medical illness characterized by persistent sadness, discouragement, and loss of self-worth. These feelings are often accompanied by reduced energy and concentration, sleep problems, decreased appetite and weight loss. In the elderly, depression is also frequently characterized by excessive concerns about bodily aches and pains.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Dep, depressive disorder, affective disorder, SAD, situational depression, grief reaction, dysthymia</td></tr>
<tr><td>Sources</td><td>Emergency room reports, MD or provider visit notes, mental health visit notes, telephone encounters, urgent care reports</td></tr>
<tr><td>Discussion</td><td>Depression or one of the abbreviations/synonyms for depression listed above must be mentioned in the medical record.

Do not consider a prescription for an anti-depressant medication in the absence of mention of depression in the medical record to be depression. The rationale for this is that we will be able to capture medications separately using pharmacy data. A description of the patient as “depressed” in conjunction with a prescription for a medication used to treat depression can be coded as depression.</td></tr>
</table>

	An active condition might include a change in dose or type of anti-depressant medication noted on the hospital discharge summary during pre-1977 years, ECT (electroconvulsive therapy), or active or passive suicidal ideation (SI) in a patient with a diagnosis of depression. Note that here we would include "change in medication" as an indicator of an active condition during pre-1977 years, as inpatient changes would not necessarily be captured with (outpatient) pharmacy data. Provider diagnosis types "Mental Health Provider" includes psychiatrists, psychologists, Psych ARNPs, licensed counselors or social workers. "Other provider" includes any other provider who is not a mental health provider, such as PCPs, specialists, hospitalists, ARNPs, PAs. Do not include an initial diagnosis from a PT form. Self-Report diagnosis type Documentation in medical visit notes, telephone encounters, or email messages of a subject or their family members reporting symptoms or a medical condition. If depression is diagnosed by "self-report," check the box for depression but do not type anything into the text box. Initial diagnosis of depression as a self-report can be coded even if the MD or depression screening tool rules out depression. Include • A self-report of a hospitalization for "nervous breakdown" can be abstracted as a self-report of depression. • A "Yes" answer to the "Depressed last 2 weeks" question on the Senior Health Questionnaire Flowsheet in Epic EMR should be coded as a self-report of depression. Exclude • If a family member who is a mental health provider reports that the pt. has depression, this is counted as a self-report and not a "mental health provider" diagnosis. • A "Yes" answer to the "Lack of interest or pleasure last 2 weeks" question on the Senior Health Questionnaire Flowsheet in Epic EMR should not be coded as a self-report of depression. • A CES-D (Depression) score suggesting significant symptoms should not be coded as depression. Provider diagnosis types The hierarchy of provider diagnosis types is listed in the drop-down menu. Take the highest level of provider diagnosis in the year. The hierarchy is as follows, with Mental Health Provider being the highest priority provider diagnosis type: 1. Mental health provider 2. Other provider dx./consider problem 3. Self report Depression diagnosis

	If depression is diagnosed by a "mental health provider" to include: Dep, depressive disorder, affective disorder, SAD, situational depression, grief reaction, and dysthymia, check the box for depression and enter the diagnosis used in the "Depression Dx." text box. If depression is diagnosed by "other provider," check the box for depression but do not type anything into the "Depression Dx." text box. <u>Exclude</u> • Exclude the following treatments as indicators of an active condition for depression: Acupuncture, massage, yoga, relaxation classes, or meditation. • Exclude postpartum depression. This should be recorded in Conditions of Note. <u>Action (treatment type)</u> The action recommended by the provider should be recorded, even if the patient does not follow through with the treatment type. For example, if the provider recommends counseling, but it is unclear if the patient actually attended counseling, the treatment type "Counseling/counseling referral" should still be recorded. If the provider recommends a treatment type and the patient refuses treatment, code the treatment type recommended. "Refused treatment" should only be selected if the type of treatment recommended is unknown, but it is known that the patient refused. The hierarchy of action (treatment types) is listed in the drop-down menu. Take the highest treatment level for the year. The hierarchy is as follows, with ECT being the highest priority treatment type (infrequent), followed by Hospitalization (more common): 1. ECT (with or without hospitalization) 2. Hospitalization (without ECT) 3. Counseling + Medication 4. Medication 5. Counseling/Counseling referral 6. Refused treatment 7. None/Unknown Hospitalization means hospitalization in a psychiatric unit. Do not count hospitalization on a medical unit unless the depression is severe enough that it would have warranted a psychiatric unit admission, in the absence of other medical co-morbidities. Counseling treatment must be from a mental health professional and not from a PCP. Code participation in support groups for depression as "Counseling/counseling referral." <u>Active Condition Coding includes:</u> Referral to mental health professional or psychiatric hospitalization, ECT, active or passive suicidal ideation (SI). Pre-1977-medication change.

C.3.2 Diabetes

<table>
<tr><td>Description</td><td>Initial diagnosis of Diabetes Mellitus</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Diabetes, year of initial diagnosis</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Check here for Type 1 diabetes</td><td>checkbox</td><td></td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>A group of metabolic diseases characterized by high blood sugar (glucose) levels that result from defects in insulin secretion, insulin action, or both.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Type 1 diabetes, Type 1 DM, DM-1, insulin dependent DM, IDDM, “juvenile” diabetes

Type 2 diabetes, Type 2 DM, DM-2, DM, non-insulin-dependent, NIDDM, adult onset DM (AODM), maturity onset diabetes mellitus (MODM)</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, hospital discharge summaries, Epic/chart problem list, Medication tab in Epic and medication flow sheets in the chart</td></tr>
<tr><td>Discussion</td><td>Type 1 is less common and there may be only a small number of subjects in ACT with this diagnosis. Type 1 is juvenile-onset and involves autoimmune destruction of the pancreas, resulting in the inability to make insulin. Type 1 typically is identified via a hospitalization involving diabetic ketoacidosis in the adolescent years. People with Type 1 need to be on insulin from the time of diagnosis until their death. If you abstract the chart of a participant with Type 1 DM, enter the year of initial diagnosis, and check the “Check here for Type I diabetes” checkbox in Form 1: Initial Diagnoses in the Access database.

Type 2 is much more common and likely is very prevalent in the ACT study. Type 2 results from a relative insulin deficiency as the peripheral tissues that take up insulin become insensitive to insulin, resulting in higher blood sugar levels. Type 2 diabetes is typically initially treated with oral medications. Type 2 diabetes often progresses to the point that oral medications are no longer adequate to treat the condition, so these subjects often end up on insulin.

Subjects do not need to be placed on a medication to record this diagnosis, but must have a diagnosis of diabetes. For example, patients may be diagnosed with “Diet-Controlled Diabetes” and not take a medication. The rationale for this is that we have excellent capture of medications from the pharmacy database; what we are adding from the chart reviews is additional data beyond what is available from the pharmacy data.

Year of Initial Diagnosis
The year of initial diagnosis of diabetes should be recorded in Form 1: Initial Diagnoses in the Access database. If the participant has Type 1 diabetes, select the “Check here for Type 1 diabetes” checkbox. If the participant has Type 2 diabetes, leave the “Check here for Type 1 diabetes” checkbox blank.</td></tr>
</table>

	Exclude The following should not be recorded as diabetes for this study: • gestational diabetes • pre-diabetes • chemical diabetes • impaired glucose tolerance • steroid-induced diabetes • borderline diabetes • latent diabetes For reference, this is a list of medications circa 2009 that are prescribed for diabetes treatment: INSULIN Insulin aspart (NovoLog) Insulin aspart protamine suspension and insulin aspart (Novolog Mix 70/30) Insulin detemir (Levemir) Insulin glargine (Lantus) Insulin glulisine (Apidra) Insulin lispro (Humalog) Insulin lispro protamine and insulin lispro (Humalog Mix 75/25) Insulin NPH (isophane suspension) (Humulin N.) (Novolin N) Insulin NPH suspension and insulin regular solution (Novolin 70/30) Insulin regular (Humulin R, Novolin R) ORAL ANTIDIABETIC AGENTS (NON-INSULIN) FOR TYPE 2 DIABETES Acarbose (Precose) Colesevelam (WelChol) (Adjunct therapy) Chlorpropamide (Diabinese) Glimepiride (Amaryl) Glipzide (Glucotrol XL, Glucotrol) Glyburide (DiaBeta, Glynase Pres Tab, Micronase) Metformin (Fortamet, Glucophage XR, Glucophage Riomet) Miglitol (Glyset) Nateglinide (Starlix) Pioglitazone (Actos) Repaglinide (Prandin) Rosiglitazone (Avandia) Saxagliptin (Onglyza) Sitagliptin (Januvia) Tolazamide Tolbutamide INJECTABLE AGENTS (NON-INSULIN) FOR TYPE 2 DIABETES Exenatide (Byetta) Pramlintide (Symlin) Lexi-Comp Formulary: http://www.crlonline.com/crlsql/servlet/crlonline

	12/8/09 DM is not collected as an Active Condition. See instructions above on collecting year of initial diagnosis.

C.3.3 Insulin Usage

<table>
<tr><td>Description</td><td>Insulin usage by participants with diabetes mellitus</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><th></th><th>Date</th><th>Insulin Dose</th><th>Sliding scale prescribed?</th><th>Extra dose</th><th></th><th>Inpatient?</th></tr>
<tr><td>P1</td><td>mm/dd/yyyy</td><td>units/day</td><td>checkbox</td><td>units/day</td><td>units/day</td><td>checkbox</td></tr>
<tr><td>P2</td><td>mm/dd/yyyy</td><td>units/day</td><td>checkbox</td><td>units/day</td><td>units/day</td><td>checkbox</td></tr>
<tr><td>P3</td><td>mm/dd/yyyy</td><td>units/day</td><td>checkbox</td><td>units/day</td><td>units/day</td><td>checkbox</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>First record of insulin dosing taken by participants with diabetes in a given year, in each of three yearly time periods.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Units, U</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, hospital discharge summaries, nursing visits, nursing home, SNF, or ALF records, medication lists in provider notes or visit/encounter notes.</td></tr>
<tr><td>Discussion</td><td>The goal is to report the first time, in each of three yearly time periods, the total amount of insulin taken by participants with diabetes that the body receives in a 24-hour period. Record the first insulin dose in the time period, regardless of whether it is inpatient or outpatient.

Do not record insulin given for other reasons besides diabetes treatment, such as peri-operative glucose control for non-diabetic patients. Some of the insulin doses we collect could be due to pancreatic cancer. Participant cancer status, cancer type, and cancer treatment are collected yearly (see section C.2.10) and can be cross-referenced with insulin doses.

<u>Time period</u>
Record the first insulin dose taken in each of these time periods per year in the corresponding field:

P1 Time period 1: January 1 through April 30
P2 Time period 2: May 1 through August 31
P3 Time period 3: September 1 through December 31

If there are multiple insulin doses taken during a time period, record the first insulin dose in that time period. Enter the date the insulin dose was mentioned in the chart.

Collect insulin dose in each of the three periods of every year, if available, even if the dose does not change between periods and/or years. If there is no insulin dose mentioned in the year or time period, leave that year or time period blank. Enter all of the information available about the first dose in the time period. Do not enter data about later doses in the same time period.

<u>Date</u>
Enter the date of the first insulin dose in each time period in the “Date” field. For</td></tr>
</table>

	missing dates/partial dates, leave the date field blank, but enter the dose data in the appropriate period, if known. Insulin dose Enter the first recorded usual, or standard dose of insulin that the patient takes in each of the three time periods of each year, if available. If there is evidence that the patient was prescribed a dose but did not take it, do not record the dose. The first yearly visit with insulin dosing information should be abstracted, even if the dosing information is an exception from the usual dose. If a participant comes in for a visit on an insulin dose, and the dose is changed during the visit, record the first known complete dose in the period. Some patients may receive more than one kind of insulin, for instance, Lente and Regular. If so, record the total number of units of all insulins per day which are part of the patient's standard, or usual dose. For instance, 60 units Lente and 12 units Regular qam and 20 units Lente and 4 units Regular qpm should be coded Insulin Dose 96. Do not add sliding scale or extra dose units to the "Insulin Dose" measurement, as there are separate fields to enter sliding scale and extra doses, if known. If the amount of the usual Insulin dose is unknown, leave the "Insulin Dose" field blank. Prior to 1973, insulin was available in strengths of U-40 (40 units/ml) and U-80 (80 units/ml). In 1973, U-100 insulin (100 units/ml) became available. Note: these strengths could be referred to as the name of the insulin and should not be confused with the actual dose. If you see pre-1973 insulin doses listed in the chart, use the following guidelines: • Abstract the number of units of insulin reported as being taken by the participant, regardless of the strength of the insulin. • Do not convert insulin doses with strengths of U-40 or U-80 to doses in U-100. • Do not abstract U-40 as 40 units of insulin or U-80 as 80 units of insulin. Sliding scale prescribed? Patients have a usual insulin dose prescribed and may have an additional sliding scale range dose of insulin prescribed. The amount of additional insulin they inject from the sliding scale prescription depends on their blood glucose measurement. If the chart notes state the patient was prescribed a sliding scale, but the actual amount used of the sliding scale is unknown, check the "Sliding scale prescribed" checkbox and leave the "Sliding scale units/day" field blank. If the amount of the sliding scale is known, check the "Sliding scale prescribed" checkbox and enter the amount of the sliding scale in the "Sliding scale units/day" field. If there is no evidence that the patient had a sliding scale prescribed at the time of the first insulin dose, leave the "Sliding scale prescribed" checkbox and "Sliding scale units/day" fields blank. If the first insulin information in the time period is a mention of a sliding scale, but later in the period an "Insulin dose" (see above) is prescribed, prioritize the "Insulin Dose" over the mention of a sliding scale with no insulin dose information. Insulin Pump If someone is on an insulin pump and uses different levels of insulin on active and non-active days, use the upper level of insulin units (non-active days) and then add a note in Conditions of Note of amount of insulin used on active days.

	Include "Contingency dose" is a synonym for sliding scale. Example 1: NPH 20 (am) Reg 5 (am) Reg 4 (dinner NPH 11-16 (at bedtime) This would be abstracted as: 20+5+4+11=**40** + Sliding scale, value of **5** Example 2: Diabetes Check-Up Form* Item #5. Glycemic Control HbAic: xxx Date: xx/xx/xxxx Frequency of SMBG: Shots/day: 3 - Insulin Dose: 32-41 This would be abstracted as: **41** *NOTE: Because it is unclear how this information is generated and the date noted in this section can vary from the visit date, insulin from this form should be abstracted only if there is no other documentation of insulin dosage within that trimester/time period. Extra dose If participant takes an extra dose of insulin which is recorded at the time of the first insulin dose in the year, enter the amount of the extra dose in the "Extra Dose" field. Inpatient **Inpatient** = ER, Medic 911 Care Reports, hospital notes, hospital discharge summaries, urgent care, hospice, nursing home or other inpatient situation. **Outpatient =** doctor's office, assisted living, or home health. Record the first insulin dose in the time period, regardless of whether it is inpatient or outpatient. If the first instance is outpatient, abstract only that. If the first instance is inpatient that has regular and sliding scale, abstract both pieces of information from the same hospitalization, regardless of the date/order. If the insulin dose is mentioned in the documentation of an inpatient visit, check the "Inpatient" checkbox. For example, insulin doses reported in a hospital discharge summary or phone calls from nursing home care providers should be coded as "Inpatient" doses. Hospital discharge summaries may include information about the patient's insulin dose at admission, during the inpatient stay, and at discharge. These should all be coded as "Inpatient." If an insulin dose is reported at an outpatient visit, assume it is an outpatient dose and leave the "Inpatient" checkbox blank. For example, insulin doses reported at an outpatient visit, assisted living, or by home health should be considered outpatient reports. Exclude

	• Exclude insulin prescription information in the Epic “Medication” tab

C.3.4 Dialysis

Abstraction of this variable was discontinued as of 1/1/2024.

C.3.5 Drug Abuse

Abstraction of this variable was discontinued as of 1/1/2024.

C.3.6 Edema

Description	Documentation of edema
Codes	Edema: checkbox
Definition	The swelling of soft tissues as a result of excess water accumulation, due to decreased pumping force of the heart
Abbreviations/ Synonyms	Pitting edema, pedal edema, peripheral edema, dependent edema, LE (lower extremity) edema. 1+ E, 2+ E, 3+ E, 4+ E
Sources	MD or provider visit notes, cardiology visit notes, emergency room reports, hospital discharge summaries, urgent care reports, Epic/chart problem list
Discussion	Most commonly edema is dependent, which in ambulatory people means the ankles. People who are confined to bed may have dependent edema in their backs/sacral area. The definition of edema for data collection only includes peripheral edema (edema of the lower limbs). An exam is required to diagnose edema. Some key words that may be used include "No CCE" (clubbing, cyanosis, edema). 1+E on LE exams means 1+ pitting edema on the lower extremities. Only count 1+ or higher edema. Do not count "trace edema" as edema. Do not abstract self-reports or phone reports of edema. Unqualified edema (recorded simply as "edema") is ok to abstract as long as it is in the lower limbs. Include the following types of edema if specified that they occur in the lower extremities: Edema of alcoholism, angioedema, edema caused by trauma, idiopathic edema, edema due to altitude sickness, post-operative edema, and IV fluid overload Exclude the following types of edema: Woody edema, pulmonary edema, pleural effusion, water on the lungs, edema in pregnancy, macular edema, cerebral edema, abdominal edema, central edema, ascites, lymphedema, non-pitting edema due to hyperthyroidism or lymphedema, trace edema, slight edema Active Condition Coding includes: Abstract every year it occurs

C.3.7 Ejection Fraction Test

<table>
<tr><td>Description</td><td>Documentation of an Ejection Fraction test performed within the year</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Ejection Fraction Test</td><td>checkbox</td><td></td></tr>
<tr><td>Ejection Fraction date</td><td>date entry</td><td>Enter as mm/dd/yyyy</td></tr>
<tr><td>Test type</td><td>drop-down</td><td>echo
nuclear
angiography (includes heart drawing)
other</td></tr>
<tr><td>Ejection Fraction value</td><td>numeric
numeric
numeric
checkbox
text box</td><td>___%
___% +/-___%
___% to ___%
Normal
Other, specify_____</td></tr>
</table>
> button to add additional records

Delete Record button
</td></tr>
<tr><td>Definition</td><td>A test to measure the percentage of blood that is pumped out of a filled ventricle with each heartbeat</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>EF, echocardiography, echo, MUGA, global left ventricular systolic function, Procedures tab in Epic, cardiac catheterization (“cardiac cath”), left ventricular ejection fraction (LVEF), visually estimated EF during cardiac catheterization.</td></tr>
<tr><td>Sources</td><td>Echocardiography reports, nuclear medicine reports, cardiac catheterization procedure reports, Cardiology visit notes, emergency room reports, hospital discharge summaries, MD or provider visit notes, urgent care reports</td></tr>
<tr><td>Discussion</td><td>Collect Ejection Fraction each year performed, for any reason. Capture EF even if the patient does not have a diagnosis of CHF. EF may be reported in visit notes or a discharge summary, or the actual test report may appear in the chart. Ejection fraction tests from echocardiograms can be found in Epic under the Procedures tab (listed as Echocardiography), or under the ECG tab (listed as Echo, Heart).

Ejection fraction is the portion of blood that is pumped out of a filled ventricle as a result of a heartbeat. The heart does not eject all of the blood that is in the ventricle. Only about two-thirds of the blood is normally pumped out with each beat. That fraction is referred to as the ejection fraction.</td></tr>
</table>

	EF Test Type Echo tests refer to echocardiography. Nuclear tests include Persantine (dipyridamole, chemical stress test) Thallium Scan or Multiple Gated Acquisition Scan (MUGA). Visually estimated EF during a cardiac catheterization procedure should be coded as type "other." Ejection Fraction value If there are varied reports of test results from the same EF test, prioritize the EF value on the actual EF report or physician interpretation of the EF test over the EF value reported on a discharge summary or other chart documents. Prioritize EF reports and physician interpretations of the EF test over secondhand reports by providers whose services are unrelated to the EF test or EF test interpretation. For example, a cardiologist's interpretation of an EF test result would have priority over a secondhand report of the EF test result by an ER provider. Look for the nuclear or thallium scan results in imaging tab rather than cardiology tab in EPIC. Numeric EF results If numeric values are available for an EF test, enter all of the numeric values provided for each unique EF test. For example, an EF test may be reported as %, % +/- %, or % to %. Enter all the numeric values corresponding to each unique EF test. For example, there may be a % listed on an echocardiogram and a physician interpretation of the EF result as % +/- %. Both values should be entered as numeric EF results within the same multiple-record entry box for EF. An EF value reported as a decimal should be converted to a percent. For example, 0.76 should be converted to 76%. If both numeric values and text descriptions of an EF test are available, enter the numeric value(s) in the database and do not enter the text descriptions. Note: 'LV Diameter – Syst' is not the same thing as ejection fraction. Text EF results If an EF text description is available and an EF numeric value is not available, enter the text description. If the ejection fraction is reported as a text description instead of a numeric value, enter the text report in the "Other, specify" text box. For example, an EF might be reported as "mildly decreased left ventricular systolic function" instead of as a numeric value. The text box allows up to 100 characters. Enter the text directly from the EF report rather than trying to interpret the results as normal or abnormal. If an EF test is reported as "Normal" (typically in a secondhand report of the results, when the actual test results are not in the chart) select the "Normal" checkbox. Only one text test result type should be entered. For example, do not enter a numeric value and also check the "Normal" checkbox. A more specific description of the test results, if available, has priority over a report of "Normal." "Overall systolic function is preserved" or "Overall systolic function is preserved" can

	be coded as Normal. LV function is technically the working of the whole left side, but is often used as a synonym for LVEF. If chart note says LV function was normal and that's all it says, it can be abstracted.

C.3.8 Epilepsy

<table>
<tr><td>Description</td><td>Diagnosis of epilepsy</td></tr>
<tr><td>Codes</td><td><table><tr><td>Epilepsy</td><td>checkbox</td></tr></table></td></tr>
<tr><td>Definition</td><td>Epilepsy is a condition that causes repeated seizures.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Diagnosis of “seizure disorder,” diagnosis of “recurrent seizures”</td></tr>
<tr><td>Sources</td><td>MD or provider visit notes, neurology visit notes, Epic/chart problem list</td></tr>
<tr><td>Discussion</td><td>Do not code every occurrence of seizures as an active condition of epilepsy. The initial diagnosis of “epilepsy,” “seizure disorder,” or “recurrent seizures” should be coded, as well as new specialist referrals and Pre-1977 medication changes for epilepsy.

Epilepsy is a brain disorder caused by abnormal electrical signals in the brain. These abnormal electrical signals result in occurrences of changes in attention or behavior known as seizures. Seizures may cause problems with muscle control, movement, speech, vision, or awareness. Seizures can range in severity from episodes of staring to convulsions.

Epilepsy and seizures affect between 2.5-3 million Americans of varied ages. Epilepsy may be idiopathic (no identifiable cause), or may be caused by the following factors:

• Genetic influence
• Stroke or TIA
• Illnesses that cause the brain to deteriorate
• Dementia, such as Alzheimer’s disease
• Traumatic brain injury
• Infections (including brain abscess, meningitis, viral encephalitis, neurosyphilis, and AIDS)
• Congenital brain defects
• Prenatal injury
• Developmental disorders
• Kidney failure or liver failure
• Metabolic diseases that children may be born with (such as phenylketonuria)
• Tumors or other structural brain lesions (hematomas, abnormal blood vessels)</td></tr>
</table>

	The type of seizure depends on the part of the brain being affected and the cause of the seizure. Seizures are classified by the type of abnormal brain activity. Partial (focal) seizures affect a limited part of the brain, and can be simple or complex. Simple partial seizures result in no loss of consciousness, and may alter emotions and perception, or have sensory symptoms. Complex partial seizures alter consciousness resulting in staring and non-purposeful movements (hand rubbing, chewing, twitching). The partial (focal) seizures may turn into generalized seizures, which affect the whole brain. Generalized seizures involve the entire brain and the entire body. Generalized seizure types include: petit mal or absence (staring, subtle body movement, brief loss of consciousness), myoclonic seizures (sudden jerks or twitches of arm and legs), atonic seizures (loss of normal muscle tone, suddenly collapsing or falling down) and grand mal (the most intense of all, loss of consciousness, body stiffening, shaking, loss of bladder control). Frontal lobe seizures originate in the front of the brain and may produce symptoms that can mimic psychiatric problems or sleep disorders. These seizures often occur during sleep and the person may exhibit bicycle pedaling motions and pelvic thrusting. People may also scream profanities or laugh. Epilepsy is typically diagnosed when a patient experiences seizure activity on more than one occasion. However, seizures caused by temporary conditions such as drug exposure, drug withdrawal, high fever, or abnormal blood glucose or sodium levels are not considered epilepsy if the problem is corrected and the seizure does not happen again. In the ACT CR study, epilepsy is abstracted when the patient receives a diagnosis of epilepsy, seizure disorder, or recurrent seizures. In subsequent years, referral to a specialist (neurologist) makes epilepsy an active condition which should be abstracted. Tests to detect and diagnose the causes and location of the seizure activity include neurological examination, EEG (reading of the electrical activity in the brain), head CT or MRI scan, and lumbar puncture. Treatment of seizures may include anticonvulsant medications, or surgery once the underlying cause has been identified. Additional treatments to help control seizures may include implantation of a vagal nerve stimulator (a device to help reduce the frequency and intensity of seizures) or special dietary regimens. <u>Active Condition Coding includes:</u> Referred to specialist (neurology), Pre-1977 medication change

C.3.9 Hearing Difficulties

<table>
<tr><td>Description</td><td>Documentation of hearing difficulties</td></tr>
<tr><td>Codes</td><td>Recorded in Form 1: History: Initial Conditions
<table>
<tr><td>Hearing difficulties</td><td>year entry boxes</td><td>Self report of hearing difficulty
Documented hearing loss on testing
Provider recommended hearing aid/amplification</td></tr>
</table>
Recorded in Form 2: Yearly Items: Med Cond / Proc (D-L)
<table>
<tr><td>Hearing Difficulties</td><td>date entry boxes</td><td>Source:
LHMP
Audiogram
Results:
Normal: checkbox
Abnormal:
Left Ear: 0.5, 1, 2 , and 4 kHz
Right Ear: 0.5, 1, 2 , and 4 kHz</td></tr>
</table></td></tr>
<tr><td>Definition</td><td>Total or partial inability to hear sound in one or both ears</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Hard of hearing, HOH, decreased hearing, deafness, loss of hearing</td></tr>
<tr><td>Sources</td><td>Audiology reports, ENT visit notes, HEAR Center, MD or provider visit notes, PE forms, visiting nurse reports, Lifetime Health Monitoring Program (LHMP)</td></tr>
<tr><td>Discussion</td><td>Record the year of initial diagnosis/report of each level of hearing difficulty. Each level is recorded only once, in the initial year of report or diagnosis.

Difficulty with background noise, muffled sounds, difficulty in understanding what people are saying are all components of hearing loss.

<u>Self-Report</u>
Documentation in medical visit notes, telephone encounters, or email messages of a subject or their family members reporting hearing problems.

<u>Include</u>
• Acquired, permanent hearing loss (hearing loss acquired anytime during lifetime). Examples include hearing loss caused by trauma, childhood disease (e.g. scarlet fever), or occupational exposure.
• If the year of the acquired permanent hearing loss is known, code the year of the acquired permanent hearing loss. If the year of the acquired permanent hearing loss is unknown, code the year the acquired permanent hearing loss is first self-reported. For example, a self-report in 1965 of acquired hearing loss as a child, without a specific year</td></tr>
</table>

	mentioned, should be recorded in the year it is self-reported (in this example, 1965). Additional details should be recorded in Conditions of Note. • Code any self-report of hearing loss which is not obviously due to cold symptoms, cerumen (wax) impaction, ear blockage, allergies or ear infection. Exclude • Hearing loss as a result of cold symptoms, cerumen (wax) impaction, ear blockage, allergies or ear infection. • Temporary hearing loss • Congenital hearing conditions (present at birth) • If a participant checks the "Ear trouble or hearing loss" checkbox on a self-report questionnaire (non-LHMP), do not assume this means hearing loss. It could indicate other types of "ear trouble" such as ear infections or cerumen (wax) buildup. • Tetratone tests Documented hearing loss on testing The actual audiometric test strip is not required to abstract "Documented hearing loss on testing," if the chart notes indicate that hearing loss was found on audiology testing. Do not code other types of hearing tests such as the Weber test or Rinne test. Do not code assessments of hearing loss by the PCP without evidence that an audiology test was performed. If hearing tests appear in the chart which do not include an interpretation and the abstractor is unable to determine if participant has hearing loss, the abstractor should bring the redacted hearing tests to the team meeting or PI meeting for assistance in interpretation. The audiologist's interpretation of an audiology test as showing hearing loss should be abstracted as "documented hearing loss on testing," unless it is clear in the same report that the hearing loss is due to a temporary condition such as cold symptoms, cerumen (wax) impaction, ear blockage, allergies or ear infection. Provider recommended hearing aid/amplification Since we are interested in the biology, prescribed hearing aid/amplification should be enough to document, even if the patient does not wear their hearing aid(s). • Referral to audiologist alone is insufficient to code as "provider recommended hearing aid/amplification." • Code plan/referral/recommendation for a hearing aid evaluation (HAE) as evidence that "provider recommended hearing aid/amplification." • If a provider/audiologist suggests, discusses, or recommends hearing aids to a patient, this can be coded as "Provider recommended hearing aid/amplification." • If the hearing evaluation document or a chart note states that a hearing aid was not recommended, don't abstract "provider recommended hearing aid/amplification." Initial Diagnosis Coding includes:

	First year self-report of hearing difficulties, first year hearing loss on testing, and first year hearing aids recommended. Source: Audiology reports There are many types of audiology exams, but we are only interested in audiograms (also called audiometric evaluations or pure tone audiometry). Each audiogram may have more than one type of test: air vs. bone conduction or masked vs. unmasked. Only abstract left and right ear measurements that are air conduction and unmasked. Exams with normal results are defined as hearing at 25 dB or better/less for all four kHz values (0.5, 1, 2, and 4). Normal hearing values range from -10 to 25. Hearing difficulties are present when values are 30 dB or higher for any of the kHz values. If there is more than one normal exam in a calendar year and no abnormal exams, abstract only the first normal one. If there is more than one abnormal exam in a calendar year and no normal exams, abstract only the first abnormal one. If there is an abnormal exam followed by a normal exam in the same year (i.e., improved hearing), disregard the abnormal exam because the hearing loss was evidently temporary. If there is a normal exam followed by an abnormal exam in the same year, bring it to Paul's attention. Source: LHMP (and its predecessor, Current Health Summary) Abstract hearing results listed on LHMP. If a subject has an LHMP and an audiology exam in the same year, abstract the audiology exam only. LHMP exams typically only test at 0.5, 1, and 4 kHz. The predecessor to the LHMP is the Current Health Summary, a 4-page document from the late 1980s. Audiology values are reported at 4, 2, 1, and 0.5 kHz. This is slightly different than the LHMP, which skips the value for 2 kHz. If the provider handwrites an audiology chart with the same frequencies that we abstract, it can be abstracted as an LHMP. (Even though it's not on an LHMP, a handwritten chart is closer to that than to an actual audiology report.) When abstracting from the Current Health Summary, the 'Source of Audiology Exam' should be LHMP because it is the predecessor to the LHMP. Sometimes a provider handwrites "tested with hearing aids" next to the LHMP form. Do not abstract these values since they do not represent the participant's actual (unaided) level of hearing. **Caution**: Values on the Current Health Summary are presented in the opposite order as the LHMP/ database: Right then Left, and 4000 down to 500. Double-check when abstracting from this form because the order is backwards. For either source, Audiogram or LHMP: Include

	For normal exams (all values ≤25 dB), check the Normal Hearing box and record the year. For abnormal exams, abstract air conduction unmasked values recorded on audiograms for 0.5, 1, 2, and 4 kHz. Decibel values typically are recorded in increments of 5 dB; if the line drawing is a little off, it's most likely to show two overlapping values or because of poor handwriting. Record the value shown to the nearest 5 dB. Record all 8 values, even if some fall into the normal range. Some hearing tests do have a result of 0. This is typically seen when the other values are between 0 and 15, indicating that the person had very good hearing. A marked value of 0 should not be considered lack of a result. Enter these codes if hearing is not tested in one ear or at certain frequencies: 999 – Not tested (reason not given; also 2 kHz on the LHMP hearing test) or value not given (e.g., "within normal limits") 998 – Not tested due to known hearing loss 888 – No response at 110 dB (patient was tested and couldn't hear the maximum measured volume) The date of exam is not used for analytic purposes; it is only to facilitate the abstraction process. <u>Exclude</u> Disregard exams that do not give air conduction unmasked measurements of decibels at the four kHz values, such as: acoustic reflex test, audiometer screening, auditory brainstem evaluation, conductive impedance, eustachian tube function, middle ear pressure, otoscopy, speech audiometry, speech discrimination, stapedius reflex measurement, static compliance, stimulus - left/right ear pure tone, tone decay (Owens Test), tympanogram, tympanograph, or tympanometry. Exclude tetratone, which is a screening device not comparable to an audiogram. Also exclude hearing aid evaluation tests. On audiograms, exclude values unless they are air conduction unmasked. Exclude any hearing tests (such as on LHMPs) that say "with hearing aid." If chart notes clearly indicate that a particular hearing exam with abnormal results is due to one of the conditions that are excluded (e.g., temporary due to cerumen), bring it to Paul's attention. <u>Note</u>: The data entry fields in the database are found on tab Med Cond / Proc (A) for audiology, even though the codebook description is under Hearing Loss.

C.3.10 Hypertension

Description	Written diagnosis of hypertension
Codes	Hypertension | checkbox
Definition	For this study there must be a written diagnosis using the word "hypertension or HTN." "High blood pressure" is not a written diagnosis of HTN for this study.
Abbreviations/ Synonyms	HTN
Sources	MD or provider visit notes, urgent care reports, Epic/chart problem list
Discussion	Subjects do not need to be placed on a medication to record this diagnosis. The rationale is that we will capture the medications with the pharmacy data. There is no particular level of blood pressure used to define HTN. Guidelines for diagnosing HTN have changed over time. Exclude • Do not record "elevated blood pressure," "borderline" or "possible" hypertension. In general the diagnosis of hypertension arises gradually in time. At first there may be notations of "elevated," "borderline," or "possible" and mentions of recommended lifestyle changes. • Do not record pulmonary hypertension, ocular hypertension, portal hypertension, or hypertension during pregnancy. The first three represent elevations other than arterial blood pressure, and the third is limited to pregnancy. • Do not use Emergency Department diagnoses of hypertension if they are not confirmed elsewhere in the chart. • Exclude the following treatments as indicators of an active condition for hypertension: Acupuncture, massage, yoga, relaxation classes, or meditation. • Do not record White Coat Hypertension: It is believed that the phenomenon is due to anxiety experienced during a clinic visit but not in other settings. Include • "Labile HTN" can be coded as hypertension <u>Active Condition coding includes:</u> Specialist referral (cardiology, renal, endocrinology), Pre-1977-medication change.

C.3.11 Liver Disease, Chronic

Abstraction of this variable was discontinued as of 1/1/2024.

C.4 Med Cond/Proc (M – N)

C.4.1 Memory Complaints

<table>
<tr><td>Description</td><td>Documentation of any memory complaints</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Memory complaints</td><td>checkbox</td><td></td></tr>
<tr><td>Memory Source</td><td>checkboxes</td><td>Self report
Family report
Provider diagnosis
ACT Study diagnosis</td></tr>
<tr><td>Provider Diagnosis
(available if Provider Diagnosis or ACT Study diagnosis is checked)</td><td>checkboxes

text box</td><td>Mild Cognitive Impairment
Dementia
Alzheimer’s Disease
Vascular Dementia

Other:</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>The loss of the ability to recover information about past events or knowledge</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>

Memory Impairment (Age-Associated)
Memory Decline (Age-Consistent)
Age Related Cognitive Decline (ARCD)
Forgetfulness
Cognitive Decline
Mild Cognitive Impairment (MCI)
Dementia
Alzheimer’s Disease (AD) (Alzheimer’s Dementia)
Vascular Dementia (multi-infarct dementia, dementia secondary to CVAs, Binswanger’s disease)
Short-term Memory Loss

</td></tr>
<tr><td>Sources</td><td>Geriatric Evaluation visit notes, MD or provider visit notes, neurology or psychiatry visit notes, Speech, Language, and Learning (SLL) Cognitive Evaluation, telephone encounters, visiting nurse reports, letter/visit notes from ACT Study doctor (letter may indicate patient is enrolled in ACT Study or be written by Dr. James Bowen)</td></tr>
</table>

Discussion	There are many kinds of dementia. Alzheimer's is one of these. If someone has Alzheimer's disease, they have dementia. The converse is not true. Not everyone with dementia has Alzheimer's disease. Vascular dementia is one example of this, where the subject may never be diagnosed during life with "Alzheimer's disease." Record the diagnosis as it is written in the chart. If a patient is diagnosed with Alzheimer's dementia, record "Alzheimer's disease." <u>Self-Report or Family Report</u> <u>Include</u> • A "Yes" answer to the "Memory problems" question on the Senior Health Questionnaire Flowsheet in Epic EMR should be coded as "Memory Complaints: Self-report." Documentation in medical visit notes, telephone encounters, or email messages of a subject or their family members, friends, or neighbors reporting memory problems. "Family report" can include reports by family, friends, or neighbors. Self-Reports and Family Reports do not allow a diagnosis to be entered. General "mental deterioration" or "memory issues" reported by a family member can be included as a memory complaint. Do not count family or outpatient provider reports of "confusion" unless it sounds specifically like a memory complaint (for example, "patient confused about what year it is" or "patient confused about where he lives" or "gets lost.") Abstract reports of memory loss, regardless of cause (for example, memory loss due to a motor vehicle accident or PTSD still counts). **For "Provider Diagnosis" or "ACT Study Diagnosis," code all that apply.** <u>Provider Diagnosis</u> If the exact provider diagnosis is not listed in the checkbox options, check "Other." If a participant has been diagnosed with Alzheimer's disease or dementia by a non-ACT Study provider, continue abstracting all provider reports of all memory complaints. Do not count reports that a subject is Oriented x 1 or Oriented x 2 as a memory complaint alone. Include the first three provider diagnoses of memory complaints in each year (can be from any provider, including PCP, ER providers, inpatient attending/ hospitalists, and specialists). Conditions which are diagnosed in the ER or in an inpatient setting can be coded, even if they are not worked up later. There is no diagnosis hierarchy or provider hierarchy. The diagnoses can be from the same provider or different providers, but each diagnosis should include new information. Write-in memory complaints are not counted as discrepancies in the IRR process. If the note is from a PT visit, it can be abstracted as Provider Diagnosis / Other.

	Cognitive deficit is not the same as cognitive decline and should not be abstracted by itself. Brain function decreases but may not reach the threshold of dementia. ACT Study Diagnosis ACT Study diagnosis includes ADPR study diagnoses. Once a patient has received a diagnosis of dementia, Alzheimer's, Alzheimer's dementia, or vascular dementia from the ACT study, the condition does not need to continue to be reported. It will only be abstracted in the database the first time the diagnosis is made in the ACT study. The only memory complaints which should be abstracted from ACT Study letters are dementia, Alzheimer's, Alzheimer's dementia, and vascular dementia. Do not abstract other memory complaints (such as forgetfulness) from ACT Study letters, since this data is available through the ACT Study. Alzheimer's dementia reported in an ACT Study letter can be coded as "Alzheimer's" in the chart review database. Abstract memory complaints until ACT Study diagnosis dementia (can keep abstracting after ACT Study diagnosis Mild Cognitive Impairment (MCI)). If it is reported that "patient has been complaining of ongoing memory loss (ie since 1998)" do not go back to code at that date. Do not abstract ANY memory complaints from any source after the ACT Study dx. of dementia or Alzheimer's. If the ACT Study dx. occurs later in a year, collect provider diagnosis of memory complaints, family reports, and self reports from earlier that same year, in addition to the ACT Study diagnosis. The ACT CR Access database has been programmed so that memory complaint data items will be disabled when the visit year is greater than the year of the ACT dementia diagnosis. If the patient receives a diagnosis of Dementia, Alzheimer's, Alzheimer's dementia, or vascular dementia from other providers and not from the ACT Study, continue abstracting the conditions every year they are reported in the chart, as well as other memory complaints. Do not abstract any memory diagnoses from autopsy results. Active Condition coding includes: Abstract every year present until receiving ACT study diagnosis of Alzheimer's or dementia.

C.4.2 Migraines

Description	Diagnosis of migraine, with or without headache
Codes	Migraines | checkbox
Definition	Periodic attacks of severe headaches on one or both sides of the head
Abbreviations/ Synonyms	Migraine headache, migraine HA, ocular migraine, ophthalmic migraine
Sources	MD or provider visit notes, neurology visit notes, urgent care report, Epic/ chart problem list
Discussion	Migraine headaches may be accompanied by nausea, vomiting, and increased sensitivity of the eyes to light (photophobia), increased sensitivity to sound (phonophobia), dizziness, blurred vision, cognitive disturbances, and other symptoms. Some migraines do not include headache, and migraines may or may not be preceded by an aura. Code if present for more than one occurrence (do not code "migraines" for a one-time occurrence). Once there is a second occurrence, abstract it. Do not go back and code the first migraine. Code as present only if provider notes indicate "migraine" headaches, not just headaches of any kind such as tension or cluster headaches. Include ocular and ophthalmic migraines. <u>Active Condition coding includes:</u> Referral to neurologist or pre-1977 medication change.

C.4.3 MMSE and MoCA

<table>
<tr><td>Description</td><td>Documentation of every Mini Mental State Examination (MMSE) or Montreal Cognitive Assessment (MoCA) performed with a subject</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>MMSE or MoCA</td><td>checkbox</td><td></td></tr>
<tr><td>Specify Test</td><td>options group</td><td>MMSE
MoCA</td></tr>
<tr><td>Test Date</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Test Score</td><td>numeric field</td><td>_ _ / _ _</td></tr>
</table>
> button to add additional records
Delete Record button
</td></tr>
<tr><td>Definition</td><td>Mini Mental State Examination (MMSE), Folstein test, Folstein mini-mental status exam
Montreal Cognitive Assessment (MoCA)
SLUMS test (St Louis University Mental Status Exam) is not recorded in our database. Note year and score in Conditions of Note.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>MMSE, MoCA</td></tr>
<tr><td>Sources</td><td>Geriatric Evaluation visit notes, MD or provider visit notes, neurology or psychiatry visit notes, Speech, Language, and Learning (SLL) Cognitive Evaluation</td></tr>
<tr><td>Discussion</td><td>The mini-mental state examination (MMSE) or Folstein test is a commonly used 30-point questionnaire test that is used to screen for cognitive impairment. It is also used to estimate the severity of cognitive impairment at a given point in time and to follow the course of cognitive changes in an individual over time. In about 10 minutes it samples various functions including arithmetic, memory, and orientation. It was introduced by Folstein et al. in 1975. This test is not the same thing as a mental status examination.

The Montreal Cognitive Assessment (MoCA) was designed as a rapid screening instrument for mild cognitive dysfunction. Time to administer the MoCA is approximately 10 minutes. The total possible score is 30 points; a score of 26 or above is considered normal.

<u>Include</u>
• Collect MMSE or MoCA every time it is performed. They may be performed both in the presence or absence of memory complaints, or</td></tr>
</table>

	during a standard geriatric assessment. • If the MMSE score is different on the MMSE form than the chart note from the corresponding visit, code the score on the MMSE form. • If two scores are given for a single test (i.e. 15/30 and also 15/25) record the score that is adjusted (15/25) as the lower denominator is likely due to vision problems and a person not able to do part(s) of the test. • If the patient had two MMSEs on the same day (for example, one with 'world backward' and one with 'serial seven'), abstract both exams as two separate records on the same date. Do not average the scores. • If the denominator is not specifically mentioned, leave the denominator field blank as we don't know if the full test was given. <u>Exclude</u> • Exclude MMSE performed during ACT Study visits, as these results are available through the ACT Study. • Exclude tests with no numerator or denominator (e.g., there's a date but no score).

C.4.4 Myocardial Infarction

<table>
<tr><td>Description</td><td>Record of a myocardial infarction</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Myocardial Infarction</td><td>checkbox</td><td></td></tr>
<tr><td>MI date</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Documentation</td><td>drop-down</td><td>ECG alone
hospitalized
other
unknown
“old MI” date unknown</td></tr>
</table>
> button to add additional records

Delete Record button</td></tr>
<tr><td>Definition</td><td>Myocardial Infarction is destruction of heart tissue resulting from obstruction of the blood supply to the heart muscle.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>MI, heart attack, transmural infarction, septal infarct
Focal akinesis and focal hypokinesis are highly suggestive of an old MI, STEMI, NSTEMI (Non STEMI), AMI (acute MI)</td></tr>
<tr><td>Sources</td><td>Cardiology visit notes, emergency room report, hospital discharge notes, MD or provider visit notes, Medic 911 care report, Epic/chart problem list, urgent care report, ECG reports in chart, ECG tab in Epic</td></tr>
<tr><td>Discussion</td><td>Myocardial infarction occurs when blood flow to a portion of the heart is severely reduced or cut off. The result is death of heart muscle cells (called an infarct). Ischemia, by contrast, means temporary restriction of blood flow. Hardening and narrowing (atherosclerosis) of the coronary arteries that feed the heart is usually the underlying problem. In some cases, a blood clot blocks blood flow; other times, the narrowing is caused by atherosclerosis alone. Spasm of the coronary arteries may also cause an MI.

Generally the diagnosis of MI is based on historical features, ECG data, and labs. Laboratory evaluation of MI has evolved over time. Older data may refer only to LDH. More recently, diagnoses relied on myoglobin and creatine kinase. More recently still, troponin has been very useful. ECG data suggest myocardium at risk, while enzyme levels (troponin, creatine kinase, myoglobin) suggest damaged cardiac muscles.

Collect all MI events, including transmural infarction (transmural means “across the wall”).</td></tr>
</table>

	Non-STEMI is a shorthand medical term for **“**non-ST-elevation myocardial infarction.” These types of heart attacks are often abbreviated as “NSTEMI.” While they may not be as serious as the STEMI heart attack, they are still heart attacks and result in heart muscle death. Exclude subendocardial infarction (this is a much less significant cell loss because the damage doesn’t go all the way through the heart wall). ECG documentation of acute MI is from chart notes only. Abstractor does not read ECG for evidence of acute MI. Discuss MI noted on ECG report with PI if necessary. However, abstractors should review ECGs for evidence of “Old MI, date unknown.” <u>Old MI, date unknown</u> Old MI, date unknown, must be found objectively, such as on an ECG, echocardiogram, or a radionuclide exercise treadmill test. Do not code reports of an old MI when the objective test is not found in the chart. For example, a discharge summary reports that an ECG was done which showed an old MI, but we do not have the actual ECG. This would not be coded. <u>Do not code self-reports of a historical MI in this section.</u> If an old MI, date unknown is found incidentally, select “old MI date unknown” in the Access database drop-down menu. Enter the date when the old MI was incidentally found. ECGs, echocardiograms, or radionuclide exercise treadmill test showing old MIs will say old infarct, or "old" + location, such as "inferior.” <u>Include</u> old MIs found on ECG, echocardiogram, or a radionuclide exercise treadmill test which are labeled: • “MI, age-undetermined” • “Septal infarct, Age Undetermined” • “Probable” • “Silent MI” • “Prior MI” • “Old infarction” • old MIs described on ECG without any modifiers • “Old MI” from nuclear test <u>Exclude</u> old MIs found on ECG, echocardiogram, or a radionuclide exercise treadmill test which are labeled: • "Now present" • "Remains" • "Possible" • "Non-specific" • “Cannot rule out”

	If the abstractor finds other descriptions of old MIs not included in the include/exclude lists above, and is unsure if they should be coded, consult with the lead abstractor, and bring to the team meeting and/or PI as needed. If there are multiple ECGs showing old MI, date unknown, abstract each old MI, date unknown as a unique event. Do not try to determine if the same "old MI' has previously been coded. If a subject is diagnosed with a condition in the course of a hospitalization, and you do not know the specific date the diagnosis was made, enter the hospital admission date. For example, a subject is hospitalized with chest pain and is discharged with a diagnosis of MI. Enter the date of admission as the date of the MI. Do not abstract MI or any other medical diagnoses from autopsy reports. The only information that may be abstracted from an autopsy report or death certificate is the date of death. <u>Active Condition coding includes:</u> Abstract every time it occurs, specialist referral (cardiology)

C.4.5 Nephrotic Syndrome

Abstraction of this variable was discontinued as of 1/1/2024.

C.4.6 Neurological Imaging Scan of Brain

Description	Documentation of a neurological imaging scan of the brain
Codes	Neurological Imaging Scan of Brain | checkbox
Definition	Imaging techniques to directly or indirectly image the structure or function of the brain.
Abbreviations/ Synonyms	CT scan, CAT scan, MRI, PET scan, SPECT scan (note that these are relevant only if they include the brain), EEG
Sources	Imaging reports, Emergency room report, neurology visit notes, MD or provider visit notes, urgent care visit notes, Imaging tab in Epic
Discussion	If one or more brain imaging scans are performed within the year and the imaging report is housed in the paper chart, check the "Neurological Imaging Scan of Brain" checkbox and follow the guidelines below for PDF-ing the imaging scan report. Include • Record imaging scans of the brain. • Include Auditory canal MRI scans Exclude • Do not include imaging scans of the head that do not include the brain (such as a scan of the jaw). Do not record imaging scans of any other part of the body. • Do not PDF mentions of CT scans in chart notes or discharge summaries. Only PDF the actual CT scan report. • Do not print out any reports from Epic. We are only PDF-ing hard copies of imaging reports that appear in the paper chart. However, check the "Neurological Imaging Scan of Brain" checkbox in the Access database if there is a neuroimaging scan of the brain performed in a year and the report is in Epic. The "Imaging" tab in Epic will list all imaging reports which are in Epic. • Skull scans/plates, Skull series Directions • If a neuroimaging scan was performed at an outside hospital (OSH) and the results of the neuroimaging are not scanned into Epic, but are mentioned in a discharge summary or other relevant document in Epic, use the following protocol: Check the "Neurological Imaging Scan of Brain" checkbox in the Access database. Copy and paste the interpretation of the neuroimaging scan into Conditions of Note, including the date, using the following format. MM/DD/YYYY CT

	scan of brain at OSH showed "copied and pasted interpretation of the neuroimaging scan." • The scanned PDF files will be saved by ACT Study ID in the file name. The rationale for all of this work is that we are very interested in the brain. There has been a lot of work recently in natural language processing (NLP), and at some later date we may very well return to these reports of neuroimaging scans to see whether we can abstract additional useful data from them. At present abstracting such data is beyond the scope of this project.

C.5 Med Cond/Proc (P)

C.5.1 Pacemaker

<table>
<tr><td>Description</td><td>Record of a pacemaker placement and/or removal</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Pacemaker</td><td>checkbox</td><td></td></tr>
<tr><td>Date Placed</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Date Removed</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>A medical device which uses electrical impulses, delivered by electrodes contracting the heart muscles, to regulate the beating of the heart</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Pacer, artificial pacemaker</td></tr>
<tr><td>Sources</td><td>Cardiology visit notes, operative reports, outside GHC hospital discharge reports, Epic/chart problem list</td></tr>
<tr><td>Discussion</td><td>The primary purpose of a pacemaker is to maintain an adequate heart rate, either because the heart's native pacemaker is not fast enough, or there is a block in the heart's electrical conduction system.

Record the year the pacemaker was placed. This should only be recorded once in a patient’s lifetime (upon initial placement), even if it was removed and a new one was later put in.

Record the year the pacemaker was removed. Do not record if replaced only.

PCD = a combination pacemaker-cardioverter-defibrillator. If the patient has a PCD, record both AICD and pacemaker, and note PCD in Conditions of Note.</td></tr>
</table>

C.5.2 Parkinson's Disease

Description	Diagnosis of Parkinson's disease
Codes	Parkinson's disease: checkbox
Definition	A slowly progressive neurologic disease characterized by a fixed inexpressive face, a tremor at rest, slowing of voluntary movements, a gait with short accelerating steps, peculiar posture and muscle weakness, caused by degeneration of an area of the brain called the basal ganglia, and by low production of the neurotransmitter dopamine
Abbreviations/ Synonyms	Parks Ds, Paralysis agitans, Shaking palsy, PD
Sources	MD or provider visit notes, neurology visit notes, physical therapy visit notes, Epic/chart problem list
Discussion	PD is of particular interest for several reasons. Several ACT colleagues are the world experts in Lewy bodies, the neuropathological hallmark of PD, but that can also be seen in the absence of PD. People with PD can become demented, which is called PD dementia. People who have dementia first and then develop Parkinsonian features are diagnosed as having dementia with Lewy bodies (DLB). These details are provided for interest only; the only thing to abstract here is diagnoses in the chart of PD. For progressive conditions, including Parkinson's, if a subject receives an initial diagnosis from a non-specialist, then later sees a specialist (even in a later year) who does formal testing and rules out the diagnosis, remove the original diagnosis from the record. Parkinsonism is a neurological syndrome and can be cause by a wide range of other etiologies that can cause symptoms. Parkinsons Disease is the most common cause of Parkinsonism but it is not the same. Do not code Parkinsonism as Parkinsons Disease. <u>Exclude</u>: Do not abstract Parkinsonism as Parkinson's Neo Parkinsons <u>Active Condition coding includes:</u> Referral to specialist (neurology, speech therapy, speech-language pathology) or home health or pre-1977 medication change.

C.5.3 Physical Injuries

<table>
<tr><td>Description</td><td>Documentation of specific injuries which could have a neurological impact regardless of loss of consciousness (LOC) or not; any Other physical injuries only if there is LOC.

(Physical Injury criteria updated beginning 1/1/2024)</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Physical injuries</td><td>checkboxes</td><td></td><td></td><td></td></tr>
<tr><td>Fall</td><td>LOC checkbox</td><td>Duration of LOC Units/</td><td>Min/hour/day drop-down</td><td>Admit hospital checkbox</td></tr>
<tr><td colspan="4">• Specific number of falls reported (Fill in # below)
• Falls reported but no specific number
• Both of the above (Fill in specified # below)

Falls/year _____</td><td>options group

numeric text box</td></tr>
<tr><td>Fractures

checkbox:
Hip, Spine, Forearm, Leg/Feet, Other</td><td>LOC checkbox</td><td>Duration of LOC Units/</td><td>Min/hour/day drop-down</td><td>Admit hospital checkbox</td></tr>
<tr><td>Head injury</td><td>LOC checkbox</td><td>Duration of LOC Units/</td><td>Min/hour/day drop-down</td><td>Admit hospital checkbox</td></tr>
<tr><td>Motor Vehicle Accident</td><td>LOC checkbox</td><td>Duration of LOC Units/</td><td>Min/hour/day drop-down</td><td>Admit hospital checkbox</td></tr>
<tr><td>Other, w/ LOC only</td><td>LOC checkbox</td><td>Duration of LOC units/</td><td>Min/hour/day drop-down</td><td>Admit hospital checkbox</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>A physical injury, or trauma, for this study includes situations where injuries to any part of the body occurred which could have a neurological impact. We are also collecting fractures and falls.

These injuries necessitate a visit to the doctor, clinic, ER, Urgent Care, or hospital. This can include automobile accidents, falls, sports-related injuries and/or serious or critical bodily injury, wound, or shock usually requiring specialized care; life-threatening. Must be in the categories above, or potentially have an impact on the neurological system.</td></tr>
</table>

	Falls are recorded any time the patient 'lost vertical hold.'
Abbreviations/ Synonyms	Fx. Fracture, broken bones LOC Loss of consciousness MVA Motor vehicle accident NIF: Non Injury Fall
Sources	Emergency room reports, hospital discharge summaries, Medic 911 care reports, outside hospital discharge summaries, Imaging tab in Epic
Discussion	**Check all that apply in all checkboxes** <u>Physical Injuries</u> <u>Exclude</u> Exclude minor injuries such as: • abrasions without head trauma • burns • contusions without head trauma • eye infection • foreign body in eye • insect bites • lacerations without head trauma • ligament injury • muscle injury • nosebleed • puncture wounds without head trauma • slivers, splinters • sprains and strains • Do not count injuries where the patient requires sutures in the ER and is discharged to home, unless the injury meets other criteria such as a LOC, fall, fracture, or head injury. For example, a minor accidental cut from a kitchen knife requiring sutures would not be coded at all. Duration (min/hr/day) notes are at the end of the section. <u>Motor Vehicle Accidents</u> <u>Include</u> Code all motor vehicle accidents (MVA), including motorcycle, automobile, bus, truck accidents in the Motor Vehicle Accident section. Include pedestrian vs. car and bicycle vs. car. If the MVA includes a head injury, code both the MVA and the head injury separately. The motor vehicle accident should be referred to in the chart notes as an MVA, crash, collision, accident, or other synonym indicating an MVA. <u>"Other" physical injuries</u> The "Other" category should be used only when the injury does not apply to any of the other physical injury variables AND includes LOC. In other words, do not collect events already collected in another Physical Injury category. The only events which will be double counted (in separate categories) are

MVAs, falls, head injuries, and fractures. If the event falls into one of these categories, do not enter anything in the "Other" category, but enter information in the appropriate categories. For example, an MVA that caused a head injury would be coded in both the MVA category and the "Head Injury" category. If an event with LOC occurs that does not fit into any of the categories (e.g. syncope without a fall), then collect it under "Other."

If there are multiple "other" injuries within a year, type in the events using the following format: 1) Event 1 2) Event 2, etc. "Other" injuries should only be included if they involved loss of consciousness.

Falls
Include

- Record total number of falls per year.
- Record all falls regardless of severity and regardless of whether care was sought. For example, falling to one's knee counts. It is considered a fall any time the patient 'lost vertical hold,' even if the patient is caught or assisted to the floor.
- If a patient falls and sustains a fracture, record both the fall and the fracture.
- The patient can fall from a sitting, standing, or lying position and all are counted as falls. For example, falling from a standing position, slipping out of a wheelchair or chair to the floor, falling out of bed, or falling to the ground during a transfer would all be coded as falls.
- Synonyms for falls include: collapse.
- A "Yes" answer to the "Fallen to ground last 6 months" question on the Senior Health Questionnaire Flowsheet in Epic EMR should be coded as "Falls reported, but no specific number" within the year it is reported.

The chart notes may state "several falls this year," "multiple falls," or "a few falls" and do not state an actual number of falls. For this reason, we added an option for "Falls reported, but no specific number."

Chart notes may also state both a specified and an unspecified number of falls. To capture data presented this way, we added an option for "Both of the above (Fill in specified # below)." If there is a range of falls reported, enter the lower number of the range. For example, a visit note reports "2-3 falls." Choose "Both of the above" #/falls per year and fill in the lower number of the range (in this example, "2").

- "**Specific number of falls reported (Fill in # below)**" is a known number of falls. Select this option and enter the number of falls in the numeric text box "#falls/yr." If there is a range of falls reported, choose the lower number of the range. For example, a visit note reports "2-3 falls."
- "**Falls reported but no specific number**" is an unspecified number of falls ("multiple falls, "several falls", etc.) without a specified number

	of falls. Selection of this option does not allow a number to be entered in the numeric text box (since the number of falls is unspecified). The "#falls/yr." text box is unavailable when this option is selected. • "**Both of the above (Fill in specified # below)**" is a known # of falls plus an unspecified number of falls (for example, we know of two confirmed falls, and the chart has additional reports within the year of "multiple falls," "several falls," etc, which may or may not be additional falls in excess of the known falls). Select this option and enter the known number of falls in the numeric text box. Conflicting information about number of falls: As a general rule, the abstractor should abstract the number that seems to most accurately represent what happened. If the abstractor isn't reasonably sure, err on the side of being conservative, i.e., the lower number. Falls and Loss of Consciousness (LOC) Include • Fainting, passing out, blacking out, and syncope are synonyms for loss of consciousness. • It does not matter if the LOC is before or after the fall. Both are counted as falls and LOC. • If the etiology of LOC is unknown and the LOC causes a fall, record both LOC and fall, by entering the fall and selecting the LOC checkbox in the "Fall" module. • If etiology is of LOC is known (such as grand mal seizures, which we would collect under seizure disorder but not under LOC) and causes a fall, count the fall. Exclude • Do not code "near-syncope" or "pre-syncope." • Do not include passing out or blacking out resulting from alcohol intoxication. • Do not include LOC resulting from epilepsy (a seizure), stroke, or TIA. Fractures: Include • If a patient falls and sustains a fracture, record both the fall and the fracture. For example, a fall leading to a hip fracture would be recorded as both a fall and a hip fracture. • Record a skull fracture as both a head injury and a fracture. • Wrist or elbow fractures should be coded as "Forearm fracture." • Hand and finger fractures should be recorded under "Other fracture." • Skull, rib, sternum, xiphoid process, scapula, and clavicular fractures should be coded as "Other fracture." • Toe fractures should be coded as Leg/foot fractures.

	Exclude • Exclude all compression fractures of the spine. The rationale for this is that such fractures typically are the result of osteoporosis rather than trauma. • Exclude stress fractures (insufficiency fracture) which are unrelated to trauma. • If the x-ray and clinician diagnosis are in conflict about whether it is a fracture, go with the clinician diagnosis. Head injuries Include • Blunt trauma to head. Any fall or injury where a participant hits his/her head is counted as blunt trauma. It needs to involve force applied externally to the head (ex: being punched in the chin, or hitting their head on an open cabinet door). • A fall with a head injury causing a laceration or contusion to scalp would be counted as a fall and as a head injury. A laceration by itself is not a head injury. It has to include trauma to the head. • It does not need an abnormal neuro exam or abnormal CT scan. The record does not have to specifically state that the participant hit his/her head, if it can be determined from the context. • Cerebral contusion, cerebral laceration (on the surface of the brain, not superficial) • Cerebral edema, elevated intracranial pressure, hydrocephalus resulting from trauma • Concussion • Diffuse axonal injury. This is the brain finding from an acceleration/deceleration situation (“whiplash”) • Neck injury to C-spine is only counted if head injury also occurs. Also count as a fracture if the C-spine is fractured. • Skull fracture (count as both fracture and head injury) • Sports-related injuries involving head, including bicycle accidents • Traumatic brain injury (TBI) • Traumatic extradural or epidural hematoma • Traumatic intraparenchymal hemorrhage • Traumatic subarachnoid hemorrhage • Traumatic subdural hematoma • Traumatic intraventricular hemorrhage If a traumatic head injury with a bleed such as, • Traumatic intraparenchymal hemorrhage • Traumatic subarachnoid hemorrhage • Traumatic subdural hematoma • Traumatic intraventricular hemorrhage results in a stroke, enter the

	traumatic head injury in this section and enter the stroke in the Stroke section of the database. LOC (Not relating to a fall): Include • Fainting, passing out, blacking out, and syncope are synonyms for loss of consciousness. • Record loss of consciousness (LOC), the length of that LOC, a description of the event in the "Other" text box, and check whether the subject was admitted to the hospital because of that LOC. • A loss of consciousness (LOC) should be recorded as an "Other injury" if it is not associated with an event in any of the other "Physical Injury" categories. LOC independent of other physical injury categories should be recorded as "Other" Physical Injury. • If the LOC is associated with one of the other "Physical Injury" categories, the LOC box should be checked under that category (for example, under MVA), instead of recording the LOC as "Other." • Collect LOC from all causes except those listed below under "Exclude" Exclude • Do not code "near-syncope," "pre-syncope," or "almost passed out" • Do not include passing out or blacking out resulting from alcohol intoxication. • Do not include LOC resulting from epilepsy (a seizure), stroke, or TIA. Duration of LOC The duration of LOC should be reported in whole numbers. A loss of consciousness of less than one minute (for example, 20 seconds) should be rounded up and reported as one minute. With minutes, round ¼ minutes (15 seconds) to lower whole number, round ½ (= > 30 Seconds) to next whole number. A loss of consciousness reported as a "few" minutes should be reported as 3 minutes. For hours and day, convert to the most accurate common denominator. Example: report 1 ½ hours as 90 minutes, 1 ½ days as 36 hours. The goal is to get the most accurate description of the duration of the loss of consciousness. If length of LOC is unknown, check LOC box but do not record duration or units. Single events coded in multiple categories If a subject has a single event which involves physical injuries in more than one "Physical Injury" category, all sections of all relevant categories should be recorded. This applies only to MVAs, falls, head injuries, and fractures. For example, a subject has a motor vehicle accident which causes a head injury and the subject has a loss of consciousness. Record the MVA and LOC under MVA, and also record Head Injury and LOC under "Head Injury." This will cause duplicate data to be recorded but will allow analysis of all variables associated with each single event.

	Admit to hospital Record Admit to the hospital independently of whether LOC is checked. If a participant is hospitalized for a fall and fracture, check "hospital admission" for both the fall and the fracture. If a neuroimaging scan of the brain was obtained after an injury, be sure to follow the protocol in C.4.6, Neurological Imaging Scan of Brain. Active Condition coding includes: Abstract every time it occurs

C.6 Med Cond/Proc (Pn - Z)

C.6.1 Pneumonia

Description	Diagnosis of pneumonia
Codes	Pneumonia: checkbox
Definition	An acute or chronic disease marked by inflammation of the lungs and caused by viruses, bacteria, or other microorganisms and sometimes by physical and chemical irritants
Abbreviations/ Synonyms	PNEU, Pnu
Sources	Emergency room reports, hospital discharge summaries, MD or provider visit notes, pulmonary visit notes, urgent care visit reports, chest X-rays in chart or Epic (in Imaging tab)
Discussion	Include aspiration pneumonia, Cytomegalovirus (CMV) pneumonia, community-acquired pneumonia, and ventilator-associated pneumonia. Include all types of pneumonia. Do not code pneumonitis as pneumonia. Active Condition coding includes: Abstract every time it occurs

C.6.2 PVD Procedure

Description	Record of a surgery performed for Peripheral Vascular Disease
Codes	PVD Procedure: checkbox
Definition	All diseases caused by the obstruction of large peripheral arteries, which can result from atherosclerosis, inflammatory processes leading to stenosis, an embolism or thrombus formation. It causes either acute or chronic ischemia (lack of blood supply), typically to the legs.
Abbreviations/ Synonyms	PVD Peripheral vascular disease PAD Peripheral artery disease mesenteric artery ischemia
Sources	Hospital discharge summaries, operative reports
Discussion	PVD may cause claudication, a particular type of leg pain. Include bypass grafting (not coronary, which is CABG) and angioplasty (not PCI or PTCA, which is coronary) of the peripheral vessels, including the aorta, renal, femoral, popliteal, and iliac arteries; and possibly amputations. Angioplasty is sometimes done to relieve localized obstructions. Procedures such as the Femoropopliteal (fem-pop) bypass are used to relieve claudication. Patients with ischemic disease may develop peripheral neuropathy leading to atrophic ulcers, gangrene, or osteomyelitis of the lower limbs which may progress to the need for amputation. Repairs of abdominal aortic aneurysm (AAA) are done to prevent rupture of aneurysms and should be included as a PVD Procedure. Do not collect temporal artery biopsy/excision or clipping of carotid ophthalmic artery aneurysm as PVD procedures. <u>Included surgical procedures</u> Peripheral vascular bypass Balloon angioplasty/stenting (not coronary, which is PCI) Percutaneous Transluminal Angioplasty (PTA) (not coronary, which is PTCA) Abdominal Aortic Aneurysm (AAA) Repair Repair of ascending aortic dissection with graft Ascending Aortic Dissection Repair Below knee amputation (BKA)(trans-tibial) – must be done for PVD Above knee amputation (AKA)(trans-femoral) – must be done for PVD Excluded surgical procedures Femoral embolectomy Celiac stentplasty

C.6.3 Subarachnoid Hemorrhage (non-traumatic)

Description	Recorded diagnosis of subarachnoid hemorrhage (non-traumatic)
Codes	Subarachnoid hemorrhage (non-traumatic) | checkbox
Definition	A subarachnoid hemorrhage is bleeding in the subarachnoid space, which is the area between the arachnoid membrane and the pia mater surrounding the brain. This may occur spontaneously, usually from a ruptured cerebral aneurysm (which is abstracted into this variable), or may result from head injury trauma (which is abstracted into Physical Injuries).
Abbreviations/ Synonyms	Spontaneous SAH
Sources	Emergency room reports, hospital discharge summaries, MD or provider visit notes, neurology visit notes, urgent care visit reports, CT or MRI scans, Imaging tab in Epic
Discussion	If a *non-traumatic* SAH results in a stroke, enter the non-traumatic SAH in this section and enter the stroke in the Stroke section of the database. Do not record *traumatic* subarachnoid hemorrhages in this section. If the subject suffers a traumatic event such as an MVA, head injury or fall which causes the subarachnoid hemorrhage, record the traumatic event in the Physical Injuries section. Active Condition coding includes: Abstract every time it occurs

C.6.4 Subdural Hematoma (non-traumatic)

Description	Recorded diagnosis of subdural hematoma (non-traumatic)
Codes	Subdural hematoma (non-traumatic) — checkbox
Definition	A subdural hematoma is a collection of blood on the surface of the brain, between the dura mater and the arachnoid mater. This may occur spontaneously (which is abstracted into this variable), or may result from acute or chronic head injury trauma (which is abstracted into Physical Injuries).
Abbreviations/ Synonyms	SDH, chronic SDH
Sources	Emergency room reports, hospital discharge summaries, MD or provider visit notes, neurology visit notes, urgent care visit reports, CT or MRI scans, Imaging tab in Epic
Discussion	If a *non-traumatic* SDH results in a stroke, enter the non-traumatic SDH in this section and enter the stroke in the Stroke section of the database. Some subdural hematomas occur without cause (spontaneously). Do not record *traumatic* (acute) subdural hematomas in this section. If the subject suffers a traumatic event such as an MVA, head injury or fall which causes the subdural hematoma, record the traumatic event in the Physical Injuries section. Acute (traumatic) subdural hematomas are usually the result of a serious head injury. Acute subdural hematomas are among the deadliest of all head injuries. Bleeding fills the brain area very rapidly, compressing brain tissue. This often results in brain injury. Chronic subdural hematomas can occur after a very minor head injury, especially in the elderly. These may go unnoticed for many days to weeks. With any subdural hematoma, tiny veins between the surface of the brain and its outer covering (the dura) stretch and tear, allowing blood to collect. In the elderly, the veins are often already stretched because of brain atrophy (shrinkage) and are more easily injured. Active Condition coding includes: Abstract every time it occurs

C.6.5 Valvular Heart Disease

<table>
<tr><td>Description</td><td>Recorded diagnosis of valvular heart disease
Prosthetic (artificial) valve placement</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Valvular Heart Disease</td><td>checkbox</td><td></td></tr>
<tr><td>Involved valve
(enter all that apply)</td><td>checkbox per each valve involved</td><td>mitral
aortic
pulmonic
tricuspid
unknown</td></tr>
<tr><td>Valvular problem</td><td>drop-down per each valve involved</td><td>stenosis
insufficiency (regurgitation)
both
unknown</td></tr>
<tr><td>Prosthetic valve placed</td><td>checkbox</td><td>yes
no</td></tr>
<tr><td>Valve involved
(enter all that apply)</td><td>checkboxes</td><td>mitral
aortic
pulmonic
tricuspid
unknown</td></tr>
<tr><td>Valve type</td><td>drop-down</td><td>Mechanical
Other/porcine (bioprosthetic-allograft, isograft, xenograft, bovine)
Unknown</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Any disease process involving one or more of the valves of the heart. The four valves are the aortic, mitral, tricuspid, and pulmonic. Any of these may have insufficiency (regurgitation), stenosis, or prolapse.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>VHD; mitral stenosis (MS); mitral regurgitation (MR); aortic stenosis (AS), aortic regurgitation (AR); aortic insufficiency (AI) counts as aortic regurgitation</td></tr>
<tr><td>Sources</td><td>Cardiology visit notes, emergency room visit reports, hospital discharge summaries, MD or provider visit notes, outside GHC hospital visit reports, urgent care reports, Epic/chart problem lists, Epic Procedures tab</td></tr>
<tr><td>Discussion</td><td>Heart valves can malfunction either by leaking (regurgitation) or by not opening adequately and thus partially blocking blood flow through the valve (stenosis). Code each valve involved and the associated valvular problem (there can be</td></tr>
</table>

	more than one valve coded). The valves most frequently affected are the mitral valve and the aortic valve. Diagnosis of valvular heart disease needs to be confirmed by echocardiogram (echo) or cardiac catheterization report. However, if valvular heart disease is listed on the discharge summary or other outside hospital records, this can be included without presence of the actual echocardiogram or cardiac catheterization report. The report does not need to specifically say 'valvular heart disease' – it is sufficient to say mitral regurg, aortic stenosis, etc. Vascular heart disease can be abstracted from an echo report based on Doppler flows (e.g., AI: Moderate, MR: Moderate). If the written-out Findings section conflicts with the Doppler flow, however, abstract based on the write-up. The valves of the heart may be damaged by rheumatic fever in childhood, endocarditis (infection), and other conditions. These conditions, as well as valve prolapse alone (without regurgitation or stenosis), can be recorded in Conditions of Note. Do not record a heart murmur alone. A heart murmur alone is not sufficient to make the diagnosis of valvular disease. We would need a more specific diagnosis, in particular, which valve is involved. Do not record valve sclerosis. Only record valve stenosis. Ignore mild or trace regurgitation, including regurgitation described as "mild to moderate." Only capture regurgitation if it is moderate, moderate-to-severe, or severe. 1+ = mild regurgitation/insufficiency 2+ = moderate regurgitation/insufficiency 3+ = moderate-severe regurgitation/insufficiency 4+ = severe regurgitation/insufficiency If there are two problems in the same valve at the same time, code the most severe manifestation (e.g., moderate would trump mild-to-moderate). If there is a tie, code stenosis. Record valve placement operations as well as valve replacement operations. If more than one valve is replaced during an operative procedure, record all valves that apply. Bioprosthetic (meaning, made from animal tissue or the person's own tissue) valves need to be replaced approximately every 10-15 years. It is unlikely that different valve types (i.e. both mechanical and porcine or bovine) would be placed in a single operative procedure. Although the database allows multiple valves to be selected in reporting prosthetic valve surgery, only one valve type can be selected. If you encounter a valve placement surgery with more then one valve type placed in a single operative procedure, record the additional valve type in Conditions of Note. <u>Active Condition coding includes:</u>

	Abstract surgery, every time a new heart valve is diagnosed, or if a new problem is diagnosed in a valve that previously had a different problem (e.g., stenosis and later regurgitation in the same valve)

C.6.6 Vision Problems

<table>
<tr><td>Description</td><td>Diagnosis of vision problems</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Vision problems</td><td>checkbox</td></tr>
<tr><td>Cataracts</td><td>checkbox</td></tr>
<tr><td>Glaucoma</td><td>checkbox</td></tr>
<tr><td>Macular degeneration</td><td>checkbox</td></tr>
<tr><td>Retinopathy</td><td>checkbox</td></tr>
<tr><td>Blindness (bilateral)</td><td>checkbox</td></tr>
<tr><td>Cataract Surgery</td><td>checkbox</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Common eye disorders</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Cataracts (Cat, cats)
PSC/psc (posterior subcapsular cataracts)
NS/ns (nuclear sclerotic)
CC/cc (cortical cataract)
PCO posterior capsular opacity. A defect/scar that occurs on an artificial lens. - often treated by YAG capsulotomy. Code as cataract if/when treated by YAG
Macular degeneration
ARMD, AMD = age-related macular degeneration
SMD= senile macular degeneration
Glaucoma
COAG = chronic open-angle glaucoma,
OAG = open-angle glaucoma
POAG = primary open-angle glaucoma
NTG =normal tension glaucoma
PG = pigmentary glaucoma
ACG = angle closure glaucoma
PXG = pseudo exfoliative glaucoma
Diabetic retinopathy
DR =diabetic retinopathy
NPDR = non proliferative diabetic retinopathy
PDR = proliferative diabetic retinopathy</td></tr>
<tr><td>Sources</td><td>Optometry visit notes, ophthalmology visit notes, operative reports, Epic/chart problem lists</td></tr>
<tr><td>Discussion</td><td>Code all that apply. Record vision problems other than routine eye exams. Do not record diagnoses of presbyopia, hyperopia, astigmatism, and myopia which are common and not of interest in this study.

<u>Initial diagnosis</u>
If an optometrist makes a diagnosis and an ophthalmologist later concurs with the diagnosis, record initial diagnosis in the year the optometrist stated so. If</td></tr>
</table>

	the optometrist says suspect/probable/possible, don't abstract until the year that the ophthalmologist confirms the diagnosis. For progressive conditions, including vision problems, if a subject receives a diagnosis from a non-specialist, then later sees a specialist (even in a later year) who does formal testing and rules out the diagnosis, remove the original diagnosis from the record. Cataracts: a cloudy area in the lens of the eye that usually develops slowly and results in decreased vision. It is very common in older people, impacting 70% of people over 75. Certain factors can increase the rate of cataract development, such as family history, diabetes, eye injury, long-term use of corticosteroids, smoking, and prolonged exposure to UV light. Cataract surgery is usually performed on one eye at a time so record this event in two different years if applicable. OD w/IOL= right eye with intraoptic lens OS w/IOL= left eye with intraoptic lens Pseudophakia means artificial lens in the eye. Cataract surgery has been performed in the past Aphakia – no lens in the eye. A cataract/lens was previously removed but a new lens not implanted If cataract surgery is performed within a year, there is no need to record both the cataracts and the cataract surgery. Record only the cataract surgery. Pseudophakia implies that cat surgery was performed in the past Laser YAG capsulotomy is a procedure performed in the office when a second/new cataract forms and should therefore be recorded as an active condition for cataracts, not as cataract surgery. Glaucoma: a group of eye conditions that cause damage to the optic nerve, usually by increased ocular pressure. It often has no symptoms until symptoms of peripheral vision loss appear. If untreated, it can progress to a loss of central vision and blindness. The major risk factors include age over 45, family history, diabetes, eye injury, use of cortisone, and African heritage. "Glaucoma suspect" describes a person with one or more risk factors that may lead to glaucoma, including increasing intraocular pressure, but this person does not yet have definite optic nerve damage or vision loss due to glaucoma. Chart notes stating "glaucoma suspect" should not be abstracted as "Glaucoma." Include: • Normal tension glaucoma (NTG) • Trabeculectomy • YAG Iridectomy • Laser peripheral iridotomy (PI) (Laser iridotomy is considered the definitive treatment of acute PAC with pupillary block. Surgical iridectomy is indicated only when the

	laser iridotomy cannot be accomplished. The procedure provides an alternative route for aqueous trapped in the posterior chamber to enter the anterior chamber.) Macular Degeneration: a disease that destroys central vision, but rarely causes blindness because peripheral vision is not impacted. It is the leading cause of vision loss in Americans over 60. The major risk factors include age, smoking, family history, obesity, HTN, sedentary lifestyle, and prolonged exposure to UV light. Exclude • Macular ischemia • Macular edema • Mild retinal pigment epithelium (RPE) macular disruption • Myopic degeneration Retinopathy: a disease of the retina caused by damage to, or over-production of, blood vessels in the retina. It leads to severe vision loss and blindness. Retinopathy is often caused by diabetes, HTN, or arteriosclerosis. Exclude • Retinal detachment • Background diabetic retinopathy (BDR) • Minimal non-proliferative diabetic retinopathy • Non-proliferative diabetic retinopathy Blindness: "Legally Blind" by DMV criteria and certified by MD is abstracted as blindness, as long as it is in both eyes (OU); do not abstract unilateral blindness. Only permanent blindness should be abstracted. Active Condition coding includes: *Any condition*: Dx. of other eye. *Glaucoma*: surgery for glaucoma, YAG iridotomy, trabulectomy. *Cataracts*: Record laser YAG capsulotomy surgery as an active condition for cataracts (not as cataracts surgery).

C.6.7 VTE / DVT / PE

Description	Diagnosis of VTE/DVT/PE
Codes	VTE/DVT/PE: checkbox
Definition	Clots in the veins. Includes both clots that occur in the deep veins, and those that break off (embolize) and lodge in the lungs (thus a pulmonary embolus).
Abbreviations/ Synonyms	VTE venous thromboembolism = DVT deep vein thrombosis PE pulmonary embolism
Sources	Emergency room reports, hospital visit summaries, Epic/chart problem lists, Epic Imaging tab
Discussion	Deep vein thrombosis commonly affects the leg veins (such as the femoral vein or the popliteal vein) or the deep veins of the pelvis. Occasionally the veins of the arm are affected (if spontaneous, this is known as Paget-Schrötter disease). A VTE/DVT can occur without symptoms, but in many cases the affected extremity will be painful, swollen, red, warm and the superficial veins may be engorged. VTE and DVT can be considered to be synonymous. The greatest complication of a VTE/DVT is that the clot could dislodge and travel to the lungs, which is called a pulmonary embolism (PE). VTE/DVT is a medical emergency, present in the lower extremity there is 3% chance of a PE killing the patient. A late complication of VTE/DVT is the post-phlebitic syndrome, which can manifest itself as edema, pain or discomfort and skin problems. <u>Include</u> • Aortic thrombosis • AAA (abdominal aortic aneurysm) with PVD (peripheral vascular disease) procedure <u>Exclude</u> • Do not collect superficial phlebitis; it is not deep vein thrombosis. • Thrombophlebitis • Venous statis (varicose veins) <u>Active Condition coding includes:</u> Abstract every time it occurs

C.6.8 Warfarin Adverse Reaction

<table>
<tr><td>Description</td><td>Documentation of Adverse Reaction to Warfarin (Coumadin) causing a bleed sufficient to stop Warfarin</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Adverse reaction</td><td>checkbox</td><td></td></tr>
<tr><td>Date of Adverse reaction</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Sufficient to stop Warfarin</td><td>options group</td><td>Yes
No</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>Adverse reaction refers to any unwanted, negative consequences associated with the use of the prescribed medication, Warfarin (Coumadin).</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>AE = adverse event, ADR = adverse drug reaction, ADE = adverse drug event; Coumadin is the trade name for Warfarin</td></tr>
<tr><td>Sources</td><td>AMS, Anticoagulation telephone calls, MD or provider visit notes, telephone encounters, pharmacy communications</td></tr>
<tr><td>Discussion</td><td>Warfarin is an anticoagulant that has been found to be effective and relatively safe for preventing thrombosis and embolism in many disorders. It was approved for use as a medication in the early 1950s. Warfarin has to be monitored by frequent blood testing for the international normalized ratio (INR) to ensure an adequate yet safe dose is taken. Many commonly used medications interact with Warfarin.

Do not count temporary discontinuation in preparation for surgery. There’s no hard line for “temporary” but around 2 weeks or less is considered temporary.

Warfarin could be discontinued multiple times over the patient’s life.

Record only one event per year. Do not code Warfarin discontinuation in the Ceased Medications module (unless the cessation is due to something other than a bleed).

The definition of an adverse reaction has to include “bleed.” We do not need to record the reason for discontinuation. A bleed is assumed with the following conditions, which are the most commonly seen:
• BRB(PR) – bright red blood (per rectum)
• GI bleed (upper or lower)
• Bleeding ulcer
• Coffee grounds emesis</td></tr>
</table>

	Other examples of types of bleeds: Head & Central Nervous System: • Brain hemorrhage (intra-cerebral hemorrhage, subdural hematoma, subarachnoid hemorrhage) • Central nervous system bleeding (brain & spinal cord) • Epistaxis (nose bleed) Upper GI: • Acute bleeding in esophagus or stomach (generally verified with upper endoscopy/EGD): • Hematemesis (vomiting of bright red blood) • Coffee ground emesis • Bleeding ulcers Lower GI (generally verified with colonoscopy): • BRBPR (Bright red blood per rectum) • Hematochezia (maroon stool) – generally associated w/ lower GI bleeding but may also occur from a brisk upper GI bleed. • Melena (black, tarry stool) – caused by the hemoglobin in the blood being altered by digestive chemicals and intestinal bacteria. Lung/Heart Bleeds: • Hemoptysis (coughing up blood) Urogenital Bleeds: • Hematuria (blood in urine) • Menorrhagia (heavy or excess vaginal bleeding) • Post-menopausal bleeding Joints & Spaces: • Hemarthrosis (bleeding into joints & spaces) • Retroperitoneal bleed or hemorrhage (space (sometimes a potential space) in the abdominal cavity behind the peritoneum) <u>Warfarin may be stopped for other reasons that are not directly tied to a bleed. These would be coded under Ceased Meds, not Warfarin Adverse Research</u>: • Anemia (unless due to one of the conditions listed above) • Abnormal lab values (hemoglobin and/or hematocrit) • Increased fall risk • Bruising, ecchymosis of the skin

C.7 Stroke / Old Infarct Date Unknown / TIA

C.7.1 Stroke

<table>
<tr><td>Description</td><td>Diagnosis of stroke
(coding directives updated as of 1/2024)</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Stroke Event</td><td>checkbox</td><td></td></tr>
<tr><td>Type</td><td>options group</td><td>Stroke
Old Infarct (Date Unknown)
TIA</td></tr>
<tr><td>Level of certainty</td><td>drop-down</td><td>definite
probably
possible
unknown</td></tr>
<tr><td>Date</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Stroke Type</td><td>drop-down</td><td>Ischemic
Hemorrhagic
Unknown</td></tr>
</table>
> button to add additional records

Delete Event button
</td></tr>
<tr><td>Definition</td><td>A stroke is the rapid decline of brain function due to a disturbance in the supply of blood to the brain; the change in brain function must last for more than 24 hours (which is what differentiates a stroke from a TIA). This can be due to ischemia, thrombus, embolus (a lodged particle) or hemorrhage (a bleed).
Ischemic (clot/blockage)
Hemorrhagic (bleed)</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>CVA, cerebral vascular accident, AION, CRAO, BRAO</td></tr>
<tr><td>Sources</td><td>Emergency room visit report, hospital discharge summaries, MD or provider visit notes, Medic 911 care report, neurology visit notes, urgent care reports, Epic/chart problem lists, Epic Imaging tab, CT scans, MRI imaging</td></tr>
<tr><td>Discussion</td><td>In thrombotic stroke, a thrombus (blood clot) usually forms around atherosclerotic plaques. Since blockage of the artery is gradual, onset of symptomatic thrombotic strokes is slower. Thrombotic stroke can be divided</td></tr>
</table>

	into two categories—large vessel disease and small vessel disease. The former affects vessels such as the internal carotids, vertebral and the circle of Willis. One can have a clot in the brain that gets evacuated and not cause a stroke. A stroke is greater than 24 hours of symptoms related to lack of blood flow to part of the brain. There may be a stroke as a consequence of a cerebral thrombus, but not necessarily so. Ischemic strokes are usually reversible – not an infarction. NFL: Nerve Fiber Layer CWS: Cotton Wool Spots <u>Include</u> • An optic nerve infarct or ophthalmic CVA should be recorded as a stroke. Ophthalmic CVA type is ischemic. o CRAO: Central Retinal Artery Occlusion o BRAO: Branch Retinal Artery Occlusion o AION: Anterior Ischemic Optic Neuropathy • If there is a bleed in the brain that flows into an ischemic stroke, code it as an ischemic stroke. • Lateral medullary syndrome (the Wallenberg syndrome) can be coded as a stroke per the neurologist's diagnosis. <u>Ischemic strokes fit 1 or more of the following criteria:</u> a) Focal deficit, without evidence of blood on CT/MRI, or b) Focal deficit, with mottled appearance in the appropriate location on CT (mottled appearance arises because high density blood appears in an area of low density infarction; such bleeding is secondary to the ischemia), or c) Surgery or autopsy evidence of infarction. <u>Hemorrhagic strokes fit 1 or more of the following criteria:</u> a) Blood in the subarachnoid space or ventricles by CT/MRI/LP (lumbar puncture) or surgery/autopsy, or b) Dense intraparenchymal blood by CT/MRI/surgery/autopsy, or c) Stroke symptoms and death within 24 hours, without CT/MRI/surgery. <u>Exclude</u> • Mini-stroke or Transient Ischemic Attack (TIA) should be recorded under C.7.3, TIA. • Do not record aneurysm. An aneurysm is not a stroke, but a stroke could result from a ruptured aneurysm. Old infarcts (strokes) identified on neuroimaging with an unknown date should be recorded under C.7.2, Old Infarct Date Unknown. Old infarcts are always lacunar/ischemic. <u>Unknown stroke type</u> If the description of stroke type in the medical record is "indeterminate," "uncertain," or a description is missing, code as "unknown."

If the source data does not contain a diagnosis, do not abstract a diagnosis from a third-party report. For example, if a TIA is noted in an ophthalmology note as "probable TIA as noted by Dr. Smith", but there is no diagnosis or other evidence in the visit with Dr. Smith, this TIA should not be abstracted.
If a patient has a history of a CVA or TIA before becoming a GHC Member, or at an outside hospital with no documentation in chart, collect the first date and diagnosis of the event that is mentioned in the chart. For example, the subject becomes a GHC member in 1985. The first chart notes state "CVA in 1981." Enter 1981 in the database and enter as much information as you have about the stroke. If conflicting dates or diagnoses (CVA vs. TIA) are reported later, do not change your database entry and enter the conflict in Abstractor Notes. If the historical year is unknown, enter the information in Conditions of Note.

If a stroke is part of the differential diagnosis, but <u>is</u> ruled out, do not code a stroke. If a stroke is part of a differential diagnosis but <u>is not</u> ruled out, code a stroke.

<u>Preferred order of collection for stroke diagnosis and date of diagnosis</u>:
1. Neurologist
2. Positive CT scan with clinical correlation (omit CT scan for TIAs). A negative CT scan is not enough to rule out a stroke unless the provider also rules it out.
3. PCP
4. ER/UC
5. Self-report

<u>Level of certainty synonyms</u>
These synonyms can assist in determining the level of certainty; however, the abstractor is not restricted to this list:

Definite	No qualifier, consistent with, definite, certain, certainly, consistent with
Probable	Suggestive of, likely represents, probably represents, looks like
Possible	Possibly represents, ?stroke, may represent, might represent, could be, not inconsistent with, cannot rule out
Unknown	Historical item (self-report pre-GHC records), or no evidence for level of certainty

<u>Active Condition coding includes:</u>
Abstract every time it occurs

C.7.2 Old Infarct Date Unknown

<table>
<tr><td>Description</td><td>Diagnosis of an old infarct, date unknown</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Stroke Event</td><td>checkbox</td><td></td></tr>
<tr><td>Type</td><td>options group</td><td>Stroke
Old Infarct (Date Unknown)
TIA</td></tr>
<tr><td>Level of certainty</td><td>drop-down</td><td>definite
probably
possible
unknown</td></tr>
<tr><td>Date (of scan)</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
</table>
> button to add additional records

Delete Event button
</td></tr>
<tr><td>Definition</td><td>This field is for reports on neuroimaging studies that indicate an old brain infarction</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>lacunar infarct, old stroke, old CVA</td></tr>
<tr><td>Sources</td><td>Neurology visit notes, CT/CAT/MRI/PET/SPECT reports, emergency room visit report, hospital discharge summaries, MD or provider visit notes, urgent care reports, Epic/chart problem lists, Epic Imaging tab</td></tr>
<tr><td>Discussion</td><td>Old infarcts are identified incidentally on neuroimaging reports. These will be reported on the date that the neuroimage shows the infarct.

The subject may have suffered a recent TIA or CVA and at the time of the recent event had a neuroimaging scan which revealed old damage as well as possibly new damage to the brain. A subject may also have an imaging scans of the brain for other reasons, such as after trauma from a motor vehicle accident. Old infarcts may be diagnosed incidentally when the neuroimaging scan is performed. Do not code mentions in chart notes of an old TIA or an old stroke as an “old infarct date unknown.” The old infarct must be diagnosed on neuroimaging. Mentions in chart notes of an old stroke without corresponding neuroimaging can be coded as a yearly historical item if the year is known, or recorded in Conditions of Note if the year is unknown.

Record “old infarct date unknown” every time it is mentioned on a CT or MRI scan.
Select the “Unknown” option under the drop-down “Level of Certainty” menu</td></tr>
</table>

for an “Old infarct date unknown” which does not have a level of certainty. Note that this field is based entirely on neuroimaging. Neuroimaging findings do not require symptoms to be abstracted. These infarctions thus may represent old strokes (which would require at least 24 hours of symptoms) or may have been entirely asymptomatic.

Level of certainty synonyms

These synonyms can assist in determining the level of certainty; however, the abstractor is not restricted to this list:

Definite	No qualifier, consistent with, definite, certain, certainly, consistent with
Probable	Suggestive of, likely represents, probably represents, looks like
Possible	Possibly represents, ?stroke, may represent, might represent, could be, not inconsistent with
Unknown	Historical item, or no evidence for level of certainty

C.7.3 TIA

<table>
<tr><td>Description</td><td>Diagnosis of TIA</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Stroke Event</td><td>checkbox</td><td></td></tr>
<tr><td>Type</td><td>options group</td><td>Stroke
Old Infarct (Date Unknown)
TIA</td></tr>
<tr><td>Level of Certainty</td><td>drop-down</td><td>definite
probably
possible
unknown</td></tr>
<tr><td>Date</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
</table>
> button to add additional records

Delete Event button
</td></tr>
<tr><td>Definition</td><td>Transient ischemic attack</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Mini-stroke, TIA
Amaurosis Fugax (transient monocular/binocular vision loss)
Hemispheric Carotid Artery Syndrome
Reversible Ischemic Neurologic Deficit (RIND)</td></tr>
<tr><td>Sources</td><td>Emergency room visit report, hospital discharge summaries, MD or provider visit notes, Medic 911 care report, neurology visit notes, urgent care reports Epic/chart problem lists</td></tr>
<tr><td>Discussion</td><td>A TIA is the rapid decline of brain function due to a disturbance in the supply of blood to the brain that lasts less than 24 hours. It occurs when the blood supply to a part of the brain is briefly interrupted.

Neurological deficits of a TIA last less than 24 hours. If symptoms persist longer than 24 hours, then it is categorized as a CVA (stroke) and not a TIA.

A retinal artery occlusion can be a TIA or stroke, depending on how long symptoms last.

<u>Level of certainty</u>
Level of certainty is coded according to physician diagnosis. The level of certainty for a TIA reported as “?TIA” should be reported as “possible” TIA.</td></tr>
</table>

Reports from a specialist in the field of the diagnosis of interest, a hospital discharge summary with the discharge diagnosis of interest, or from a subject's primary care provider are generally more accurate than reports from a specialist in an unrelated field. For example, a patient may have been diagnosed with a TIA in a hospital or ER discharge summary. Later you see a report of a stroke on the same date on an ophthalmology medical history summary. Abstract the diagnosis from the visit or the specialist pertaining to the diagnosis of interest, in this example TIA rather than stroke, from the encounter when the diagnosis was made.
Exclude TIA reported only on an autopsy report and not reported elsewhere in chart.

If a TIA is part of the differential diagnosis, but is ruled out, do not code a TIA.
If a TIA is part of a differential diagnosis but is not ruled out, code a TIA.

Preferred order of collection for stroke diagnosis and date of diagnosis:
1. Neurologist
2. Positive CT scan with clinical correlation (Omit CT scan for TIAs). A negative CT scan is not enough to rule out a stroke unless the provider also rules it out.
3. PCP
4. ER/UC
5. Self-report

Level of certainty synonyms
These synonyms can assist in determining the level of certainty; however, the abstractor is not restricted to this list:

Definite	No qualifier, consistent with, definite, certain, certainly, consistent with
Probable	Suggestive of, likely represents, probably represents, looks like
Possible	Possibly represents, ?TIA, may represent, might represent, could be, not inconsistent with
Unknown	Historical item, or no evidence for level of certainty

Active Condition coding includes:
Abstract every time it occurs, or is charted as a possibility by a doctor

C.8 Atrial Fibrillation (AFIB)

<table>
<tr><td>Description</td><td>Diagnosis of Atrial fibrillation/Atrial flutter</td></tr>
<tr><td>Codes</td><td>Initial AFIB (in the Initial Diagnoses tab in Form 1: History)
<table>
<tr><td>AFIB, date of initial diagnosis</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>Resolve in this calendar year?</td><td>drop-down</td><td>No (did not resolve)
Yes, spontaneously
Yes, not spontaneously
Unknown</td></tr>
</table>
Atrial Fibrillation (Subsequent to initial episode, in the Med Cond/Proc (A) tab in Form 2: Yearly Items)
<table>
<tr><td>Subsequent AFIB</td><td>options group</td><td>AFIB in current year
No AFIB in current year but previous diagnosis</td></tr>
</table>
Undo button</td></tr>
<tr><td></td><td>ECGs
<table>
<tr><td>ECG date</td><td>date entry</td><td>mm/dd/yyyy</td></tr>
<tr><td>ECG result</td><td>drop-down</td><td>Sinus rhythm
Afib/Aflutter
Paced
Unknown
Other (includes Irregularly Irregular)</td></tr>
<tr><td>If other, specify</td><td>text box</td><td></td></tr>
</table>
> button to add additional records

Delete ECG button</td></tr>
<tr><td>Definition</td><td>Atrial fibrillation is a cardiac arrhythmia marked by rapid disorganized depolarizations of the atrium, causing a totally irregular rapid atrial rate; it may be controlled by drug therapy or electrical cardioversion. It is recognizable on an electrocardiogram.</td></tr>
</table>

	Atrial flutter is a related cardiac arrhythmia that is distinct from atrial fibrillation in that it is regular and rapid, while atrial fibrillation is irregular.
Abbreviations/ Synonyms	A Fib, AF, atrial fibrillation, atrial flutter, auricular fibrillation ECG, EKG = electrocardiogram
Sources	Cardiology visit notes, emergency room reports, hospital discharge summaries, MD or provider visit notes, Epic ECG tab, ECGs in chart, pacemaker reports, pacemaker interrogations, Holter reports, King of Hearts reports (refer to notes below for detail on the various reports and how/when to capture information from them) Do not include results from ECHOs
Discussion	**Discussion of the AFIB/atrial flutter conditions** Atrial fibrillation can be treated by: • Trying to restore the normal sinus rhythm, whether through a shock or a medication. This may work short-term but is often not successful in keeping the person out of atrial fibrillation. • Prolonging the refractory period of the AV node, thus slowing the heart rate down. Some calcium channel blockers do this (notably diltiazem and verapamil) and so do beta blockers (such as metoprolol or atenolol). • Anticoagulation (typically with warfarin / Coumadin or aspirin) to prevent blood clots In **atrial flutter**, a different electrical physiology is in place. Here some pacemaker cells outside of the normal pacer (the SA node) escape their usual inhibition, and also initiate depolarization cycles faster than the SA node. Very typically these cells will have depolarization cycles at a rate of 300 times per minute, but the AV node will be refractory during the first one and will depolarize with the second one. This causes a sawtooth "flutter" pattern and a (ventricular) heart rate of 150 and is often the actual heart rate for atrial flutter. This underlying electrical physiology results in the symptoms of atrial flutter: rapid and regular (as opposed to irregular) electronic rhythm resulting in ineffectual quivering (as opposed to fibrillation) of the atrium and incomplete atrial emptying, and regular and rapid ventricular beats. While the underlying physiology of atrial flutter is different from that of atrial fibrillation, the clinical consequences (incomplete emptying of the atrium, clots, and stroke risk on the one hand, and too-rapid ventricular rate on the other hand) are the same as atrial fibrillation, and the treatment strategies are the same. These similarities are why these conditions are often lumped together, and why we are doing so as well. **AFIB/atrial flutter abstraction directions:** **Initial** onset date of AFIB/aflutter This field captures the first diagnosis of atrial fibrillation/atrial flutter recognized clinically and confirmed by ECG. This section will only be filled out for the first lifetime episode. Enter the ECGs in the initial year of diagnosis of AFIB in the Subsequent AFIB / No AFIB section, including the ECG which is used in the initial diagnosis of AFIB.

	An initial diagnosis of AFIB from hospital records (in the absence of the actual ECG) is enough evidence to abstract as the initial year of AFIB. You can interpret a physician notation of "ECG showed AF" as meaning that a 12-lead ECG showed AF. If the physician note says, "we saw a few beats of AF on telemetry," we do not accept that. If a patient is admitted and the 12-lead (either on admission or later during the stay) showed AF, the way the physician would report that is: "The ECG showed atrial fibrillation." If the hospital record specifies that an ECG was done and it showed AFIB, we do not need the actual ECG to abstract the initial year. 12-lead vs 3- or 5-lead EKG: • *3-lead is usually used on transport monitors, and monitors two different areas of the heart (one lateral, two inferior). King of hearts is only 2-3 lead so cannot be used for the initial diagnosis but can be used for subsequent events.* • *5-lead is preferred in an ICU, to monitor the third (anterior) area. For example, if the patient is admitted as a r/o MI (rule out Myocardial Infarction suspicion pt is having a heart attack), with the 5-lead you can keep an eye on the three areas of the heart and if you see changes in any of the leads (especially if accompanied by chest discomfort or vomiting or VS changes), you can (per protocol, hopefully) get a 12-lead ECG.* • *12-lead ECG gives a more detailed look at the heart's three areas (anterior=front, lateral=side, inferior=back), and changes in certain segments of the ECG in the related leads for each area suggest the area of concern.* • *For example, ST changes in leads II, III and aVF may suggest a problem in the right coronary artery. 12 lead EKG is also used to identify Axis and specific bundle branch blocks. You may have an irregular rhythm with a wide QRS complex–a 12 lead can be useful in distinguishing a fib with aberrant conduction from v tach.* If you see a physician statement from a GHC/KPWA visit that an ECG showed AFIB, look for the corresponding ECG. We prefer that this variable be coded based on actual ECGs if possible rather than physician statements alone. In some cases, the first physician to read an ECG may not be a cardiologist, and their reading may not be accurate—the cardiologist may later read the ECG as NOT showing AFIB. So when both a physician statement and a confirmed ECG are available (see below), please give more weight to the confirmed ECG than the physician statement in a chart note. In nearly all cases, we require an ECG or a mention of an ECG to code AFIB. You may run across a compelling case, particularly an inpatient stay, where there is no mention that any ECG was done but you feel sure it was present. For now, please bring these cases for group discussion. <u>Date of Initial Diagnosis</u> Date of the first diagnosis of atrial fibrillation/atrial flutter recognized clinically and confirmed by ECG. This date will be entered once. The event must meet the following criteria to qualify for inclusion. Do not enter the date of the event if it does not qualify. • Initial AFIB must be confirmed by a 12-lead ECG. Do not include 3, 4, or 5 lead ECGs, which are used for monitoring. Twelve-lead ECGs performed as

part of exercise treadmill testing can be included.

- Atrial flutter is considered the same as atrial fibrillation. (see above)
- If participant developed AFIB during or after surgery (beginning at any time during the post-op hospital stay), AFIB must continue through discharge to qualify.
- If the onset of AFIB occurs during a hospitalization and the participant expires during that stay, the case does not qualify.

Resolve in calendar year

- No, did not resolve = continual AFIB through the rest of the calendar year
- Yes, spontaneously = resolved spontaneously without electrical cardioversion or medications
- Yes, not spontaneously = resolved with the use of electrical cardioversion or medications
- Unknown = cannot be determined. For example, patients are given IV or PO medications in the ER or urgent care, and some are sent home in AFIB. Then you see a couple of days later that they are back in sinus, but you often don't know the exact time course of the resolution or whether they actually took the PO medications they were sent home with. Was the resolution spontaneous or due to medications? Choose "unknown" if you can't tell, as in the situation just described.

If it isn't obvious whether it has resolved (and if so, spontaneously or not), it should be likely coded as "unknown". The best proof that it resolved is an ECG showing sinus rhythm, or a doctor's note saying the person was cardioverted and went into sinus rhythm. Don't abstract based on a patient saying it resolved (people can be in AF and not feel it) or a doctor saying it resolved based on listening to the chest (if the heart is fast, it can be hard to tell if it is regular or irregular.) A note such as "afib reasonably controlled" means it has not resolved; this probably refers to the heart rate rather than the afib rhythm.

Subsequent AFIB / No AFIB

This section will be filled in with all ECG results starting at the date of initial diagnoses of AFIB. All subsequent ECGs should be collected after AFIB has been diagnosed, even if AFIB is not an Active Condition. If there are no subsequent ECGs to enter, leave the subsequent AFIB module blank. Fill out the section if the participant has any ECGs beginning with the initial ECG that diagnoses AFIB/atrial flutter. Indicate whether the subject had AFIB or did not have AFIB as documented in ECG results by checking the "AFIB in current year" or "No AFIB in current year but previous diagnosis" box. Generally, you should not code Subsequent AFIB / No AFIB if there are no ECGs to enter in the year.

In almost all cases, self-reports of AFIB or MD reports of AFIB without an ECG should not be coded as Subsequent AFIB / No AFIB. However, if a patient has a hospital stay outside of a GH/KP facility, you may feel that there is compelling evidence from a discharge summary or inpatient consult note that AFIB was present, for instance a statement by an MD treating the patient in the hospital that the ECG showed AF. In these cases, you may code AF as present. For the time being, please

	bring these cases to the PM for review and discussion. Please see information above about seeking ECGs to confirm a physician statement in the chart that an ECG showed AF. Cardiologist visits • Disregard cardiologist exams with auscultation (listening with a stethoscope) whether performed by a cardiologist, ARNP-C (Advanced Registered Nurse Practitioner with a cardiology certification), or PA-C (Physician Assistant with cardiology certification). ECGs Duplicate ECGs in chart: When an abstractor encounters more than 1 paper ECG on the same day, check the date and time stamp closely because these are likely a single ECG. (This issue won't come up for ECGs in Epic.) One may be the initial version that has not yet been read by a cardiologist ("unconfirmed"). The next may be the "final" read by the cardiologist. Look on the ECG itself for the words "confirmed" or "unconfirmed" or the name of a cardiologist who has read it. If there are two copies, use the "confirmed" read. When in doubt, bring them to the PM to review with the PI. One ECG with multiple interpretations: The cardiologist's interpretation (in a consult note or written on the ECG itself) is more likely to be accurate and should override the interpretation by a family practice or primary care doctor or the initial interpretation by a machine (found on an "unconfirmed" ECG). You will typically find the cardiologist's opinion on the "confirmed" ECG itself, while the family doctor or urgent care doctor's interpretation will be written in their chart note. You may see a discrepancy between what the ordering doctor thought was present (written in the chart note) and the final confirmed interpretation of the ECG (which is written on the ECG itself). In this case, the results of the confirmed ECG should be considered more accurate. When in doubt, bring these scenarios to the group for review and discussion. Be careful to consider whether there were several ECGs done with varying results vs. the same ECG with different people reading it. Example 1: An ECG is done; the primary care doctor writes "AF" in a note, but the ECG is ultimately read by the cardiologist as NOT showing AF. Do not code as AF. Example 2: Primary care doctor interprets as "new onset atrial fib". Two paper ECGs are found in the chart, both with other interpretations (not AF). Patient is then admitted to hospital and discharge summary is not convincing for AF. Do not code as AF. Multiple ECGs on the same day: Double-check that they are distinctly different ECGs and not multiple interpretations of the same one. If so, abstract all ECGs even if they occur on the same day, regardless of whether the results differed (e.g., two afibs in one day, two sinuses, one afib and one sinus). Outside hospital/MD notes only, no ECGs available: If it is uncertain, "possible," or marked as "maybe" that AF was present, don't code as AF. If it seems certain, then code it. If note definitely states that patient went back and forth between AF and sinus, then use ECG fields to code both rhythms as being present. A statement that

	the patient was cardioverted for atrial fibrillation is a strong confirmation that AF was present, even without any mention of an ECG. (However, there are other reasons that can prompt cardioversion, so make sure that the statement about cardioversion relates to AF.) Bring any middle ground records to the PM for review and discussion. Example 1: Patient is seen in ED and admitted to the hospital. Chart note from ED visit indicates that ECGs showed patient was intermittently in AF and intermittently in sinus rhythm. Code as both rhythms being present. Example 2: Patient is hospitalized and the discharge summary says “ECG was interpreted variously as showing AF or wandering atrial pacemaker; the latter is currently favored.” Do not code as evidence of AF being present. Example 3: Hospital discharge note says paroxysmal AF was present during the stay and patient was cardioverted with a drug. There is no explicit language about an ECG. Code this as AF being present. <u>Other situations/notes</u>: • Include ECGs in the initial year of diagnosis, beginning with the ECG that diagnoses AFIB. • ECGs, Holter monitor tests, telemetry, stress test printouts, implantable loop recorders (ILRs) or home event monitoring devices (such as “King of Hearts” device) are acceptable relevant studies. Do not include results from echocardiography. • Holter monitor tests should be coded on the day the test was started. If there are multiple rhythms on the Holter monitor test, the rhythms should be entered as multiple diagnoses on the same date. • ECGs performed as part of exercise treadmill testing can be included. • If findings include "Sinus" or "Normal sinus," code it as sinus, even if there is other descriptive information after the "Sinus" or "Sinus rhythm" finding. For example, Sinus Tachycardia can be coded as “Sinus.” • If findings include Afib or Aflutter, check “Afib/Aflutter.” • If findings include "Regular" rate or rhythm findings but don’t include “Sinus,” select “Other” and write the description (first two lines on the ECG) in the text box. • For any other findings that do not show Afib, Aflutter, or Sinus, select “Other” and write the description (first two lines on the ECG) in the text box. This includes findings described as “irregularly irregular” that are not stated to be AF. • If AFIB shown on ECG is reported in a hospital record (in the absence of the actual physical copy of the ECG, and not specified if 12-lead vs. 3- or 4-lead) this is enough evidence to abstract as an ECG result for the initial diagnosis of AFIB. We interpret a physician notation of "ECG showed AF" as meaning that a 12-lead ECG showed AF. If the physician note says, "we saw a few beats of AF on telemetry," we do not accept that. If a patient is admitted and the 12-lead (either on admission or later during the stay) showed AF, the way the physician would report that is: "The ECG showed atrial fibrillation." Code AF if the

	discharge record is compelling, even if the chart doesn't specifically state 'ECG'. Do not capture if the record says "possible" or "questionable." Bring any middle ground records to the PM for more review and discussion. • ECG results (either AFIB, Sinus, Paced, or Other) reported in the chart (in the absence of the actual physical copy of the ECG, and not specified if 12-lead vs. 3 or 4 lead) are enough evidence to abstract as an ECG result for Subsequent Year AFIB / No AFIB, if the ECG was performed or read by a cardiologist or a cardiology consult was done. • If there are multiple dates stamped on the ECGs, use the earliest date. This will ensure consistency among abstractors. • If the participant has a pacemaker and the rhythm is recorded as "Sinus rhythm" on an ECG, choose "Sinus rhythm" from the drop-down menu. • If the participant has a pacemaker and the rhythm is recorded as "AFIB" on an ECG, choose "AFIB" from the drop-down menu. • If the participant has a pacemaker and the rhythm is recorded as "Paced" on an ECG, choose "Paced" from the drop-down menu. • If the participant has a pacemaker and the rhythm on the ECG cannot be determined, choose "Paced" from the drop-down menu. Do not choose "Other, specify." • Enter "Pacemaker Report" and "Pacemaker Interrogation" results as "Paced" if no rhythm is specified or if the rhythm cannot be determined on the pacemaker report or pacemaker interrogation. <u>Undo Button in Subsequent AFIB</u> The 'Undo' link in the Access database does two things: (1) it clears the yes/no value in the options group; (2) it disables the two subforms below it. It will NOT erase the data within the subforms. If an abstractor realizes that they shouldn't have added a cardiologist or an ECG record, they should push the "Delete Record" button to clear those records first, then double-click "Undo" to clear the yes/no value in the options group. On 02/08/11 we began collecting ECGs in the initial year of diagnosis. Prior to that date, we did not collect ECGs in the initial year of diagnosis. However, we did require the initial episode of AFIB to be diagnosed on ECG and we collected data on whether the incident lasted more than 7 days, if it resolved, and if it did resolve, if there were other episodes during the following six months. See Appendix D.9 for the AFIB Methods Section text. <u>Active Condition coding includes:</u> Abstract every ECG beginning with the initial diagnosis of AFIB.

C.9 Yearly Items: Lifetime Health Monitoring Program

<table>
<tr><td>Description</td><td colspan="3">The Lifetime Health Monitoring Program (LHMP) Questionnaire was administered at Group Health to patients age 65 and older from approximately 1990-2006. It is a self-reported history of various health and demographic information.</td></tr>
<tr><td>Codes</td><td colspan="3">
<table>
<tr><td>Marital status</td><td>checkboxes</td><td>Married
Divorced
Separated
Widowed
Never Married</td></tr>
<tr><td>Number of children</td><td>Numeric text box</td><td></td></tr>
<tr><td>Non-Prescription Medications</td><td>text boxes</td><td>Enter only the name of the medication. Do not enter dosage, frequency, route, or any other extraneous information the subject may have written in.</td></tr>
<tr><td>Experienced the following in the past year</td><td>checkboxes</td><td>Marriage
Divorce or separation
Personal illness or injury
Change of residence
Death of spouse/partner or close friend
Major illness or death in your family
Retirement or change of job</td></tr>
<tr><td>In the last month, distressed or bothered by
Feeling low in energy or slowed down
Blaming yourself for things
Feeling lonely or blue
Sleep that is restless or disturbed
Feeling hopeless about the future
Feeling everything is an effort</td><td>radio buttons</td><td>Not at all
A little bit
Moderately
Quite a bit
Extremely
<u>Undo</u></td></tr>
<tr><td>Health Habits and Risks:
1. Do you exercise regularly?</td><td>radio buttons</td><td>Yes
No
<u>Undo</u></td></tr>
</table>
</td></tr>
</table>

	If yes, what exercises?	text box	
	How many times per week?	text box	
	For how long?	text box	
	2. Do you smoke cigarettes now?	radio buttons	Yes No Undo
	If you quit, when?	drop-down	Month
	If you quit, when?	numeric text box	Year
	If smoking, how many per day?	text box	*Enter it as it appears, either as one number or a range (for example 10 or 10-20).*
	How long have you smoked?	text box	
	3. Are you overweight?	radio buttons	Yes No Undo
	4. Do you drink alcoholic beverages?	radio buttons	Yes No Undo
	If yes, how many per week?	radio buttons	7 or less 8 to 14 15 or more Undo
	Have you ever: Felt the need to cut down?	radio buttons	Yes No Undo
	Felt annoyed by criticisms?	radio buttons	Yes No Undo
	Had guilty feelings about drinking?	radio buttons	Yes No Undo
	Taken a morning eye-opener?	radio buttons	Yes No Undo
	Functional Assessment/ Planning for the Future 1. Do you have difficulty with: Dressing Bathing Getting in and out of bed Using the bathroom Eating	radio buttons	Yes No Undo

<table>
<tr><td></td><td>
<table>
<tr><td>Doing household chores
Shopping</td><td></td><td></td></tr>
<tr><td>2. Do you drive?</td><td>radio buttons</td><td>Yes
No
Undo</td></tr>
<tr><td>3. If you need help or someone to talk to, is there someone you can call?</td><td>radio buttons</td><td>Yes
No
Undo</td></tr>
<tr><td>4. Do you manage your own finances?</td><td>radio buttons</td><td>Yes
No
Undo</td></tr>
<tr><td>5. Do you have a will?</td><td>radio buttons</td><td>Yes
No
Undo</td></tr>
<tr><td>6. Have you signed a living will or power of attorney?</td><td>radio buttons</td><td>Yes
No
Undo</td></tr>
<tr><td>If no, do you know where to get assistance in acquiring one?</td><td>radio buttons</td><td>Yes
No
Undo</td></tr>
</table>
</td></tr>
<tr><td>Definition</td><td>The LMHP is only found in hard copies in the subject chart. The LHMP tab becomes visible in the database in years when the subject is age 65 and older.</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>LHMP, health questionnaire</td></tr>
<tr><td>Sources</td><td>Lifetime Health Monitoring Program Questionnaire in charts</td></tr>
<tr><td>Discussion</td><td>The LHMP is a valuable opportunity for this project as data that are difficult to abstract from other places are collected in a systematic way with this form. We thus designed this section of the chart review tool to simply record responses from this form in the same way in which they are recorded. Data is to be entered directly from the LHMP and no judgment/decision-making is involved.

Older versions of self-report Adult Health History Questionnaires were administered prior to 1990. The older versions may be solid white, or white with a black, blue, or with an orange border and contain different questions than the LHMP. The LHMP is white with a green border. Only enter data from the LHMP into the LHMP database module. There is information on the older versions which can be entered on the Demographics/BP page of the Access database, such as physical activity level and smoking. The older versions do not contain information on ADLs, marital status, or other data that is collected on the newest version.</td></tr>
</table>

	A full copy of the newest version of the LHMP Questionnaire can be found here: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Database Work Area\Lifetime Health Monitoring Module\Lifetime Health Monitoring Program Health Questionnaire Age 65 and Over.pdf Enter data as the subject has entered it on the questionnaire. Do not attempt to interpret data or move it to a different section which seems correct. If the subject has left questions blank on the questionnaire, leave them blank in the database. Do NOT enter 0, none, n/a, etc. If a subject has marked more than one answer per question on the "Distressed and Bothered" section, enter the highest answer marked. If a subject has made an unclear mark between a Yes/ No checkbox, or has marked a Yes/No checkbox with a question mark, leave the corresponding radio button entry blank in the database. If a radio button entry has been entered in error, double-click "Undo" to remove the entry. If the subject has completed more than one LHMP in the same calendar year, only enter the data from the first LHMP completed in the year in the database. Do not attempt to backfill any missing data from the first LHMP of the year by collecting data from subsequent LHMPs in the same calendar year. For non-prescription medications, enter only the name of the medication. Do not enter dosage, frequency, route, or any other extraneous information the subject may have written. Enter the medication as written by the patient, even if it is misspelled. If an over-the-counter (OTC) med list is attached to the LHMP, you may use it to enter information asked for in the LHMP. However, if you find the same list in another part of the chart (not attached to the LHMP), you cannot use this information. Data collected on the LHMP form should not be entered in duplicate on the demographics page. This includes Alcohol and Smoking. However, if non-prescription medications such as chronic ASA or chronic NSAIDs (for arthritis) are listed on the LHMP form, they can also be listed in the ASA and Arthritis: NSAIDs sections. Chronic ASA can be abstracted if the subject takes it for any reason, but chronic NSAIDs should only be abstracted under Arthritis: NSAIDs if the subject takes them for arthritis. The last page of the LHMP is a physical assessment standard form. This is not entered in the LHMP module. Data on this page can be entered in the appropriate areas of the Access database. Weight, BP, and standard SOAP (Subjective, Objective, Assessment, Plan) visit notes can be found on this page. The LHMP tab only becomes available in the database the year that a subject turns 65. If a subject is inadvertently given/completes an LHMP before they turn 65, abstract all relevant information respectively into that year as if it were a pre-LHMP health questionnaire.

C.10 Yearly Items: Medications Pre-1977

<table>
<tr><td>Description</td><td>Yearly collection of specific medications prescribed to subject pre-1977.

Effective 1/1/2024: Only abstract years in which the participant was aged 40+. If they were born after 1937, do not abstract pre-1977 meds because all years would be before age 40. If they were born prior to 1937, abstract the years from age 40 until 1977.</td></tr>
<tr><td>Codes</td><td><table><tr><td>Medication</td><td>drop-down</td><td>Pre-1977 medications of interest list (not subject-specific)</td></tr></table>
> button to add additional records

Delete Med Record button

Search Chart Review Drug Tables button

Text box which auto-fills with drugs from the Chart Review Drug Tables

User-defined Drugs Table button</td></tr>
<tr><td>Definition</td><td>Yearly collection of specific medications prescribed to a subject prior to 1977</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Rx, script</td></tr>
<tr><td>Sources</td><td>Medical record (see D.6.1: Medications of Interest)</td></tr>
<tr><td>Discussion</td><td>The purpose of collecting pre-1977 med exposure is to identify chronic medication exposures, analogous to the outpatient pharmacy records 1977 onward.
Prior to 1/1/1977 (pre-’77): Abstract prescribed medications of interest, including those from the following categories:
antidepressant
antihypertensive
antipsychotic
diabetic medication including insulin
hormone
sedative
thyroid
antimalarials
The Pre-1977 drop-down list also includes a few specific medications of interest that do not fall in these categories but were chosen by the investigator, such as Warfarin.</td></tr>
</table>

All medications included in the Pre-1977 drop-down list which are not in the above categories can be considered exceptions to the Medications of Interest categories.

As of 9/17/2013, Paul Crane said it's fine to abstract antimalarials ("-quins") as well.

All medications in the categories of interest that are recorded in the subject's chart should be selected from the Pre-1977 drop-down list. See below for directions to abstract medications of interest from the categories above that do not appear in the drop-down library list.

Do not abstract Pre-1977 medications of interest that were given only in an inpatient setting. However, abstract medications of interest that were newly prescribed at discharge from a Pre-1977 hospitalization or ER visit.

Historical Medications

If a chart note mentions that a particular medication was taken every year for a period of time (e.g. 12 years of Premarin, or 40 years of thyroid), add a year to the database for each year the medication was taken (pre-1977) to abstract this medication.

Directions for Pre-1977 Medication entry in the Access database:

1. Multiple medication records can be added within the year by advancing the right "Record" > button at the bottom of the medication box (about halfway down the page). Use the right and left "Record" buttons to toggle between records.
2. Medications appear in the Medication drop-down box in two columns. The generic name is in the first column. If there is a brand name it will appear in the second column. The generic name may also appear in both the first and second columns. Select the medication of interest from the drop-down list. If a medication is not in the drop-down list, search for it in (1) the GHC Drug Formulary (hyperlink appears in the database) http://www.crlonline.com/crlsql/servlet/crlonline
3. Search in the GHC Drug Formulary for the name of the medication that appears in the chart, but not in the Medication drop-down list. When you find it, ensure that the medication is in one of the categories of interest listed above. You may see the brand name appear in the chart and only the generic name appears in the database.
4. Once you have matched the brand name(s) with the generic name, check the Medication drop-down list to see if the generic name is included. If the medication name is included, select the medication of interest from the drop-down list.
5. If the medication is not included in the drop-down Medication list under brand or generic name, use the "Search Chart Review Drug Tables" button to look up the medication. The Chart Review Drug Tables is a list of medications ever taken by any ACT participant. Medications included in the Pre-1977 list are coded as "PDI" in the Chart Review Drug Tables. If the medication appears in the Chart Review Drug Tables, select it and it will auto-fill in the blank text box below the "Search Chart Review Drug Tables" button. Do not attempt to edit or delete anything in the blank text box.
6. If the precise medication you are looking for still cannot be found, add it to the User-defined Drugs Table and then search for it again in the Chart Review Drug Tables. The medication can be added to the User-defined drug table using the "User-defined Drugs Table" button in the Access database.

	• Once you have opened the User-defined Drugs forms, enter the generic name and up to three brand names, if they are known. Look these up in the GHC Formulary. • Select your name from the drop-down menu entitled "Added by." • Click the "Today" button which will enter today's date in the "Added On" field. • Multiple medication records can be added within the year by advancing the > button at the bottom left side of the screen to add additional records. • Click the "Close Form" button to return to the Medications tab. • Return to the Search Chart Review Drug Tables form and search for the drug name you just entered in the User-defined Drug table. Select the name and it will auto-fill into the Medication drop-down menu and into the blank text box. 7. Use the "Delete Med Record" button in the Access database to delete records entered in error or blank records that were accidentally created. Do not attempt to delete a record by using buttons on your keyboard such as Delete or Backspace. This does not actually delete the record. We are not documenting medication non-compliance or complementary and alternative medicine. Medications added through the User-defined Drug Table will be reviewed periodically by the Principal Investigator to determine if they should be included in the Pre-1977 drug list and coded as PDI.

C.11 Yearly Items: Cessation of Medications

<table>
<tr><td>Description</td><td>Documentation of cessation of medications due to intolerance or contraindication.

(Cessation of Medications criteria updated beginning 1/1/2024: Keep abstracting, but stop checking reason for cessation.)</td></tr>
<tr><td>Codes</td><td>
<table>
<tr><td>Ceased medication name</td><td>drop-down</td><td>Pre-populated with subject-specific medication list</td></tr>
<tr><td>Other medication name</td><td>text box</td><td>(list other medications not in drop-down)</td></tr>
</table>
> button to add additional records

Delete Med Record button

Search Chart Review Drug Tables button

Text box which auto-fills with drugs from the Chart Review Drug Tables

User-defined Drugs Table button
</td></tr>
<tr><td>Definition</td><td>Yearly collection of cessation of any medications (except for those excluded below) which are ceased due to intolerance or contraindication, the results of a specific study (e.g., doctor notes that HRT is being discontinued due to WHI findings), or new clinical guidelines with a programmatic practice change (e.g., doctor notes pre-emptive medication change due to GH/KP initiative to switch patients off certain high-risk meds).</td></tr>
<tr><td>Abbreviations/ Synonyms</td><td>Rx, script</td></tr>
<tr><td>Sources</td><td>Medical record, provider visit notes, telephone encounters, consulting nurse telephone encounters, ER and Urgent Care records, hospital discharge summaries, medication lists in Epic and chart</td></tr>
<tr><td>Discussion</td><td>The abstractor will select the ceased medication(s) in the year(s) they are ceased. The purpose of collecting ceased medications due to contraindication/intolerance is to identify potential situations in which a person was not at-risk of exposure to a particular drug.
Record any medication (except for those noted below) that is discontinued due to intolerance (nuisance side effects) or contraindication. Do not include cessation of eye drops, ear drops, nasal sprays, or topical creams or ointments such as dermatological creams, testosterone creams or estrogen cream.
Do not include complementary or alternative medicines or treatments.</td></tr>
</table>

	• If a note states that the patient is allergic to potassium (as a supplement), for example, it should be abstracted. • Note: Antibiotics were not abstracted until 1/31/13, when the decision was made to begin abstracting non-topical antibiotics. • Record both inpatient and outpatient medication cessations. If a medication is started as an inpatient and ceased for contraindication or intolerance during the same inpatient visit, it should still be abstracted as a ceased medication. • Do not include medications which are discontinued in situations in which a provider switches a patient's medication regime in order to try a different medication, but there was no contraindication or intolerance noted to the original medication. • Cessation because of a study that found adverse effects (e.g., WHI findings) should be abstracted even without personal intolerance or contraindication, because the patient is unlikely to be prescribed that medication again. Abstract the cessation and record the name of the study. • Cessation because of a programmatic practice change (e.g., provider notes medication change because of a GH/KP initiative to reduce certain high-risk meds) should be abstracted even without personal intolerance or contraindication because the patient is unlikely to be prescribed that medication again. Only abstract if the provider notes that it's part of a practice change or new clinical guidelines. Do not abstract cessation of a particular medication that is known to be on the high-risk list without mention of this reason (the provider might have discontinued it for other reasons). • Medication intolerance or contraindication may be worded in the chart as "advised not to take," or "tolerated poorly." • Abstract if there is a possibility in the chart note that the med cessation was for contraindication/intolerance. If it is plausible, the chart note doesn't have to explicitly state "X medication was ceased for X contraindication" in order to abstract the ceased medication. The chart needs to say that the participant discontinued the drug or that the doctor ordered the drug to be discontinued. • Record any cessation regardless of the length of time of cessation, if it was for a contraindication or intolerance. • Record cessation only when the cessation initially occurs and not in subsequent mentions of patient allergies or drugs the patient cannot take. • However, if a patient ceases a med and later restarts it and re-ceases it due to contraindication or intolerance, record every time the med is ceased, even if it was only ceased for a short time or was later restarted. • If you find evidence in a chart that a medication was discontinued due to contraindication or intolerance in the past (no specific date/year included), record this ceased medication in the first year it is mentioned. • If a hospital summary lists a particular drug under the Allergies section and the drug has not previously been listed as a ceased med, abstract it into the year of mention. • Record ASA cessation under Discontinuation of ASA if due to contraindication or intolerance. • For Warfarin cessation:

- If due to a bleed (e.g., GI bleed, ulcer, coffee grounds emesis), record under Warfarin Adverse Reaction (C.6.8)
- If due to a due to a contraindication other than bleed (e.g., fall risk, abnormal lab values), code under Cessation of Medications

- If a patient is allergic to or intolerant of an entire class of medications (e.g., sulfas), abstract the specific medications listed. In Conditions of Note, record that the patient is allergic to or intolerant of the class and the year of mention. Do not abstract the rest of the medications in that class, as it would be too hard to know which meds were available at that time.
- Do <u>not</u> input any information disclosing a Sexually Transmitted Disease (STD) in Conditions of Note or any other text areas of the database. If a subject ceases a med which is taken to treat an STD, you can record the med.

<u>Directions for Cessation of Medication entry</u>:

1. Multiple medication records can be added within the year by advancing the right "Record" > button at the bottom of the medication box (about halfway down the page) to add additional records. Use the right and left "Record" buttons to toggle between records.
2. Medications appear in the Medication drop-down box in up to four columns. The generic name is in the first column. If there is a brand name it will appear in the second column. The generic name may also appear in both the first and second columns. Select the medication from the drop-down list. .
3. If the medication is not included in the drop-down Medication list under brand or generic name, use the "Search Chart Review Drug Tables" button to look up the medication. The Chart Review Drug Tables is a list of medications ever taken by any ACT participant. If the medication appears in the Chart Review Drug Tables, select it and it will auto-fill in the blank text box below the "Search Chart Review Drug Tables" button. Do not attempt to edit or delete anything in the blank text box.

   Alternate method: If a medication is not in the drop-down list, search for it in (1) the GHC Drug Formulary (hyperlink appears in the database): http://www.crlonline.com/crlsql/servlet/crlonline

   Search in the GHC Drug Formulary for the name of the medication that appears in the chart, but not in the Medication drop-down list. You may see the brand name appear in the chart and only the generic name will appear in the database.
4. If the precise medication you are looking for <u>still cannot be found</u>, add it to the User-defined Drugs Table and then search for it again in the Chart Review Drug Tables. The medication can be added to the User-defined drug table using the "User-defined Drugs Table" button in the Access database.
   - Once you have opened the User-defined Drugs forms, enter the generic name and up to three brand names, if they are known. Look these up in the GHC Formulary.
   - Select your name from the drop-down menu entitled "Added by".
   - Click the "Today" button which will enter today's date in the "Added On" field.
   - Multiple medication records can be added within the year by advancing the > button at the bottom left side of the screen to add additional records.

	• Click the "Close Form" button to return to the Medication tab. 5. Return to the "Search Chart Review Drug Tables:" form and search for the drug name you just entered in the User-defined Drug table. Select the name and it will auto-fill into the Medication drop-down menu and into the blank text box. Use the "Delete Med Record" button in the Access database to delete records entered in error or blank records that were accidentally created. Do not attempt to delete a record by using buttons on your keyboard such as Delete or Backspace. This does not actually delete the record.

C.12 Form 3: Laboratory Results

<table>
<tr><td>Description</td><td>Document specific lab results</td></tr>
<tr><td>Codes</td><td>
<u>Numerical entry for the following labs three times a year</u>:
<table>
<tr><td>Blood Urea Nitrogen</td><td>BUN</td><td>mg/dL</td></tr>
<tr><td>Calcium</td><td>Ca, Ca++</td><td>mg/dL</td></tr>
<tr><td>Cholesterol
Fasting Cholesterol checkbox</td><td>Chol</td><td>mg/dL</td></tr>
<tr><td>High Density Lipoprotein (Cholesterol)</td><td>HDL</td><td>mg/dL</td></tr>
<tr><td>Low Density Lipoprotein (Cholesterol)</td><td>LDL</td><td>mg/dL</td></tr>
<tr><td>Triglycerides</td><td>TRIG</td><td>mg/dL</td></tr>
<tr><td>Serum (blood) Creatinine</td><td>Creat</td><td>mg/dL</td></tr>
<tr><td>Blood Glucose (sugar)
“Normal glucose” checkbox
Fasting Glucose checkbox</td><td>BG, BS, FBG, FBS, PPBS, RBS</td><td>mg/dL</td></tr>
<tr><td>Hemoglobin
“Normal Hgb” checkbox</td><td>Hb, Hgb</td><td>g/dL</td></tr>
<tr><td>Glycated Hemoglobin (Glycolated or Glycosalated Hemoglobin)</td><td>Ghb</td><td>%</td></tr>
<tr><td>Hemoglobin A1c</td><td>HbA1c</td><td>%</td></tr>
<tr><td>Thyroid hormone (Triiodothyronine)</td><td>T3</td><td>ng/dL
%</td></tr>
<tr><td>Thyroid hormone (Thyroxin)</td><td>T4</td><td>mcg/dL</td></tr>
<tr><td>Thyroid Stimulating Hormone</td><td>TSH</td><td>uIU/mL</td></tr>
</table>
<u>Urinalysis</u>
<table>
<tr><td>Albumin (urine)</td><td>drop-down

text box
text box</td><td>Exact
Normal
Negative
Trace
Other
Exact, specify (mg/100ml)
Other, specify</td></tr>
<tr><td>Protein (urine)</td><td>drop-down</td><td>< 5mg/100ml
Exact
Range
Normal
Negative
Trace</td></tr>
</table>
</td></tr>
</table>

		text box, checkbox text box text box	Positive Other Exact, specify (mg/100ml), _□ + Range, specify (__to__/HPF) Other, specify
	WBC (urine)	drop-down text box, checkbox text box text box	0 – 5 / HPF Exact Range Normal Rare Negative Occasional Positive Other Exact, specify (mg/100ml), _□ + Range, specify (__to__/HPF) Other, specify

> button to add additional records

Delete Year/ Period button

Numerical and date entry for **all** instances PT and INR labs, which are collected independently of the 3 time periods used to collect the other lab values.

PT/ INR Results

Date	date entry	mm/dd/yyyy
Prothrombin time (PT)	numeric text entry	seconds
Protime Control	numeric text entry	seconds
Protime Ratio	numeric text entry	
International Normalized Ratio (INR)	numeric text entry	

> button to add additional records

Delete Current PT/INR Record button

Definition	Collect specific lab results three times a year for the years prior to 1988. See discussion below. Do not collect labs from 1/1/1988 to present. Collect **ALL** PT and associated values for the years prior to 1988.
Abbreviations/ Synonyms	See table above.
Sources	Approximately **through 1984** lab results were printed on five different forms: **Hematology (pink) and chemistry (white) forms** will have documentation of the blood lab results needed. **Blue forms (cytology)** can be helpful for information on gravidity, parity,

	hormones, and menopause, for the female history module. **Yellow forms (urine results)** will have documentation of the urine lab results needed. Green forms (bacteriology) are not needed for this abstraction. **In 1985** the lab result forms were combined into one **white and green form** with hematology, chemistry, and urine results all on one sheet. Outside medical records may have lab values listed in chart notes, discharge summaries, or lab reports.
Discussion	Press >* to enter a new year/period. Type in each new year and period in the Year and Period boxes. If no labs results are found prior to 1988 check the "No labs prior to 1988" box. After finding the first record of lab results for a subject, begin this section by entering the year, and then the time period, 1, 2, or 3. **Time period 1: January 1 through April 30** **Time period 2: May 1 through August 31** **Time period 3: September 1 through December 31** Collect the years and time periods that blood and urine tests were actually completed. If there were multiple lab results for a specific test within a time period, record the first result in the period. Since all tests are not run every time a person has blood or urine labs, search carefully in order to find as many as possible. Collect GHC lab results as well as those from outside medical records. The outside lab records may come from the subject's medical history prior to becoming a GHC member. Labs performed at an outside hospital while the patient is a GHC member are acceptable. Labs drawn during any research study participation are also acceptable. <u>Low Density Lipoprotein (LDL)</u> Do not code LDH. It is not the same as LDL. <u>Blood glucose (BG, BS, FBG, FBS)</u> Blood glucose laboratory tests include fasting blood sugar/glucose (FBS, FBG) and oral glucose tolerance test (OGTT) among others. Other synonyms for blood glucose tests include PPBS=Postprandial blood sugar and PP=Postprandial RBS=Random blood sugar. The fasting blood glucose level is the most commonly used indication of overall glucose homeostasis. The glucose tolerance test, consisting of several timed measurements after a standardized amount of oral glucose intake, is used to aid in the diagnosis of diabetes. If the test is specifically stated as fasting then check the *fasting glucose* checkbox. If a glucose tolerance test is performed, the first value is the fasting value so enter that value and mark *fasting glucose*. Otherwise, just enter the value with no indication that it is a fasting measure.

	Do not record pregnancy glucose results. You can often identify them in a set of 3 on the same date. You may see PC (after meals), or PC Sugars, or 2 hours written in front of the glucose result. You may see a sudden jump in glucose readings (over 100) as a clue that this might be a pregnancy glucose test. Do not abstract urine glucose tests. Only abstract blood glucose tests. Fasting blood glucose labs have priority over non-fasting blood glucose. If there is more than one blood glucose lab drawn in a time period, enter the fasting blood glucose even if it is later in the time period. If a blood glucose is reported as "Normal," instead of as a numeric value, check the "Normal" checkbox. Do not check both "Normal glucose" and also enter a numeric glucose value in the same lab period. Enter the value that comes first in the period, as usual. If there are two values on the same day, choose the numeric value over the more general text value. "Fasting glucose" is available to be selected if either "Normal glucose" is checked, or a numeric glucose value is entered. Abbreviated results should be reported as follows: • NSA (no significant abnormality) = normal • A dash in the results field should be interpreted as 'not tested' rather than negative, normal, or leaving it blank <u>Cholesterol</u> Fasting cholesterol labs have priority over non-fasting cholesterol. If there is more than one cholesterol lab or panel drawn in a time period, enter the fasting cholesterol lab or panel even if it is later in the time period than the non-fasting lab(s). If the parts of a cholesterol panel are not drawn as a full panel, check "fasting" cholesterol and enter the values for the parts of the panel that are drawn. It is unlikely that parts of the panel will be drawn separately where some are fasting and some not fasting. If this occurs it should be flagged and indicated in Conditions of Note. <u>Hemoglobin</u> If hemoglobin is reported as "Normal" instead of as a numeric value, check the "Normal Hemoglobin" checkbox. Do not check both "Normal Hgb" and also enter a numeric hemoglobin value in the same lab period. Enter the value that comes first in the period, as usual. <u>T3 (Thyroid hormone (Triiodothyronine)</u> T3 will be recorded in the lab slips as either a % or in ng/dL Record T3 in ng/dL in the database box labeled T3____ng/dL Record T3 as a percent in the database box labeled T3____% <u>T4 vs Free Thyroxine</u>: Free thyroxine (aka free T4) is a subset of T4 (total T4) and we therefore don't code it for in T4.

	Urinalysis (UA) The UA lab module is designed to collect labs from the beginning of the chart through the end of 1987. This time period may span up to 50 years. UA labs were reported in many different ways and in many different formats throughout the years. The UA lab module was designed to be able to abstract the values we see in the chart, in the way they are reported in the chart. Record the first value reported in each time period. The "Exact" text box of each section (Albumin, Protein, WBC) is a single number numeric field. Choose "Exact" from the drop-down menu and enter the single numeric value in the "Exact, specify" text field. For Protein and WBC, if the number is reported as "x+,"(where x represents a whole number), choose "Exact" on the drop-down menu, enter the exact number, then check the "+" checkbox. The "Range" text boxes (in Protein & WBC sections) are two single number numeric fields. Choose "Range" from the drop-down menu and enter the lower and upper range numeric values in the "Range, specify" field. The "Other" text box of each section (Albumin, Protein, WBC) is used to enter any data type found in the chart which does not have a corresponding entry option in the database. Choose "Other" from the drop-down menu and enter the single numeric value in the "Other, specify" text field. The "Other, specify" fields accept both numeric and text entry. Enter a range value and unit in the text box in the "Other, specify" field. The following options in the drop-down menus stand alone and do not have an additional numeric value to enter: Albumin: Normal Negative Trace Protein: < 5mg/ 100mL (This was an option on one of the older lab slips) Normal Negative Trace Positive WBC: Normal Rare Negative Occasional Positive Abbreviated results should be reported as follows: Neg = negative Tr = trace Occ = occasional Pos = positive

	NSA (no significant abnormality) = normal UA results may appear as "normal" for WBC and protein. In this case select the "normal" option in the drop-down menu. If "urinalysis negative" is reported in the lab results, with no further information, do not individually code WBC, protein, or albumin as negative, as the UA may not include all of these tests. Do not enter these unspecified "UA" results in Conditions of Note. Note for analytic purposes: According to GH Laboratory Services, exact numbers for the WBC component of the UA were always reported as 1+, 2+, 3+, etc. Thus, the presence or absence of a + in the data may not be a distinguishing variable. See email from Lab Services for reference: \\groups\DATA\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\References\Lab values - WBC on old lab slips.msg Prothrombin Time/International Normalized Ratio (PT/INR) Prothrombin time (PT) evaluates the ability of blood to clot properly. The International Normalized Ratio (INR) is used to monitor the effectiveness of blood thinning drugs such as Warfarin (Coumadin). These anti-coagulant drugs help inhibit the formation of blood clots. If a patient is taking an anti-coagulant drug, the doctor will check the PT/INR regularly to make sure that the prescription is working properly and that PT/INR is appropriately prolonged. There is no set frequency for doing the test. The test result for PT depends on the method used, with results measured in seconds and compared to the average value in healthy people. Most laboratories report PT results that have been adjusted to the International Normalized Ratio (INR) for patients on anti-coagulant drugs. Some older PT labs report Protime Control and Protime Ratio instead of INR, as the labs' own Protime Control and Protime Ratio were used before INR was widely used as a standard ratio. Enter what is listed on the lab form associated with PT (which can include Protime Control and Protime Ratio, or INR). These lab tests appear in pre-1988 GH records as: Protime = Prothrombin Time, PT Protime Control Intl. Normalized Ratio (INR) Protime Ratio (PR), can also say Ratio (has to be associated with PT) In a form with Patient / Control / Ratio, the value for Patient = prothrombin time of the patient Do not collect PTT (Partial Thromboplastin Time). PTT is not the same thing as PT (Prothrombin Time). If the lab results are reported in a format or in units not compatible with the Access database fields, report the date and results in Conditions of Note. For example, a protime written as "22.5 sec, 23.5%" cannot be entered in the Access database fields without performing a calculation. This should be entered in Conditions of Note as "mm/dd/yyyy protime written as 22.5 sec, 23.5%." Any non-standard lab values should be entered in the Conditions of Note.

	Do not abstract urine creatinine labs or 24-hr. creatinine clearance urine labs. We are only collecting serum (blood) creatinine. For lab value units Mg%= mg/dl=mg/100ml. <u>Missing dates</u> If there is a lab with a missing date, use it in order of the section of the labs where it is filed. Labs are almost always in correct date order.

SECTION D: APPENDIX

D.1 Final Check - Required Variables

These variables are required for the abstraction record to be considered complete.

- Reviewer Name
- Final Review Date
- Total Review Time
- Review Source (Medical Record sources)
- Height

For female subjects:

- Hysterectomy
- Number of pregnancies
- OC Use
- Hormone (HRT) Use

D.2 Sources for Definitions

Investigators	Paul Crane, MD, MPH (Current) Sascha Dublin, MD, PhD (Previous)
Manual of Operations	Heart and Vascular Health Study Manual of Operations 1999 Bruce Psaty, MD, PhD Susan Heckbert, MD, MPH, PhD Diabetes and Hormone Replacement Therapy Clinic Chart Review Codebook 1999 Katherine Newton, PhD Endometrial Hyperplasia – A Cohort Study Clinic Chart Review Codebook 2006 Susan Reed, MD, MPH Inouye SK, Leo-Summers L, Zhang Y, Bogardus ST, Leslie DL, Agostini JV. A chart-based method for identification of delirium: Validation compared with interviewer ratings using the Confusion Assessment Method. J Am Geriatr Soc. 2005;53:312-318.
Websites	Definitions of some conditions are a compilation of information collected from medical websites including: • GHC Healthwise Knowledgebase • Healthline • MediLexicon • Medline • MedTerms • PubMed (NIH) • Wikipedia • WebMD • National Cancer Institute • American Heart Association • Centers for Disease Control and Prevention (CDC) • American College of Sports Medicine (ACSM)
Additional Consultation	The chart review team gratefully acknowledges helpful input from: • Eric B. Larson, MD MPH • Gail Li, MD PhD • Susan Heckbert, MD PhD • Ann O'Hare, MD MPH • Wayne McCormick, MD MPH • D. Scott Weigle, MD

D.3 Sources for Medical Information in the Charts

Adult Health History Questionnaires
AMS, anticoagulation telephone calls
assisted living facility communications
audiology reports
breast cancer screening form
cancer staging reports
cardiology visit notes
chart request form
consulting nurse phone encounters
CT scan reports
cytology lab slips
death certificate
ECGs in chart
ECG tab in Epic
ECHO reports
EpicCare email messages
emergency room reports
enrollment questionnaire (GHC)
ENT (ear, nose, throat) visit notes
EpicCare or chart Problem List
female exam lab slip
female health visit record
geriatric evaluation visit notes
HEAR Center
home health services forms
hospital discharge summary
hospital notes
imaging reports
Lifetime Health Monitoring Program Questionnaires (LHMP)
Imaging tab in Epic
laboratory reports
Medic 911 care report
mental health visit notes
MD or provider visit notes
MRI reports
nephrology visit notes
neurology visit notes
nursing visit notes
OB/GYN visit notes
occupational therapy visit notes
office visit notes
oncology visit notes
operative reports (aka surgical reports)
optometry visit notes
ophthalmology visit notes
orthopedic visit notes
outside GHC medical records
outside GHC hospital discharge reports
pathology report
PET scan reports
physical exam (PE) forms
pharmacy communications
physical therapy visit notes
preoperative exam notes
problem sheet
Procedures tab in Epic
progress notes
radiology reports
rheumatology visit notes
skilled nursing facility communications
social work notes
specialty care visit notes
speech, language, and learning (SLL) cognitive evaluation
surgical consult visit notes
telephone encounters
urgent care reports
visiting nurse report
x-ray reports

D.4 General Physical Activities Defined by Level of Intensity

Abstraction of this variable was discontinued as of 1/1/2024.

D.5 Activities of Daily Living Scales

D.5.1 Katz Basic Activities of Daily Living (ADL) Scale

Abstraction of this variable was discontinued as of 1/1/2024.

D.5.2 Basic ADLs

Abstraction of this variable was discontinued as of 1/1/2024.

D.6 Medications

D.6.1 Medications of Interest (pre-1977)

Effective 1/1/2024: Only abstract years in which the participant was aged 40+. If they were born after 1937, do not abstract pre-1977 meds because all years would be before age 40. If they were born prior to 1937, abstract the years from age 40 until 1977.

Pre-1977: Record of medications from the following categories:

- antidepressant
- antihypertensive
- antipsychotic
- diabetic medication including insulin
- hormone
- sedative
- thyroid
- antimalarials

The list also includes a few specific medications of interest that do not fall in above categories but were chosen by the investigators.

The file containing the pre-1977 medications of interest is located here:

G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Medications Work Area\Pre-1977 Medication Module\Pre1977DrugsForAmanda_20111020.xls

DrugID	GenericName	BrandName1	BrandName2	BrandName3
51	ACETAMINOPHEN, CODEINE	ACETAMINOPHEN W/COD TABS #300/30	TYLENOL #3, SEE #05788	
60	ACETAZOLAMIDE	ACETAZOLAMIDE	DIAMOX SEQUELS	ACETAZOLAMIDE , DIAMOX
72	ACETOHEXAMIDE	DYMELOR		
81	ADAPIN			
105	ALDACTONE			
149	AMFEPRAMINE			
158	AMITRIL			
159	AMITRIPTYLINE			
217	APC WITH CODEINE BROWN TABLET	P A C COMPOUND/CODEINE SULFATE 1/4 GR	P A C COMPOUND/CODEINE SULFATE 1/2 GR	
218	APC,OXYCOD HCL 4.5MG,OXYCOD TER .38MG	PERCODAN		
219	APONAL			
226	APRESOLINE			
230	ASA 325MG,OXYCOD HCL 4.5MG,OXYCOD T.38MG	PERCODAN		
234	ASPIRIN 325MG CODEINE PHOSPATE 15MG	ASPIRIN-CODEINE 15 MG- DC'D BY ALL MFR.		
235	ASPIRIN 325MG,PROPOXYPHENE NAPSYL 100MG	DARVON-N WITH A.S.A. (DC'D BY MFR)		
244	ATARAX			
248	ATROMID-S			
256	AYGESTIN			
267	B&O SUPP			
323	BELLA-PHENOB			
324	BELLADONNA			
325	BELLADONNA EXT 10.8MG-PHENOBARB 16.2MG	BELAP - LACK OF USE		
326	BELLADONNA EXT 8MG-PHENOBARBITAL 15MG	PHENOBARBITAL AND BELLADONNA NO 2		
328	BELLADONNA EXTRACT (LEAVES)	BELLADONNA XTR LEAVES(DEL BY MFG)		
329	BELLADONNA EXTRACT, OPIUM	B & O SUPPRETTES 15A	B & O SUPPRETTES 16A	B&O-NO.15-A, SEE #06004
336	BENADRYL			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
353	BENZTROPINE MESYLATE	BENZTROPINE MESYLATE	BENZTROPINE MESYLATE,COGENTIN MESYLATE	BENZTROPINE MESYLATE, COGENTIN
434	BUTABARBITAL			
435	BUTAL-ASA-CAF			
436	BUTALBITAL 50MG-ASA 325MG-CAFFEINE 40MG	BUTALBITAL CPD,FIORINAL,BUTALBITAL W/AC		
438	BUTALBITAL,ACETAMINOPHEN,CAFFEINE,CODEIN	FIORICET WITH CODEINE		
441	BUTALE			
442	BUTISOL SODIUM			
494	CARBAMAZEPINE	CARBAMAZEPINE	TEGRETOL	TEGRETOL CHEWABLE TABLETS
495	CARBAMAZEPINE EXTENDED RELEASE	TEGRETOL-XR	CARBATROL ER	
498	CARBATROL			
500	CARBIDOPA	LODOSYN		
505	CARBRITAL			
506	CARDIZEM CD			
507	CARDIZEM LA			
508	CARISOPRODOL	CARISOPRODOL	SOMA, CARISOPRODOL	
513	CARTIA XT			
518	CATAPRESS			
567	CHLORAL HYDRATE	NOCTEC, DC'D BY MFR 5/92 USE #02340	NOCTEC- USE LIQ #02340	NOCTEC,CHLORAL HYDRATE
568	CHLORAL HYDRO			
571	CHLORDIAZEPOX			
572	CHLORDIAZEPOXIDE 5MG,CLIDINIUM 2.5MG	LIBRAX, SEE #05705		
574	CHLORDIAZEPOXIDE HYDROCHLORIDE	CDP CAP , CHLORDIAZEPOXIDE,LIBRIUM	CHLORDIAZEPOXIDE HCL , LIBRIUM	CHLORDIAZEPOXIDE, LIBRIUM
583	CHLOROTHIAZIDE	DIURIL		
589	CHLORPROMAZINE, HYDROCHLORIDE	THORAZINE, CHLORPROMAZINE		
590	CHLORPROPAM			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
591	CHLORPROPAMIDE	CHLORPROPAMIDE,DIABINESE, GLUCAMIDE	DIABINESE, CHLORPROPAMIDE	
592	CHLORTHALIDONE	CHLORTHALIDONE,HYGROTON	HYGROTON	
594	CHLORTHALIDONE/RESERPINE			
644	CLOFIBRATE	ATROMID-S		
646	CLONAZEPAM	CLONAZEPAM	CLONOPIN (OLD NAME),KLONOPIN (NEW NAME)	KLONOPIN (NEW NAME) CLONOPIN (OLD NAME)
647	CLONAZEPAM RAPID ORAL DISINTEGRATING	CLONAZEPAM ODT		
648	CLONIDINE	CATAPRES-TTS 1	CATAPRES TTS 2 (0.2MG/24HR) TRANSDERMAL	CATAPRES TTS 1 (0.1MG/24HR) TRANSDERMAL
649	CLONIDINE HCL	CLONIDINE HCL	CLONIDINE HCL , CATAPRES	CLONIDINE,CATAPRES
650	CLONOPIN			
676	CODEINE, ACETAMINOPHEN	TYLENOL #3 ,ACETAMINOPHEN-CODEINE 30MG	ACETAMINOPHEN 300MG CODEINE 60MG	ACETAMINOPHEN-CODEINE 30 MG
699	COMPAZINE			
711	CONJ EST MT O			
712	CONJ ESTR MT			
714	CONJ ESTROGEN			
715	CONJUGATED ESTROGEN	PREMARIN	PREMARIN VAGINAL CREAM	
716	CONJUGATED ESTROGEN IN LR	CONJUGATE ESTROGEN 25MG IN LR.-NOUSAGE		
719	CONJUGATED ESTROGENS, METHYLTESTOSTERONE	PREMARIN W/ METHYLTEST 5MG- DC'D BY MFR	PREMARIN WITH METHYLTEST 10MG-DC MFR	
723	CONTRACEPT F			
735	COUMADIN O			
744	CTM 8MG-PHENYLPROP 50MG-ISOPROP 2.5MG	ORNADE, ALLERNADE		
749	CYCLIZINE HYDROCHLORIDE	MAREZINE		
751	CYCLOBENZAPRENE HCL	FLEXERIL		
752	CYCLOBENZAPRINE HCL	CYCLOBENZAPRINE HCL	CYCLOBENZAPRINE, FLEXERIL	
761	CYCRIN			
763	CYTOMEL			
764	D-AMPHETAMINE			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
769	DALMADORM			
770	DALMANE			
775	DANTROLENE			
776	DANTROLENE SODIUM	DANTRIUM		
781	DAS 15MG AND PROCHLORPERAZINE MAL. 7.5MG	ESKATROL		
789	DEMORAL			
791	DEPHENYLHYDANTOIN			
793	DESERPIDINE	HARMONYL		
794	DESIPRAMINE			
795	DESIPRAMINE HCL	DESIPRAMINE, NORPRAMIN	NORPRAMIN, DESIPRAMINE	
799	DEXAMETHASONE	DEXAMETHASONE	DEXAMETHASONE INTENSOL	HEXADROL
804	DEXEDRINE			
809	DEXTROAMPHETAMINE SULFATE	DEXEDRINE	DEXEDRINE SPANSULE	
820	DIABENESE			
824	DIAMOX			
831	DIAZEPAM	DIAZEPAM	VALIUM	DIAZEPAM,VALIUM
835	DICHLORPHENAMIDE	DARANIDE		
844	DICYCLOMINE HYDROCHLORIDE	DICYCLOMINE HCL USP,BENTOMINE,BENTYL	DICYCLOMINE HCL	DICYCLOMINE SYRUP, BENTYL
848	DIETHYLPROPION HYDROCHLORIDE	DIETHYLPROPION , TENUATE		
849	DIETHYLSTILBESTROL	DIETHYLSTILBESTROL ENSEALS	DIETHYLSTILBESTROL ENSEALS - D/C BY MFG	DIETHYLSTILBESTROL
850	DIETHYLSTILBESTROL NON-ENTERIC	DIETHYLSTILBESTROL- DC'D. SOLE SOURCE		
853	DIGITALIS	DIGITALIS PULVULES		
854	DIGITEK			
855	DIGITOXIN	CRYSTODIGIN,PURODIGIN DC'D MFR 12/90		
856	DIGOXIN	DIGITEK	DIGOXIN	LANOXIN
859	DILACOR XR			
860	DILANTIN			
862	DILTIA XT			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
865	DILTIAZEM HCL EXTENDED RELEASE	TIAZAC		
866	DILTIAZEM HCL SUSTAINED RELEASE	CARDIZEM SR	CARDIZEM CD, 24 HR	DILACOR XR, SEE #05988
872	DIPHENHYDRAMINE	BANOPHEN, DIPHENHYDRAMINE CAPSULES		
874	DIPHENHYDRAMINE EXP-PSEUDOEPHEDRINE	DIPHEN EXP-PSEUD,DELETED 11/11/81 P&T		
875	DIPHENHYDRAMINE HCL	DIPHENHYDRAMINE HCL	DIPHENHYDRAMINE,BENADRYL	DIPHENHYDRAMINE, BENADRYL
894	DISOPYRAMIDE			
895	DISOPYRAMIDE PHOSPHATE	NORPACE	NORPACE CR	NORPACE CR -BRAND SPECIFIC
922	DOXEPIN	ZONALON		
923	DOXEPIN HCL	DOXEPIN HCL		
924	DOXEPIN HYDROCHLORIDE	SINEQUAN,ADAPIN,DOXEPIN	ADAPIN,SINEQUAN,DOXEPIN	SINEQUAN, ADAPIN, DOXEPIN
929	DPH			
964	DROPERIDOL	INAPSINE		
971	DYMELOR			
972	DYRENIUM			
988	ELATROL			
989	ELAVIL			
993	ENDEP			
1004	EPHEDRINE SULFATE 25MG-AMOBARBITAL 50MG	EPHEDRINE-AMYTAL,DELETED 11/11/81 P&T		
1011	EQUETRO			
1017	ERGOTAMINE L-ALKALOID OF BELLADONNA-PB	BELLERGAL - D/C MFG		
1021	ERGOTAMINE, BELLADONNA, PHENOBARBITAL	BELLERGAL-S,PB/ERGO/BELL		
1039	ESIDRIX			
1040	ESKATROL			
1044	ESTERIFIED ESTROGEN	MENEST		

DrugID	GenericName	BrandName1	BrandName2	BrandName3
1045	ESTERIFIED ESTROGENS	ESTRATAB	ESTRATAB- DISC'D BY MFR 9/95	ESTRATAB, ESTERIFIED ESTROGEN
1046	ESTERIFIED ESTROGENS, METHYLTESTOSTERONE	ESTRATEST 1.25MG-2.5MG	ESTRATEST H.S. 0.625MG-1.25MG	SYNTEST HS 0.625MG-1.25MG
1047	ESTINYL			
1048	ESTRADIOL	ESTRADIOL	ESTRACE	ESTRADIOL, ESTRACE
1053	ESTRAGUARD			
1056	ESTRIOL 2MG/GM,ESTRADIOL .5MG/GM,PROGEST	BI-ESTROGEN + PROGESTERONE 150MG/GM CR		
1057	ESTROGENS, ESTERIFIED	EVEX		
1058	ESTROGENS,CONJUGATED	PREMARIN		
1059	ESTROGENS,ESTERIFIED	ESTRATAB		
1060	ESTROPIPATE	ESTROPIPATE	OGEN (PIPERAZINE ESTRONE SULFATE)	
1065	ETHCHLORVYNOL	PLACIDYL - DELETED BY 1-12-83 P/T	PLACIDYL-DELETED 1/83 P/T NO EMBOSSING	PLACIDYL - DELETED BY 3-9-83 P/T
1067	ETHINYL ESTRA .05MG NORETHINDRONE 2.5MG	NORLESTRIN FE2.5/50 - DISC BY MFG		
1068	ETHINYL ESTRADIOL	ESTINYL- DISC'D BY MFR 12/97	ESTINYL	
1069	ETHINYL ESTRADIOL, LEVONORGESTREL	TRI-LEVLEN 28 DAY PKG		
1070	ETHINYL ESTRADIOL, NORETHINDRONE	LOESTRIN FE 1/20 (EE 0.02MG, NE 1MG)	LOESTRIN FE 1.5/30 (EE 0.03MG, NE 1.5MG)	BREVICON 28 DAY, DC'D BY MFR
1071	ETHINYL ESTRADIOL, NORGESTREL	OVRAL 21		
1072	ETHINYL ESTRO			
1076	ETHYNODIOL IMG MESTRANOL 0.1MG	OVULEN (DC'D BY MFGR)		
1077	ETHYNODIOL, ETHINYL ESTRADIOL	DEMULEN 1/50-28		
1082	EVEX			
1126	FIORINAL			
1157	FLUOXYMESTERONE	HALOTESTIN		
1158	FLUPHENAZINE			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
1159	FLUPHENAZINE DECANOATE	FLUPHENAZINE,DECONATE,PROLIXIN DECONATE		
1160	FLUPHENAZINE HYDROCHLORIDE	FLUPHENAZINE HCL., PROLIXIN		
1164	FLURAZEPAM HYDROCHLORIDE	DALMANE- DELETE PER P&T 7/97,USE#04945	DALMANE- DELETE PER P&T 7/97,USE #04946	DALMANE, FLURAZEPAM
1190	FUROSEMIDE	FUROSEMIDE	FUROSEMIDE,LASIX	FUROSEMIDE TABS# 20MG
1227	GLUCAMIDE			
1264	GUANETHIDINE SULFATE	ISMELIN		
1273	HALDOL			
1275	HALOPERIDOL	HALOPERIDOL	HALDOL,HALOPERIDOL	HALDOL
1280	HARMONYL			
1285	HCHLOROTHIAZIDE 25MG-TRIAMTERENE 50MG	DYAZIDE- DC'D BY MFR		
1287	HCT-TRIAM DY			
1331	HYDRALAZINE HYDROCHLORIDE	APRESOLINE, HYDRALAZINE	APRESOLINE,HYDRALAZINE HCL	APRESOLINE, HYDRALAZINE HCL
1335	HYDROCHLOROTHIAZIDE	HYDROCHLOROTHIAZIDE	ESIDRIX,HCHLOROTHIAZIDE	ESIDRIX
1337	HYDROCHLOROTHIAZIDE, SPIRONOLACTONE	ALDACTAZIDE,SPIROZIDE	SPIRONOLACTONE/HCTZ, ALDACTAZIDE	
1338	HYDROCHLOROTHIAZIDE, TRIAMTERENE	MAXZIDE 25/37	MAXZIDE- BRAND SPECIFIC	HCT/TRIAMTERENE -MYLAN BRAND ONLY
1339	HYDROCHLOROTHIAZINE, TRIAMTERENE	MAXZIDE (BIOEQUIVALENT TO 2 DYAZIDE)		
1341	HYDROCODONE BIT/HOMATROPINE	HYDROCODONE BT-HOMATROPINE MBR	HYDROCODONE-HOMATROPINE	HYDROCODONE/HOMATROPINE
1370	HYDRODIURIL			
1391	HYDROXYZINE HCL	HYDROXYZINE HCL	HYDROXYZINE HCL,ATARAX	VISTARIL,HYDROXYZINE HCL
1392	HYDROXYZINE PAMOATE	HYDROXYZINE PAMOATE	HYDROXYZINE PAMOATE,VISTARIL	VISTARIL- BRAND SPECIFIC
1393	HYGROTON			
1409	IMIPRAMINE *LA			
1410	IMIPRAMINE HCL	IMIPRAMINE HCL	IMIPRIMINE HCL., TOFRANIL, JANIMINE	IMIPRIMINE HCL., JANIMINE , TOFRANIL
1411	IMIPRAMINE PAMOATE	TOFRANIL PM - DELETED BY 3-9-83 P/T	TOFRANIL PM - DELETED BY 3-9-83 P/T	

DrugID	GenericName	BrandName1	BrandName2	BrandName3
1418	INDEROL			
1444	INSULIN ASPART	NOVOLOG		
1447	INSULIN L PK			
1448	INSULIN LENTE			
1450	INSULIN N PP			
1451	INSULIN NPH			
1454	INSULIN R PP			
1455	INSULIN REGULAR			
1456	INSULIN REGULAR, HUMAN	NOVOLIN R	HUMULIN R	
1471	INSULIN, LENTE BEEF & PORK	ILETIN LENTE		
1472	INSULIN, LENTE HUMAN	NOVOLIN L(MONOTARD HUMAN,OLD NAME)	HUMULIN L	
1473	INSULIN, LENTE PURIFIED PORK	LENTE PURIFIED PORK, MONOTARD		
1474	INSULIN, NPH BEEF & PORK	ILETIN NPH		
1475	INSULIN, NPH HUMAN	NOVOLIN N	NOVOLIN N PENFILL	NOVOLIN N PENFILL 3 ML CARTRIDGE
1476	INSULIN, NPH PURIFIED BEEF	ILETIN II NPH BEEF-DISC'D BY MFR 9/93		
1477	INSULIN, NPH PURIFIED PORK	ILETIN II NPH PP	INSULATARD,INSULIN P/PK NPH	
1478	INSULIN, NPH, REGULAR HUMAN	NOVOLIN 70/30 PENFILL CARTRIDGE	HUMULIN 70/30	HUMULIN 50/50
1479	INSULIN, REGULAR BEEF & PORK	ILETIN REGULAR		
1480	INSULIN, REGULAR BEEF AND PORK	ILETIN REGULAR		
1481	INSULIN, REGULAR BUFFERED HUMAN	HUMULIN BR-DISC BY MFR:SOLE SOURCE 9/93		
1482	INSULIN, REGULAR HUMAN	NOVOLIN R PENFILL	NOVOLIN R (ACTRAPID HUMAN,OLD NAME)	NOVOLIN R PENFILL 3 ML CARTRIDGE
1483	INSULIN, REGULAR PURIFIED PORK	ILETIN II REGULAR PP,SEE OP NOTE 11-30-2	VELOSULIN,INSULIN P/PK REG	
1508	ISMELIN			
1509	ISOCARBOXAZID	MARPLAN BRAND ONLY		
1522	ISORDIL			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
1523	ISOSORBIDE			
1524	ISOSORBIDE DINITRATE	ISOSORBIDE DINITRATE	ISOSORBIDE DINITRATE,ISORDIL ORAL	SORBITRATE ORAL, ISOSORBIDE DINITRATE
1526	ISOSORBIDE SUBL			
1531	ISOXSUPRINE HYDROCHLORIDE	VASODILAN - DELETED BY 5/11/83 PT		
1546	KLONOPIN			
1569	LANOXIN			
1572	LAROXYL			
1573	LASIX			
1583	LDOPA			
1603	LEVODOPA	LARODOPA		
1604	LEVODOPA, CARBIDOPA	SINEMET CR		
1605	LEVODOPA, CARBIDOPA	SINEMET	SINEMET CR	CARBIDOPA/LEVODOPA TABS #25/100
1607	LEVORPHANOL TARTRATE	LEVORPHANOL TARTRATE	LEVO-DROMORAN	
1608	LEVOTHYROID			
1609	LEVOTHYROXINE	LEVOXYL, SYNTHROID, LEVOTHROID	SYNTHROID (BRAND SPECIFIC)	LEVOTHROID
1610	LEVOTHYROXINE SODIUM	LEVOTHYROXINE SODIUM	LEVOXYL	SYNTHROID
1611	LEVOXYL			
1612	LIBRAX			
1613	LIBRIUM			
1624	LIOTHYRONINE SODIUM	CYTOMEL		
1636	LITHIUM CAR-CAP			
1637	LITHIUM CARBONATE	LITHIUM CARBONATE	LITHOTABS	LITHOBID- DISC'D BY MFR. USE #02333
1638	LITHIUM CITRATE	LITHIUM CITRATE SYRUP		
1639	LITHONATE			
1642	LOESTRIN FE			
1646	LORAZEPAM	LORAZEPAM	LORAZEPAM INTENSOL	ATIVAN
1677	MANNITOL	MANNITOL		
1679	MARPLAN			
1701	MEDROXYPROGESTERONE ACETATE	CYCRIN, PROVERA	PROVERA	PROVERA-BRAND SPECIFIC
1702	MEDROXYPROGESTONE			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
1707	MELLARIL			
1721	MEPERIDINE HYDROCHLORIDE	MEPERIDINE HYDROCHLORIDE	DEMEROL, MEPERIDINE	DEMEROL- LACK OF USE
1722	MEPROBAMATE	MEPROBAMATE		
1731	MESORIDAZINE BESYLATE	SERENTIL		
1732	MESTRANOL .075MG NORETHYNODREL 5MG	ENOVID-5MG		
1733	MESTRANOL 0.1MG NORETHINDRONE 2MG	NORINYL 2MG,ORTHO-NOVUM 2MG (DC'D MFGR)		
1734	MESTRANOL, NORETHINDRONE	NORINYL 1+50 28 DAY (MESTR 0.05MG,NE 1MG		
1735	MESTRANOL, NORETHYODREL	ENOVID 5MG, MEST 0.075MG,NORETHYDREL 5MG		
1745	METHADONE HCL	METHADONE HCL	METHADONE INTENSOL	
1746	METHADONE HYDROCHLORIDE	DOLOPHINE,METHADONE	METHADONE,DOLOPHINE	DOLOPHINE- COMPOUNDING ONLY
1747	METHANDROSTENOLONE	DIANABOL		
1749	METHAZOLAMIDE	NEPTAZANE		
1753	METHIMAZOLE	TAPAZOLE		
1754	METHOCARBAMOL	METHOCARBAMOL	METHOCARBAMOL, ROBAXIN	METHOCARBAMOL 100MG/ML
1766	METHYLDOPA	ALDOMET,METHYLDOPA	METHYLDOPA, ALDOMET	METHYLDOPA,ALDOMET
1768	METHYLPHENIDATE			
1771	METHYLPHENIDATE HYDROCHLORIDE	METHYLPHENIDATE,RITALIN	RITALIN SR,METHYLPHENIDATE SR	
1772	METHYLPREDNISOLONE	METHYLPREDNISOLONE	METYLPREDNISOLONE DOSE PACK 4MG 21 TABS	MEDROL
1773	METHYLPREDNISOLONE ACETATE	METHYLPREDNISOLONE ACETATE SUSP. W/PRES	METHYLPREDNISOLONE ACETATE,DEPO-MEDROL	DEPO-MEDROL,METHYLPRED ACET.SUSP W/PRES
1774	METHYLPREDNISOLONE SODIUM SUCCINATE	A-METHAPRED UNIVIAL,SOLU-MEDROL	A-METHAPRED UNIVIAL,SOLUMEDROL	
1775	METHYLTES SL			
1776	METHYLTESTOS			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
1777	METHYLTESTOSTERONE	ORETON METHYL, METHYLTESTOSTERONE BUCCAL	TESTRED, METHYLTESTOSTERONE	METHYLTESTOSTERONE, METHITEST
1778	METHYLTESTOSTERONE-USE #16800	METHYLTESTOSTERONE-DC BY MFG,SOLE SOURCE		
1779	METHYSERGIDE MALEATE	SANSERT		
1785	METOPROLOL	METOPROLOL 6.25MG CAPSULES		
1789	METOPROLOL TARTRATE	METOPROLOL TARTRATE	LOPRESSOR	LOPRESSOR- BRAND SPECIFIC
1802	MILK BISMUTH-PAREGORIC	BISGORIC(MILK BISMUTH DISC BY MFG)		
1805	MILPREM (CONJ ESTROGEN AND MEPROBAMATE)			
1814	MINIPRESS			
1840	MORPHINE SULFATE	KADIAN	MORPHINE SULFATE	ORAMORPH SR
1879	NAVANE			
1976	NEMBUTAL SODIUM			
1995	NIACIN	ENDUR-ACIN 500 SR, SEE #07889	NIACIN SR (GG BRAND ONLY)	ENDUR-ACIN 250 SR, SEE #07891
1996	NIACIN EXTENDED RELEASE	NIASPAN		
1997	NIACINAMIDE	NIACINAMIDE- UNAVAILABLE 8/94 FROM MFRS.	NIACINAMIDE	
1998	NIACOR			
1999	NIASPAN			
2006	NICOTINIC ACID			
2014	NITROBID			
2021	NITROGLYCERIN	NITROGLYCERIN	NITROQUICK	NITROLINGUAL
2022	NITROGLYCERIN TRANSDERMAL	NITRO-DUR 0.1MG/HR	NITRODUR-0.6 MG/HR 30SQ CM.	NITRODUR - 0.8MG/HR 40 CM2
2023	NITROGLYCERIN TRANSDERMAL .	MINITRAN (BRAND SPECIFIC)		
2024	NITROGLYCERIN TRANSLINGUAL	NITROLINGUAL METERED DOSE SPRAY	NITROLINGUAL PUMPSPRAY, 200 DOSES	
2025	NITROSTAT			
2031	NOR-MES1/.08			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
2032	NORETHINDRONE	MICRONOR- BRAND SPECIFIC	NOR-Q.D.	
2033	NORETHINDRONE 1MG MESTRANOL 0.08MG	MORINYL1+80,ON1/80 (DISC MFG-USE UP STK)		
2034	NORETHINDRONE A-E ESTRADIOL/FERROUS FUMARATE	MICROGESTIN FE		
2035	NORETHINDRONE ACETATE	NORLUTATE, AYGESTIN		
2038	NORINYL			
2039	NORLEST 1 FE			
2040	NORLESTRIN			
2041	NORLUTATE			
2043	NORPACE			
2044	NORPRAMINE			
2045	NORTRIPTYLINE HCL	NORTRIPTYLINE HCL	PAMELOR	NORTRIPTYLINE
2046	NPH, HUMAN INSULIN ISOPHANE	NOVOLIN N	NOVOLIN N INNOLET	HUMULIN N
2047	NPH, HUMAN INSULIN ISOPHANE/INSULIN REGULAR, HUMAN	NOVOLIN 70-30	HUMULIN 70-30	
2048	NTG *LA*			
2086	OPIUM	OPIUM		
2087	OPIUM TINCTURE	OPIUM TINC. DEODORIZED 100MG/ML		
2093	ORPHENADRINE CITRATE	ORPHENADRINE CITRATE,ORFLAGEN,NORFLEX		
2148	OVRAL			
2149	OVRAL PACK			
2150	OVULEN			
2153	OXAZEPAM	OXAZEPAM,SERAX	SERAX,OXAZEPAM	OXAZEPAM- PUREPAC BRAND ONLY
2162	OXYCODONE HCL, ACETAMINOPHEN	ROXICET ORAL SOLUTION 65-1MG/ML	ENDOCET BRAND SPECIFIC	ROXICET, PERCOCET, ENDOCET
2163	OXYCODONE HCL/ACETAMINOPHEN	OXYCODONE-ACETAMINOPHEN	ENDOCET	OXYCODONE W/ACETAMINOPHEN
2185	PAPAVERINE HYDROCHLORIDE	PAPAVERINE HCL-DISC BY MFR. USE #01937	PAPAVERINE HYDROCHLORIDE	GENABID TD,PARAVERINE
2188	PAREGORIC	PAREGORIC		

DrugID	GenericName	BrandName1	BrandName2	BrandName3
2190	PARNATE			
2217	PENTAZOCINE HYDROCHLORIDE	TALWIN - SEE #41230 PENTAZOCINE-N	TALWIN - SEE #41770 U PENTAZOCINE-N	
2218	PENTAZOCINE LACTATE	TALWIN - DELETED BY 7-90 P&T		
2221	PENTOBARBITA			
2222	PENTOBARBITAL 100MG- CARBROMAL 260MG	CARBRITAL		
2228	PERPHEN/AMITRIP			
2229	PERPHENAZINE	TRILAFON	PERPHENAZINE- GENEVA BRAND ONLY	PERPHENAZINE,TRILAFON
2230	PERPHENAZINE, AMITRIPTYLINE	ETRAFON 2-10	ETRAFON 2-25	ETRAFON FORTE 4/25
2253	PHENELZINE SULFATE	NARDIL		
2254	PHENERGAN			
2256	PHENMETRAZINE HYDROCHLORIDE	PRELUDIN		
2257	PHENOBARBITAL	PHENOBARBITAL		
2258	PHENOBARBITAL 16.2MG-ASPIRIN 325MG	ASPIRIN WITH PHENOBARBITAL- (PHASA)		
2259	PHENOBARBITAL SODIUM	PHENOBARBITAL SODIUM TUBEX	SODIUM PHENOBARBITAL,LUMINAL	LUMINAL, PHENOBARBITAL
2276	PHENYTEK			
2277	PHENYTOIN	PHENYTOIN	DILANTIN	DILANTIN ORAL SUSPENSION 125MG/5ML
2278	PHENYTOIN SODIUM			
2279	PHENYTOIN SODIUM EXTENDED	PHENYTOIN SODIUM EXTENDED	DILANTIN	PHENYTOIN GENERIC
2280	PHENYTOIN-PHENOBARBITAL	DILANTIN W 1/2 GR PHENOBARBITAL		
2302	PLACIDYL			
2370	PRAZOSIN HCL	PRAZOSIN HCL	MINIPRESS	MINIPRESS , PRAZOSIN
2372	PREDNISOLONE	PREDNISOLONE	DELTA- CORTEF,PRELONE	PREDNISOLONE - SEE #01347
2380	PREDNISONE	PREDNISONE	DELTASONE	PREDNISONE , ORASONE
2382	PREMARIN			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
2388	PRIMIDONE	MYSOLINE	PRIMIDONE, MYSOLINE	
2394	PROCAINAMIDE HYDROCHLORIDE	PRONESTYL	PRONESTYL, PROCAINAMIDE HCL	PROCAN SR
2396	PROCHLORPERAZINE	COMPAZINE- TEMP. DC'D BY SKB.NO REL.DATE	COMPAZINE	
2397	PROCHLORPERAZINE EDISYLATE	COMPAZINE - SEE NEW LISTING #41270	PROCHLORPERAZINE, COMPAZINE	PROCHLORPERAZINE
2398	PROCHLORPERAZINE MALEATE	PROCHLORPERAZINE MALEATE	COMPRO	PROCHLORPERAZINE MALEATE-5,COMPAZINE
2400	PROGESTERONE	PROGESTERONE IN GELATIN CAPS, SEE #05538	PROMETRIUM	
2403	PROLIXIN			
2404	PROLOID			
2406	PROMETHAZINE HCL	PROMETHAZINE HCL	PROMETHEGAN	PHENADOZ
2407	PROMETHAZINE HYDROCHLORIDE	PHENERGAN , PROMETHAZINE	PROMETHAZINE HCL	PHENERGAN,PROMETHAZINE HCL
2408	PRONESTYL			
2411	PROPANTHELINE BR 15MG,PHENOBARBITAL 15MG	PRO-BANTHINE WITH PHENOBARBITAL		
2416	PROPOXYPHENE HYDROCHLORIDE	DARVON-D/C BY MFG 1-90		
2419	PROPOXYPHENE NAPSYLATE	DARVON-N: NON-FORMULARY BY P&T#05307	DARVON-N	
2420	PROPOXYPHENE NAPSYLATE, ACETAMINOPHEN	DARVOCET N-50: DC'D BY DPSC. USE #00473	DARVOCET N 100	DARVOCET N 50- DC'D BY DPSC. USE#04499
2422	PROPRANOLOL HCL	PROPRANOLOL HCL	PROPRANOLOL HCL, INDERAL	PROPRANOLOL HCL., INDERAL
2423	PROPRANOLOL HCL SUSTAINED RELEASE	INDERAL LA	PROPRANOLOL LA	
2428	PROPYLTHIOURACIL	PROPYLTHIOURACIL		
2433	PROTRIPTYLINE HCL	VIVACTIL		
2434	PROVERA			
2463	QUINESTROL	ESTROVIS- DC'D BY MFR		
2478	REGROTON			
2480	RESERPINE	SERPASIL, RESERPINE		
2497	RITALIN			

DrugID	GenericName	BrandName1	BrandName2	BrandName3
2509	RYTHMODAN			
2532	SANSERT			
2547	SECOBARBITAL			
2548	SECONAL SODIUM			
2558	SERPASIL			
2578	SINEMET			
2579	SINEQUAN			
2598	SLOW NIACIN			
2620	SODIUM LIOTHYRONINE	CYTOMEL		
2621	SODIUM PENTOBARBITAL	NEMBUTAL SODIUM, PENTOBARBITAL SODIUM	NEMBUTAL SODIUM	PENTOBARBITAL SODIUM
2625	SODIUM SECOBARBITAL	SECONAL SODIUM-DISC'D BY MFR. 8/93	SECONAL SODIUM	
2634	SORBITRATE			
2639	SPIRONOLACTONE	SPIRONOLACTONE	SPIRONOLACTONE,ALDACTONE	ALDACTONE,SPIRONOLACTONE
2653	STELAZINE			
2705	SYNTHROID			
2747	TEGRATOL			
2748	TEGRATOL XR			
2753	TENAPIL			
2758	TENUATE			
2759	TENUATE DOSPAN			
2772	TESTOSTERONE CYPIONATE	TESTOSTERONE CYPIONATE	DEPO-TESTOSTERONE	TESTOSTERONE CYPIONATE,DEPO-TESTOSTERONE
2778	TESTOSTERONE TRANSDERMAL SYSTEM	ANDRODERM PATCH		
2810	THIORIDAZINE	MELLARIL	MELLARIL,THIORIDAZINE	
2812	THIOTHIXENE	NAVANE,THIOTHIXENE		
2813	THORAZINE			
2820	THYROGLOBULIN	PROLOID	PROLOID-DISC BY MANUFAC/SOLE SOURCE	PROLOID- DISC'D BY MFR.
2821	THYROID			
2822	THYROID DESICCATED	ARMOUR THYROID		
2824	THYROID,PORK	ARMOUR THYROID		

DrugID	GenericName	BrandName1	BrandName2	BrandName3
2825	TIAZAC			
2845	TOFRANIL			
2846	TOLAZAMIDE	TOLINASE,RONASE,TOLAZAMIDE	TOLINASE, TOLAZAMIDE	
2847	TOLBUTAMIDE	ORINASE,TOLBUTAMIDE		
2858	TRANYLCYPROMINE SULFATE	PARNATE		
2865	TREPILINE			
2878	TRIAMTERENE	DYRENIUM	DYRENIUM-DISC BY MFG	
2879	TRIAMTERENE/HYDROCHLOROTHIAZIDE	TRIAMTERENE W/HCTZ	TRIAMTERENE-HCTZ	
2884	TRIETHYLPERAZINE MALEATE	TORECAN- DC'D BY MFRS.		
2885	TRIFLUOPERAZINE			
2886	TRIFLUOPERAZINE HYDROCHLORIDE	STELAZINE,TRIFLUOPERAZINE		
2888	TRIHEXYPHENIDYL HCL	TRIHEXANE,TRIHEXIPHENIDYL,TREMIN,ARTANE		
2895	TRIPELENNAMINE CITRATE	PBZ ELIXIR- DISC. BY MFR.		
2896	TRIPELENNAMINE HYDROCHLORIDE	PYRIBENZAMINE, TRIPELENAMINE,DC'D BY MFR		
2908	TRYPTUZOL			
2956	VALIUM			
2958	VALPROIC ACID	DEPAKENE	DEPAKENE SYRUP	
2983	VISTARIL			
2994	VITAMIN B3			
3002	VIVACTIL			
3006	WARFARIN SODIUM	WARFARIN SODIUM	JANTOVEN	COUMADIN
90005	Darvon	Propoxyphene		
90006	BELPHEN	Belladonna-Phenobarbital		
90007	CODEINE			
90008	AP Codeine			
90009	DARVOCET	Propoxyphene and acetominophen		
90010	USP Thyroid			
90011	cycrimine hydrochloride	Pagitane		
90012	METHAMPHETAMINE AND PHENOBARBITOL	AMBAR		

DrugID	GenericName	BrandName1	BrandName2	BrandName3
90013	Demerol w/ APC	Meperidine with APC		
90016	Amobarbital and Secobarbital	Tuinal		
90020	APC	aspirin - phenacetin-caffeine		
90021	MEPHENESIN	Tolserol		
90022	DAPRISAL	Dexedrine and amylobarbitone		
90023	CHLORPROTHIXENE	TARACTAN		
90024	ZACTIRIN	ethoheptazine citrate with aspirin, phenacetin, and caffeine		
90026	APC with Codeine			
90027	DEMEROL	MEPERIDINE HYDROCHLORIDE		
90029	DYAZIDE	HYDROCHLOROTHIAZIDE, TRIAMTERENE		
90030	BELAP	Belladonna - phenobarbital		
90034	methamphetamine hydrochloride			
90035	Bromocriptine	Deprolac	Cycloset	Parlodel
90036	POLYTHIAZIDE	RENESE	MINIZIDE	
90037	Clonidine Patch			
90040	DIETHYLSTILBESTROL	DES		
90041	HYDROCODONE BIT/HOMATROPINE	HYCODAN	HYDROMET	TUSSIGON
90042	MORPHINE SULFATE	MS CONTIN	ORAMORPH	
90043	PROGESTERONE	PROGESTIN		
90044	CTM 8MG-PHENYLPROP 50MG-ISOPROP 2.5MG	CHLOR-TRIMETON	chlorpheniramine maleate	
90047	ERGOTAMINE L-ALKALOID OF BELLADONNA-PB	BELLAMINE S	SPASTRIN	
90051	TRIPELENNAMINE CITRATE	PBZ		
90052	ORACON	ETHINYL ESTRADIOL 0.1mg DIMETHISTERONE 25 mg		
90053	SALUTENSIN	HYDROFLUMETHIAZIDE		
90054	PREDSEM	PREDNISONE, CALCIUM PANTOTHENATE, ALUMINUM, MAGNESIUM		
90055	Ortho-Novum			
90056	ESTRADIOL VALERATE	DELESTROGEN		

DrugID	GenericName	BrandName1	BrandName2	BrandName3
90057	C-Quens			
90058	Dydrogesterone	Duphaston		
90059	Dexamyl	dextroamphetamine and amobarbital		
90061	Esimil	guanethidine and hydrochlorothiazide		
90063	Methaqualone	Quaalude		
90065	aminophylline, ephedrine, amobarbital	AMESEC		
90066	ephedrine, phenobarbital, theophylline, potassium iodide	QUADRINAL		
90068	Amobarbital	Amytal		
90071	Phendimetrazine	Prelu-2 (DE)	Bontril	Statobex
90072	Depo-Provera	MEDROXYPROGESTERONE ACETATE		
90073	Prednisolone and aspirin	CORDEX - FORTE		
90074	chlorphentermine hydrochloride	Pre-Sate		

D.6.2 Anti-hypertensives

- The file containing the list of medications considered anti-hypertensives for this study is located here: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Medications Work Area\ All Pre 1977 and Post 1976 AHTN drugs generic and brand names 20100831.xls

D.6.3 Steroids (corticosteroids, systemic)

Generic	Trade Name
Betamethasone	Diprolene
Cortisone	Cortone
Dexamethasone	Decadron, Dexone, Hexadrol
Fludrocortisone	Florinef
Hydrocortisone	Cortef
Methylprednisolone	Medrol, Solu-Medrol, Depo-Medrol
Prednisolone	Delta-Cortef, Prelone Syrup, Pediapred, Deltasone, Orasone, Liquid Pred
Prednisone	Intensol, Sterapred, Sterapred DS, Deltacortisone, Deltadehydrocortisone

Categories Combined and Alphabetized

Betamethasone
Cortef
Cortisone
Cortone
Decadron
Delta-Cortef
Deltacortisone
Deltadehydrocortisone
Deltasone
Depo-Medrol
Dexamethasone
Dexone
Diprolene
Florinef
Fludrocortisone
Hexadrol
Hydrocortisone
Intensol
Liquid Pred
Medrol
Methylprednisolone
Orasone
Pediapred
Prelone Syrup
Prednisolone
Prednisone
Solu-Medrol
Sterapred
Sterapred DS

D.6.4 NSAIDS

Generic	Trade Name
Aspirin (ASA)	(ASA) Acetylsalicylic Acid
ASA, APAP, caffeine	Anacin Arthritis Formula (compound of ASA, APAP & caffeine)
BTZ (Phenylbutazone/ Butazolidin)	Butatron
Celecoxib	Celebrex
Choline Magnesium Trisalicylate	Trilisate
Diclofenac	Voltaren, Cataflam, Arthrotec (combined with misoprostol)
Diflunisal	Dolobid
Etodolac	Lodine, Lodine XL
Fenoprofen	Nalfon, Nalfon 200
Flurbiprogen	Ansaid
Ibuprofen	Motrin, Tab-Profen
Indomethacin	Indocin, Indocen SR, Indo-Lemmon, Indomethagan
Ketoprofen	Oruvail
Ketorolac	Toradol
Meclofenamate	Meclomen
Mefenamic Acid	Ponstel
Meloxicam	Mobic
Nabumetone	Relafen
Naproxen	Naprosyn, Anaprox
Oxaprozin	Daypro
Piroxicam	Feldene
Salsalate	Disalcid
Sulindac	Clinoril
Tolmentin	Tolectin

Categories Combined and Alphabetized

Acetylsalicylic Acid
Aaprox
Anacin Arthritis Formula (compound of ASA, APAP & caffeine)
Ansaid
Arthrotec (combined with misoprostol)
Aspirin (ASA)
BTZ (Phenylbutazone/ Butazolidin/Butatron)
Cataflam
Celebrex
Celecoxib
Choline Magnesium Trisalicylate
Clinoril
Daypro

Categories Combined and Alphabetized (cont.)

Diclofenac
Diflunisal
Disalcid
Dolobid
Etodolac
Feldene
Fenoprofen
Flurbiprogen
Ibuprofen
Indomethacin
Indocin
Indocin SR
Indo-Lemmon
Indomethagan
Ketoprofen
Ketorolac
Lodine
Lodine XL
Meclofenamate
Meclomen
Meloxicam
Mobic
Motrin
Ponstel
Nabumetone
Nalfon
Nalfon 200
Naprosyn
Naproxen
Oruvail
Oxaprozin
Piroxicam
Relafen
Salsalate
Sulindac
Tab-Profen
Tolectin
Tolmetin
Toradol
Trilisate
Voltaren

D.7 Abstractor Worksheets

D.7.1 Face Sheet

The file containing the ACT Chart Abstraction Face Sheet is located here:

G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Abstraction Training\Forms\Abstraction FaceSheet 20131112.xls

D.7.2 Pre-1977 Medication Dosage Flow Sheet

This flow sheet is no longer in use.

D.8 Abstractor Training Manual

D.8.1 Roles and Responsibilities

Contact Information

Project PI:	Paul Crane, MD, MPH (pcrane@u.washington.edu)
Project Manager:	Anne Renz, MPH (anne.d.renz@kp.org)
Programmer:	Sundary Sankaran (sundary.sankaran@kp.org)
Chart Abstractors:	Mary Lyons, BFA (mary.k.lyons@kp.org)

Abstractor

Abstractors report to the project manager. Overall responsibilities include abstracting project-specific ACT participants' Group Health / KPWA medical record data and entering that data into the database. Responsibilities include:

- Participate in initial training and abstractor certification
- Direct questions as needed to lead abstractor or project manager
- Abstract all charts accurately and completely using the ACT Chart Review database and Manual of Operations (codebook)
- Participate in inter-rater reliability audits
- Participate in required meetings

D.8.2 Data Quality and Security

Initial Training

Abstractor training will be conducted by the lead abstractor and project manager. The training involves review of the protocol for coding of each data element, overview of the abstraction instrument, and description of data handling. Abstractors will perform medical record reviews during training exercises using the ACT CR database, codebook, and training materials.

Abstractor Certification

During the initial training period, 100% of charts abstracted by the new abstractor will be re-abstracted by the lead chart abstractor or alternate protocol-certified abstractor. The new abstractor is considered certified in the study protocol when 3 of their abstracted charts are consecutively re-abstracted with ≥ 93% agreement between the two abstractors. The two abstractors must achieve ≥ 93% agreement on the presence/absence of medical conditions/procedures, demographics, and dates and numeric values for labs, weights, and blood pressures. The text fields should express similar information but are not required to be identical.

Inter-rater Reliability (IRR)

There are multiple chart abstractors working on this project; therefore, we measure inter-rater reliability (IRR) in order to maintain abstractor agreement. After certification, each abstractor will participate in the IRR protocol. The IRR protocol for this study includes full or partial re-abstraction of 5% of completed abstractions for each protocol certified abstractor. All possible primary and

secondary abstractor pairings are put into a list, randomized (with no more than two IRRs in a row for a single abstractor), and then assigned per IRR by the project manager.

The sample of charts for the 5% audit will be randomly selected by the project manager. Most IRRs were completed as full re-abstractions, but in some cases a data-heavy 10-year period was used instead.

The IRR re-abstractions are compared with the primary abstraction and a file is kept detailing the discrepancies found. The file also details the changes/clarifications made to the codebook and, when appropriate, corrections to the primary abstraction record. The goal of the IRR protocol is to identify individual and team training needs, areas where the codebook requires clarification, and any other obstacles in maintaining a high level of abstractor agreement.

Confidentiality

All information regarding medical records reviewed for ACT CR is strictly confidential. Abstractors are prohibited from discussing chart information for any reason other than to assist the research process. Any breach of confidentiality will be considered grounds for dismissal from the project.

At no time can any personally identifying information, other than dates, be put into the ACT CR database. If you are assigned a chart for a study participant personally known to you, set the chart aside without opening it and contact the project manager with the study ID number. This participant chart will be re-assigned to another abstractor. Do not include any identifying information about a participant in email communication with the team.

Security

It is imperative that medical records (paper and Epic) used in the ACT CR study are secured at all times during the data collection period. Lock your computer before leaving your desk. For short periods of time when you are away from your desk during the day, cover paper charts on your desk.

All charts must be returned to the chart room nightly and stored in the chart room overnight. Before leaving for the day, store all abstractor binders containing subject information in a locked file cabinet. Be sure to cover all identifying information on a chart while transporting it through KPWHRI by placing it in a tote/shopping bag. Discard any paper documents containing subject information in the locked confidential shredding bin.

D.8.3 IRR Instructions

1. The project manager will identify study ID numbers for IRR audits, which occur approximately every 20 charts. At that time you will be assigned a participant study ID number for your next abstraction (one already abstracted by a different abstractor).
2. Complete the assigned IRR abstraction as you normally would. However, this abstraction will be entered into a “dummy record” (the project manger will tell you which to use) instead of the participant’s primary Access database record (one matching the participant’s ID number). The dummy records do not contain pre-populated data so you will need to enter the participant’s date of birth and the date of ACT enrollment into the dummy record. This information is located in the original Access record for the corresponding Study ID.
3. Notify the project manager when you have completed the abstraction. The project manager will run a data export report and compare the two records side-by-side in Excel. Any discrepancies

will be entered into a spreadsheet. The spreadsheet template is located here: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\IRR

The spreadsheet will contain the following information:

a) the title of the variable
b) the year of the discrepancy
c) each abstractor's entry verbatim
d) any notes about this abstraction (not required, but helpful for reference purposes and clarification)

The project manager will notify the two abstractors that the comparison of the two records is complete. The two abstractors will review the discrepancy spreadsheet individually and refer back to the paper chart or Epic if needed to look up any discrepant items to find the correct abstraction. Each abstractor will enter comments in the discrepancy spreadsheet about the discrepant items.

Note: The only dates that are counted for IRR are PT/INR, blood pressure, weight, and lab dates. As long as the rest of the information for a variable that includes dates is correct, do not include month/date level discrepancies for AFIB, ASA discontinuation, TIA, stroke, EF, hysterectomy, confusion during inpatient hospitalization, MMSE, MI, Pacemaker, or Warfarin adverse reaction. For example, both abstractors collected an ejection fraction test, collected the same test type and test result within the same year, but there was a discrepancy in the month/date collected (for example 11/5 vs. 11/7). This is not counted as part of IRR. In the IRR comparison, any free text entered by the two abstractors should contain similar information. The information does not have to be identical.

4. The two abstractors will schedule a meeting to review the discrepant items and come to an agreement on the correct abstraction. Any discrepancies that cannot be resolved should be brought to the team meeting for discussion.
5. If applicable, the primary abstractor should correct the primary abstraction in the database (not the IRR abstraction in the dummy record).
6. If there are discrepancies/items on the review that cannot be found again in the chart, remove the data entirely from the database.
7. Save the IRR spreadsheet throughout this process.
8. Notify the project manager that the IRR is complete so that an IRR team meeting can be scheduled.
9. The primary abstractor should keep this chart on their shelf in the chart room until the completion of the team meeting.
10. The primary abstractor will prepare handouts of IRR items for discussion at the team meeting.
11. The team will meet for an IRR team meeting and go over the discrepancies to raise awareness of difficult-to-abstract variables, discuss discrepancies openly, evaluate whether the codebook is clear, and build abstractor agreement at the team level.
12. After the IRR team meeting, the primary abstractor will update the primary abstraction record in the Access database with any additional corrections. The primary abstractor will update the IRR spreadsheet and document that the updates have been made to the primary Access record.
13. The lead abstractor will update the codebook with any changes to the protocol decided upon during the IRR team meeting. If necessary, the lead abstractor will add questions to the Question Log and PI meeting agenda for further discussion with the PI.

D.8.4 Chart Distribution and Medical Records Room Procedures

KPWHRI Medical Records homepage:
https://sp-cloud.kp.org/sites/KPWHRI-Research-Operations/SitePages/Medical-Records.aspx

Priority Sequence for Chart Abstraction
Charts with the earliest due date should be abstracted first.

Measuring Chart Inches
Chart inches are determined by removing the rubber bands and measuring the chart in the middle of the long open side (opposite of spine).

Large Chart Distribution

The prior team rotated abstraction of charts that were 5" or larger according to the following:

- The lead abstractor measured incoming charts. She placed 5+"charts on the shelf labeled "Large Charts" and placed charts 4.75" or less on the general "Incomplete" chart shelf.
- Abstractors alternated abstraction of large charts and regular charts, working in order of the chart with the earliest due date.

Medical Records Usage and Tracking

Chart Room Guidelines:

- Keycard access to the chart room is available by request from the medical records manager.
- Charts arrive in tote bins labeled for whoever ordered the charts. The charts are unloaded and distributed to the shelves labeled by study and abstractor.
- Each chart has a packing slip in the front sleeve. When a chart is finished and placed in a tote ready to be shipped back, the slip is removed and given to the designated person(s) who maintain the order tracking spreadsheet.

Tracking Medical Records

- An Excel file is maintained by the lead abstractor and the PM for tracking the ordering and returning of paper charts.

Misfiled documents (for wrong patient) in paper chart or Epic

Wrong-patient documents in paper charts:
Remove any wrong-patient documents and add a sticky note explaining that the document was misfiled. Place it in an inter-office envelope and send to Jeanette Dimatulac, mailstop RCR-A3E-05. (Return the rest of the chart according to standard chart return procedures.)

Wrong-patient errors in Epic:
Email 'Health Information Management' (mailto:healthinfomgmtconsultants@kp.org). Include the following in the body of the email:

Patient's consumer # (where error is found)
Patient's initials
Date of service
Description of what's wrong with the record
Correct Medical Record Number (if known)

D.8.5 Chart Abstraction

Verifying Preloaded Data

Preloaded data in the ACT CR database needs to be compared to the medical record where applicable. The pre-loaded data includes Study ID, ACT Study Enrollment Date, Birth Date, and Gender.

Abstraction Follow-up

There will be regular abstraction team meetings to discuss progress, special issues, and unresolved questions related to data collection. All unresolved issues and an abstraction status report will be presented at the study team meetings. The Question Log shows what and how decisions have been made: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Question Logs\ACT_Chart_Rev_Qx_Log_20091204.xls.

Abstraction Instrument

The abstraction instrument (database) is the basis of the data collection system; every data element has been replicated in electronic format in the abstraction instrument.

ACT CR Manual of Operations

The ACT CR Manual of Operations (codebook) includes point-by-point instructions and examples for each variable, as well as general instructions for collecting all the project data elements contained in the database. Refer to the Manual of Operations whenever there is a question. All abstractors should maintain an up-to-date copy of the Manual of Operations.

Who to Contact with Questions

Please contact the appropriate person per the sequence below with questions. Once resolved, the lead abstractor will update the Question Log and the next version of the Manual of Operations, as needed.

For abstraction questions:

1) Refer to the Manual of Operations
2) Refer to the Question Log
3) Consult with the lead abstractor or with all members of the abstraction team
4) If further follow-up is needed, the question(s) will be brought to the ACT CR team and/or PI for discussion.

For technical/database questions:

1) Speak with the lead abstractor or project manager, who will follow up with the programmer (if necessary).

We are guided by the philosophy of continuous quality improvement, where questions and concerns will be treated as opportunities to learn and improve.

D.8.6 Data Collection System (Database)

Database Description

The data collection system was developed using Microsoft Access 2003 software and updated to Access 2016. It consists of 3 forms (described below). The database abstraction form combines medical record abstraction and data entry into one step. The advantage of this is that once the

abstraction is complete, data are available immediately for analysis. In addition, Access programming allows logic checks at various levels so that the need for data-cleaning is minimized.

There are some logic checks and range checks in place, so the abstractor is prompted if the entered value is out of range or fails the logic check.

There are navigational buttons allowing the abstractor to go to any form from any part of the abstraction instrument on the right-side of the database screen. However, commands to exit the abstraction instrument are only available in Form 1.

The following materials are needed for the chart abstraction process:

- ACT CR Access database for data entry
- ACT CR Abstractor Chart Completion Log (shared Excel file)
- Abstractor Face Sheet (optional)
- Paper medical record (chart)
- Epic online medical record
- ACT CR Manual of Operations (codebook)
- Scanner for PDF-ing neurological imaging (paper) reports
- Redaction software for neurological imaging PDFs

Abstracted data are collected via 3 forms, outlined as follows:

- FORM 1: History (has tabs for Tracking, Female History, and Initial Conditions)
- FORM 2: Yearly Items
- FORM 3: Labs

Using the Abstraction Instrument

Getting started on Form 1:

1. Open the Access database and match Study ID # to paper and electronic medical records.
2. Before abstracting any data the Study ID must be selected from the Study ID drop-down menu. Study IDs are pre-populated.
3. Choose the Study ID number on the upper left corner of the form by selecting the little black down arrow and clicking on the Study ID number, or by typing in the Study ID number from the chart slip.
4. Once the Study ID number is chosen, the preloaded electronic data will populate the data fields.
5. Confirm that the pre-populated electronic data for this Study ID number is consistent with the paper medical record, such as Date of Birth (DOB).
6. Enter your initials, start date and time, chart thickness, and number of Epic entries into the ACT CR Abstractor Chart Completion Log Excel file.
7. Save a copy of the ACT Chart Abstraction Face Sheet if helpful: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Abstraction Training\Forms\ Abstraction FaceSheet 20120918.xls
8. Next, select your name in the Access database from the Reviewer drop-down list. Do not enter the 'Final review date' until you are finished working with the abstraction.

Abstracting History Data on Form 1

The History form is made up of tabs. Clicking on the tab brings to the front its associated questions. By default the form opens with the Tracking tab in front.

- **Tracking tab:** You will return to this form at the end of the abstraction to enter your total review time. Also enter the first adult height found in the patient medical record, reviewing the oldest medical records first. This variable is only recorded once in the database.
- **Female history tab**: Abstract this data for all assigned female at birth participants.
- **Initial Diagnoses**: Abstract the following initial conditions and corresponding detail/dates: AFIB, CHF, COPD, Diabetes, Hearing difficulties.

Some Notes on Form 1

Use the gray buttons (on the right side of the screen) to navigate between forms, Tab key / Enter key / pointer to move within the form.

Stopping anytime during the course of abstraction will not result in lost data.

There is no need to "save" data as it is automatically saved in the database.

From Form 1, you can navigate to Form 2, Form 3, or you can exit the database.

Abstracting Yearly Data on Form 2:

1. Medical records may be duplicated in the chart and Epic from 2000-2004.

   Epic Initial Directions

   - Chart tab→ Enter patient medical record number and cross-check date of birth and name with paper chart
   - Snap Shot→ Problem List (to see list of health problems)
   - Chart Review→ Encounters→ Scanned documents prior to 2003. Do not review/abstract scanned documents prior to 2003 because they are almost always duplicates of what is in the paper chart.
   - Chart Review→ Encounters→ Visit Notes. Prior to 2003, a blue paper clip (attachment) to the left of the encounter indicates there is content in the note; after 2003 almost all visit notes have information, whether or not there is a paper clip next to the visit. All encounters starting in 2003 should be opened and checked for unique information not found in the paper chart, except visits of the following description: Advance Directive, Cancelled, Conditions of Admission [this is a legal document for hospital admission and does not include medical conditions], Encounter opened in error, No Show, Overbooked appt. Registration. The visit description is noted in Epic under the "Description" column. In addition, visit types Hospital Rounding and Nursing Home Visits are billing shells and do not contain visit data. The visit type is noted in Epic under the "Type" column. These types of encounters are typically already filtered out in the chart reviewer view.
   - Chart Review→ Encounters: Do not review/abstract "non-encounters" such as calls to the consulting nurse or secure messages. Note: Continue to abstract real-time virtual phone/video encounters. Disregard the following types of encounters:
     i. CNS TE (Consulting Nurse Telephone Encounter)

ii. AMS Anticoag Encounter
iii. Telephone with HH/PA/HP (home health, palliative care, hospice)
iv. Telephone with AMS
v. Patient Message
vi. Refill

- Chart Review→ Notes. Do not use the encounters in the "Notes" tab for abstraction as they exclude the vital signs and other form data found at the top of encounters. They are also duplicative of the Encounters tab. Abstract from the "Encounters" tab instead.
- Chart Review→ Laboratory. Do not abstract from this tab.
- Chart Review→ Imaging (for information on CT scans and MRIs) – all records have links to information; they do not need a blue paper clip to have information. On earlier records, the links will lead to a blank template.
- Chart Review→ Procedures (for information on earlier ECHOs)
- Chart Review→ Cardiac Studies (for information on ECGs and more recent ECHOs)
- Chart Review→ Medications. Do not abstract from this tab.
- Chart Review→ Referrals. Do not abstract from this tab.
- Chart Review→ Episodes. Do not abstract from this tab.
- Chart Review→ Other Orders. Do not abstract from this tab.
- Chart Review→ Letters. Do not abstract from this tab.
- Chart Review→ Misc reports. Do not abstract from this tab.
- Chart Review→ Media. Do not abstract from this tab.
- Chart Review→ Consents. Do not abstract from this tab.
- Flow sheets→ MMSE, Senior Wellness Visit. You still need to check data against other records in Epic because not all information will appear in the flow sheet. The flow sheets only show data post-2006, and may not contain complete data for the variable in question.
- Care Everywhere→ Inpatient or outpatient records that show up as being from outside facilities. Only review and abstract the discharge summary (and the H&P if the discharge summary says "see H&P").
- Care Everywhere→ Outside facility visits that show up as KP encounters. Keep abstracting outpatient records that show up as KP encounters.

Access Database Form 2 Navigation Instructions

2. ACT CR Access database: To scroll between years, use the right and left arrows on the "Record" button at the bottom left of the screen.

3. Use the right and left arrows on the "Record" bar in the bottom of smaller boxes inset within the screen to scroll between records within the same year.

4. To move between fields in the screen, use Tab, Enter, pointer, or click in the field.

Paper Chart Initial Directions:

5. Locate first medical visit/encounter with GHC.
6. Locate outside records for pre-GHC information (if available, it is often in the back of the right side of the chart).
7. The "Add New Year" button allows you to enter a new year to the Access database. Only add a year to the database if there is a yearly condition, blood pressure, weight, or medication to abstract for that year. See Manual of Operations specific sections on Conditions/Procedures (C.2 – C.10), Demographics (C.1), and Medications (D.6) for guidelines. Enter the first year documented in the subject's records (either GHC records or outside records included in the GHC chart). If a year is entered in error in Form 2: Yearly Items, you will need to email the programmer to ask them to remove it from the database.
8. You cannot enter any data in Demographics/BP, Medical Conditions, or Medications sections unless a year is entered at the top of the screen.
9. Some chart abbreviations you might see:

   CC = Chief complaint (main reason for visit)

   UC = Urgent Care

   HH = Home Health

   VNS = Visiting Nurse Service

   PMH = Past Medical History

   See full list of medical and pharmacy abbreviations in Appendix D.10 and D.11.
10. Read the chart from first visit to the last in the paper medical record. As you read chronologically through the chart you will be abstracting demographics, yearly weight, BP, yearly medical conditions/procedures, and medications.
11. Review the ECGs, CT scans, X-rays, and MRI reports for diagnoses which you will corroborate with chart notes. Weight, height, and BP can sometimes be found on older X-rays, ECGs, or CT scans. See Manual of Operations C.1.1 and C.1.6 for instructions on coding BP and Weight. Scan to PDF any neuroimaging scans that meet study criteria for copying (see Manual of Operations C.4.6 for criteria and directions).
12. Demographics/BP tab: Enter the first yearly weight found in the chart for that year. Enter the first BP found (if available) according to the criteria in the BP section for each of the three yearly time periods (Jan-April is Period 1, May-Aug is Period 2, and Sept-Dec is Period 3). Enter the date of the BP you find. If you find subsequent BPs in the same period, you can compare the dates with the date of the BP you entered.
13. Go through the Medical Conditions/Procedures tabs and abstract data on yearly conditions. See Manual of Operations A.6 and C.1 through C.11 for guidelines on abstracting yearly data.
14. If you find documentation that a subject had a condition (that we collect) in an earlier year, enter the earlier year and the condition. For example, the first medical visit/encounter in the chart is 1965 and the chart note states that the patient reported that they had a cholecystectomy in 1960. Enter the year 1960 in the database and check the box for "Cholecystectomy." See Manual of Operations A.6 for guidelines on abstracting Yearly Items. In addition, any other significant medical history data noted in the chart which cannot be entered into an Access database field should be entered in the Conditions of Note section. Note: Do <u>not</u> input any information disclosing a Sexually Transmitted Disease (STD) in Conditions of Note or any other free-text areas of the database.

15. The "Record" button on smaller boxes inset within the screen (such as CHF, MI, Stroke, and Medication Name) allows you to enter an additional condition or medication and to scroll between records within the year you are working in. For example, if a subject takes 5 medications in 1970, the "Record" button would allow you to scroll through all 5 medications within the year 1970.
16. Abstract all medications of interest prior to 1977 for which the participant was age 40+ at the time (see description in Appendix D.6.1).
17. Abstract any medications that were ceased or discontinued due to contraindication or intolerance. Note: There are some ceased medications that are not collected such as topical medications (see C.10.2 and C.11.1 for details).
18. Review the Epic online medical record Abstract any unique information that is not duplicated in the paper medical record, such as aspirin (if chronically used), NSAIDs (in conjunction with arthritis), ceased medications, visits, discharge summaries, and demographic information.

Abstracting Lab Data on Form 3:

1. Abstract Form 3. Labs are usually in chronological order on the left side of chart, but they could be on the right in very old charts or in notes from hospitals or outside records.
2. Go to Form 3: Labs in the Access database
3. Use the >* button at the bottom of the labs box to add a new year/period.
4. Use the "Delete Year/Period" button to delete any years or periods that have been entered in error.
5. Abstract all specified labs from the paper chart that are pre-1988 (through 12/31/1987) in Form 3: Labs. Remember to enter the earliest chronological lab data you find in each period (Jan-April is Period 1, May-Aug is Period 2, and Sept-Dec is Period 3). See Manual of Operations C.12, Laboratory Results, for exceptions to Blood Glucose, Hgb, and Cholesterol. For PT and INR (or other bleeding tests including protime Control and Protime Ratio), enter every instance found pre-1988, and the dates of the PT/INR.

Final Database Procedures (when abstraction is complete):

1. There is no need to "Save" your data. The Access database saves it automatically each time you click into a new field.
2. Complete the "Tracking" tab (including your abstraction time). Click the gray "Exit" button.
3. Click the "Exit Database" button from the main menu.

Abstraction Completion Procedures

1. If you used an ACT Abstractor Face Sheet, file it in a locked filing cabinet or shred it.
2. Upon completion of the abstraction, you will enter completion data in the Abstractor Chart Completion Log, located in G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Tracking Databases\ACT CR Abstractor Chart Completion Log.xls
3. Enter:
   a) the Study ID number, and your initials (if not already done)
   b) the date you completed your abstraction

c) the total amount of time you spent on abstraction, in decimal format (rounded to the nearest quarter hour)

d) the thickness of the paper medical record in inches (if not already done)

e) the number of encounters in Epic (if not already done)

4. Return the chart to "Completed ACT" shelf in the Chart Room. The chart orderer will track the returned charts and load them into the return totes.

D.8.7 Data Element Collection Intervals

The following items are completed ONCE:

B.1.1 Study ID (pre-populated)
B.1.2 ACT Study Enrollment Date (pre-populated)
B.1.3 Birth Date (pre-populated)
B.1.4 Gender (pre-populated)
B.1.5 Height (first adult height available chronologically)
B.3.1 Hysterectomy and Oopherectomy (for female subjects)
B.3.2 Parity/Gravidity (for female subjects)
B.3.3 OC Use (for female subjects)
B.3.4 Hormone Use (for female subjects)
C.8 Initial AFIB
C.2.13 Initial CHF
C.2.16 Initial COPD
C.3.2 Initial Diabetes
C.3.9 Hearing difficulties

The following items are collected THREE TIMES A YEAR (the FIRST time recorded within each of the 3 Time Periods) from year of first visit through 12/31/1987. They are also collected as historical data prior to GHC enrollment.

Time period 1: January 1 through April 30
Time period 2: May 1 through August 31
Time period 3: September 1 through December 31

C.12.1 Laboratory Results
BUN
Calcium
Cholesterol (total)
HDL Cholesterol
LDL Cholesterol
Triglycerides
Serum Creatinine
Blood Glucose
Hemoglobin
Glycated Hemoglobin
Hemoglobin A1c
Thyroid hormone (T3)
T3%
Thyroid hormone (T4)

TSH

Urinalysis

Albumin

Protein

WBC

The following items are collected with lab values and dates for ALL instances through 12/31/1987.

Prothrombin Time (PT)

Protime Control

Protime Ratio

International Normalized Ratio (INR)

The following items are collected THREE TIMES A YEAR in the paper record (the FIRST time recorded within each of the 3 Time Periods) from year of first visit through present, disenrollment, or death. They are also collected as historical data prior to GHC enrollment.

Time period 1: January 1 through April 30

Time period 2: May 1 through August 31

Time period 3: September 1 through December 31

C.1.1 Blood Pressure

C.3.3 Insulin Usage (participants with diabetes who use insulin)

The following items are collected YEARLY:

New year records prior to GHC enrollment <u>should not be</u> created for historical data found regarding these items.

C.1.2 Alcohol, current and reported history

C.1.4 Smoker, current and reported history

New year records prior to GHC enrollment <u>should be</u> created for historical data found regarding these items.

C.1.6 Weight (first weight recorded within the year) (also collected as historical data prior to GHC enrollment)

C.2.2 Angina

C.2.3 Anxiety

C.2.4 Arthritis

C.2.5 ASA Use, Chronic

C.2.6 Asthma

C.2.8 Blood Transfusion

C.2.9 CABG

C.2.10 Cancer

C.2.11 Cardiac Arrest

C.2.12 Carotid Endarterectomy

C.2.13 Congestive Heart Failure (CHF)

C.2.14 Cholecystectomy

C.2.15 Confusion During Inpatient Hospitalization

C.2.16	COPD
C.2.17	Coronary Angioplasty
C.3.1	Depression
C.3.2	Diabetes
C.3.3	Insulin Usage
C.3.6	Edema
C.3.7	Ejection Fraction Test
C.3.8	Epilepsy
C.3.9	Hearing Difficulties
C.3.10	Hypertension
C.4.1	Memory Complaints
C.4.2	Migraines
C.4.3	MMSE
C.4.4	Myocardial Infarction
C.4.6	Neurological Imaging Scan of Brain
C.5.1	Pacemaker Initial Placement or Removal
C.5.2	Parkinson's
C.5.3	Physical Injuries
C.6.1	Pneumonia
C.6.2	PVD Procedure
C.6.3	Subarachnoid Hemorrhage (Non-traumatic)
C.6.4	Subdural Hematoma (Non-traumatic)
C.6.5	Valvular Heart Disease
C.6.6	Vision Problems
C.6.7	VTE/DVT/PE
C.6.8	Warfarin/Coumadin Adverse Reaction
C.7.1	Stroke
C.7.2	Old Infarct Date Unknown
C.7.3	TIA
C.8	Subsequent Year Atrial Fibrillation (AFIB)
C.9	Lifetime Health Monitoring Program
C.10.1	Pre-1977 Prescription Medications (**through 12/31/1976 only)**
C.10.2	Pre-1977 Cessation of Medications (**through 12/31/1976 only)**
C.11.1	Post-1976 Cessation of Medications (**from 1/1/1977 through present)**

D.8.8 Reference Tool Websites

MedLine Plus, good information for learning about conditions and associated diseases
http://medlineplus.gov/

UpToDate, comprehensive descriptions of background, diagnoses, treatments
Accessible through Epic (upper right of screen)

MedicineNet.com, information about diseases, procedures, and medications

https://www.medicinenet.com/

KP formulary to look up medications
http://www.crlonline.com/lco/action/home

Conversions to/from metric (weight, length, temperature)
https://www.worldwidemetric.com/conversion-calculator.asp

D.8.9 Abstractor Training Overview

The training phases may be divided into activities before handling charts and activities with charts.

Pre-chart activities:

Introduction to the study
An overview of the main ACT study and the ACT Chart Review study will be presented by the project manager, lead abstractor, and principal investigator.

Introduction to paper and Epic abstraction
If the abstractor is newer to abstraction, they will attend the paper and Epic abstraction training sessions put on by the Medical Records Manager.

Medical Records meetings
Meet with the Medical Records Manager to learn more about medical records generally and explanation of policies.

Receive a tour of the chart room as it pertains to ACT CR activities from the lead abstractor.

Electronic tours
Watch Paul Crane's video introducing the ACT study (bring headphones). Copy it onto your desktop and open it from there; it takes an hour or so to buffer when accessed from the server.

Receive a tour of the ACT CR study folder, its contents, and its most-used files from the lead abstractor or the PM. Review which files should be given shortcuts on your desktop.

Receive a preview/overview of the Access database from the lead abstractor.

Activities once a chart is in hand:
Receive a tour of the paper chart (anatomy of a chart and what's useful) from the lead abstractor.

Receive a tour of abstracting in Epic (layout and what's useful) from the lead abstractor, either before starting the training chart or after abstracting the paper portion and before moving on to Epic.

Talk with lead abstractor about tips and tricks for maintaining focus, physical comfort, and potential mental/emotional strain.

Combinations of review activities:

1) Read the Manual of Operations and the corresponding sections in the Question Log.
2) Receive a tour of the database from the lead abstractor in conjunction with a chart.
3) Click through the database more in depth on your own, looking at dropdowns and options, while reading the Manual of Operations.

4) Shadow the lead abstractor for several hours, with the lead abstractor explaining what they are looking for, what they can disregard, and why.

5) Set up a system with the lead abstractor for asking questions (e.g., call, email, in person; as they arise, or batch and ask once daily).

Training Exercise 1

Scavenger hunt through the paper chart, located below in D.9.10: Abstractor Training Materials

Training Exercise 2

The new abstractor will complete the "Abstracting Difficult Variables" worksheet, located below in D.9.10: Abstractor Training Materials, and discuss it with the lead abstractor.

Training chart

The new abstractor abstracts a training chart (one that the lead abstractor has already completed) into a dummy record. The new abstractor may wish to do the paper part first, receive a refresher on Epic from the lead abstractor (or wait and get the full Epic tour now), and then move onto Epic. When finished abstracting, notify the project manager, who will create a comparison report between the two records. The lead abstractor and the new abstractor will walk through the discrepancies together.

Certification Process

The new abstractor will begin to abstract charts independently. 100% of these abstracted charts will be re-abstracted by the lead abstractor or a certified alternate. The new abstractor and lead abstractor will meet to discuss discrepancies after each re-abstraction. Any discrepancies found to be errors in the primary record will be changed. When the new abstractor has completed 3 charts in a row with ≥ 93% agreement with the lead abstractor (or a designated certified alternate), the new abstractor will be certified in the study protocol.

Training Checklist

Initial and date each activity when complete.

1. Familiarize yourself with the location of documents in the G:/ drive: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010
2. Review the Medical Records homepage for policies and procedures of the chart room. https://sp-cloud.kp.org/sites/KPWHRI-Research-Operations/SitePages/Medical-Records.aspx
3. Meet with the Medical Records Manager to discuss Chart Room policies.
4. Read through the Manual of Operations (codebook), writing down any questions to discuss with lead abstractor.
5. Receive "tour" of Access database with lead chart abstractor.
6. Click through fields in Access database while reading through matching descriptions in Manual of Operations. Review all drop-down menus. Practice navigating through the database.
7. Complete Training Exercise 1 (scavenger hunt), below.
8. Read the ACT CR Question Log in: G:\CTRHS\ACTChartReview\Nov 2009 - Dec 2010\Question Logs\ACT_Chart_Rev_Qx_Log_20091204.xls
9. Complete Training Exercise 2 (Abstracting Difficult Variables) worksheet, below.

10. Abstract first 'real' chart. A certified abstractor will also abstract the same chart. The project manager will run an IRR report so the two abstractors can discuss it.
11. Complete Certification process.

D.8.10 Abstractor Training Materials

Training Exercise 1: Scavenger hunt through the paper chart

Look for the following items in the paper chart:

1. Find the year the chart history starts_____and the year the chart history ends_____
2. Find the year of the first lab slips. Year_____
3. Find the first mention of Smoking History. Year_____
4. Is there a mention of smoking status? (smoker or non-smoker)_____
    a. If a smoker, is there a mention of how much the patient smokes?_____
    b. Is there a mention of how long the patient has smoked?_____
5. Find the first notation (oldest) and last notation (most recent) of Blood Pressure measurement in the paper chart.
    a. Oldest date and BP_____
    b. Most recent date and BP_____
6. Is the patient deceased?_____
    Mention of cause of death?_____
7. Mention of female reproductive history
    a. How many births?_____
    b. Any abortions or miscarriages?_____
8. Mention of alcohol history?_____
9. Mention of any chronic disease that is treated_____
10. First medication (that we abstract) listed for the patient_____

Training Exercise 2: Abstracting Difficult Variables Worksheet

1. Smoking history: What is the pack year history for a subject who smoked 1 pack of cigarettes per day for 30 years? How many cigarettes is this per day?
2. What is the pack year history for a subject who smoked two packs a day for 30 years? How many cigarettes is this per day?
3. Chart notes state: Patient smoked 2 packs a day for 30 years. How should this be entered in the database?
4. The chart has off-and-on references to patient smoking, but never mentions specific number of years, amount smoked, or specific dates started and quit. How to code?
5. Chart notes state: Patient had a blood transfusion when he had back surgery (date unknown). Another note states that the back surgery was in 1940. How to enter the blood transfusion in database?
6. You find three weights documented for a patient in a given year, in February, June, and October. Which weight do you enter for the yearly weight?
7. A patient has a fem-pop bypass. Is this a CABG procedure or a PVD procedure?
8. A patient has prior history of a "Stroke" recorded in her medical history. It lasted only a few minutes and the neurological deficits lasted less than 24 hours. Do you abstract this as a stroke or a TIA?
9. A patient has Percutaneous Transluminal Angioplasty (PTA) on his leg. Is this coded as Coronary Angioplasty or PVD Procedure?
10. A patient has Percutaneous Transluminal Coronary Angioplasty (PTCA). Is this recorded as Coronary Angioplasty or PVD Procedure?
11. A patient has postural blood pressures taken. Which blood pressure do you abstract?
12. A patient discontinues ASA due to a GI bleed. Where is this recorded?
13. A patient discontinues Lasix because she dislikes experiencing urinary frequency. How is this recorded?
14. A patient has multiple mentions of "High Blood Pressure" and you notice his last BP was 145/90. Do you code Hypertension?
15. A patient has lab results from 1989. Do you collect them?

Training Exercise 2: Abstracting Difficult Variables Answer Key

1. 30 pack years, 20 cigarettes per day
2. 60 pack years, 40 cigarettes per day
3. Check “Smoking History” and enter 60 pack years.
4. Check “Smoking history” and leave “pack year history” blank. Check “Smoker, cigarettes” in the years that active smoking is mentioned, and leave the “Amount” blank.
5. Enter year 1940 in database. Checkbox for Blood Transfusion
6. Enter the first documented yearly weight, which is in February.
7. PVD procedure. CABG is a coronary procedure.
8. TIA
9. PVD Procedure
10. Coronary Angioplasty
11. The first outpatient BP should be abstracted.
12. ASA: Discontinuation of ASA
13. Record in Cessation of medications.
14. No. Only code hypertension if the patient has a written diagnosis of hypertension in his chart.
15. No. Only collect labs through 12/31/1987.

D.9 Methods Section

AFIB

Trained chart reviewers analyzed data from participants' medical records.

For the first lifetime episode, the operational definition required ECG confirmation of atrial fibrillation. The first episode was characterized by its duration (7 days or less vs. 8 days or more) and, if it resolved, whether that resolution was spontaneous or the result of cardioversion.

Following the initial episode of atrial fibrillation, subsequent data collection included rhythms from documented ECGs. We considered years in which there were at least two ECGs, at least two cardiologist visits, or a combination of one cardiologist visit and one ECG. We categorized each of these years as having documented sustained atrial fibrillation (defined as having all ECGs and all cardiologist visits during the year indicate atrial fibrillation); documented intermittent atrial fibrillation (defined as having some ECGs or cardiologist visits indicate atrial fibrillation and some ECGs or cardiologist visits indicate some other rhythm); and documented sustained non-atrial fibrillation (defined as having all ECGs and all cardiologist visits during the year indicate some rhythm other than atrial fibrillation).

In secondary analyses, we further evaluated years with only a single ECG or cardiologist visit, which were categorized on the basis of that data as single time point atrial fibrillation or single time point non-atrial fibrillation.

These considerations are tabulated below.

	Number of cardiologist visits plus ECGs		
	At least 2	Exactly 1	0
Primary analyses:			
Sustained AF	All show AF		
Intermittent AF	Some each way		
Sustained non-AF	All show non-AF		
Secondary analyses			
Single AF		Shows AF	
Single non-AF		Shows non-AF	

Note: We discontinued abstracting physical exams with auscultation (listening with a stethoscope) by a cardiologist in spring 2012.

D.10 Medical Abbreviations Glossary

A

ā	before [ante]
abd.	abdomen
ADHD	attention-deficit hyperactivity disorder
ADT	admission, discharge, transfer
AFH	adult family home
AIDS	acquired immunodeficiency syndrome
AION	anterior ischemic optic neuropathy (stroke)
ALF	assisted living facility
A & P	auscultation and percussion; anterior and posterior
AKA	above knee amputation
ad lib.	as desired [ad libitum]
alt.	alternate
ant.	anterior
art.	artery, arterial
ASAP	as soon as possible
AB, ab	abortion
a.c.	before meals [ante cibum]
adm.	admission
amt.	amount
ARD	acute respiratory disease
ARMD	age-related macular degeneration
ASA	aspirin (acetylsalycylic acid)
ATS	anxiety tension state, arteriosclerosis, atherosclerosis

B

B	bilateral (also bil., bilat.)
BCP	birth control pills
bid	twice a day [bis in die]
BP	blood pressure
Ba	barium
BE	barium enema
BKA	below knee amputation
BM	bowel movement
BOO	bladder outlet obstruction
BRB	bright red blood (in stools)
BRBPR	bright red blood per rectum (in stools)
BRAO	branch retinal artery occlusion
BTL	bilateral tubal ligation
BUN	blood urea nitrogen

Bx or bx	biopsy

C

c	with [cum]
C1, C2, C3	1st, 2nd, 3rd cervical vertebra
Ca, CA	cancer, carcinoma
Ca	calcium
CAD	coronary artery disease
cap.	capsule(s)
card.	cardiac, cardiology
cath.	catheter(ize)
CBC	complete blood count
CBS	chronic brain syndrome
CC	chief complaint, current complaint(s)
CCU	critical care unit
CHD	congenital heart disease, congestive heart disease, childhood disease(s)
CHF	congestive heart failure
chol. est.	cholesterol, esters
chr. OM	chronic otitis media
Cl	clavicle, chlorine/ide
CLD	chronic lung disease, chronic liver disease
cm.	centimeter
CNS	central nervous system
C/O	complains of
CPR	cardiopulmonary resuscitation
CRF	chronic renal failure
C-spine	cervical spine films
COPD	chronic obstructive pulmonary disease
C&S	culture & sensitivity
CT scan	computed (axial) tomography
CVA	cerebrovascular accident
c/w	compare with, consistent with
Cx	cervix
CXR	chest x-ray

D

DC, D/C	discontinue, discharge
D&C	dilatation & curettage
D&V	diarrhea & vomiting
DI	drug interaction, diabetes insipidus
disch.	discharge
DJD	degenerative joint disease

DM	diabetes mellitus
DKA	diabetic ketoacidosis
DOA	dead on arrival
DOB	date of birth
DOE	dyspnea on exertion/exercise
DPOA	designated power of attorney
DPT	diphtheria, pertussis, tetanus
DSD	dry sterile dressing
DSM	Diagnostic and Statistical Manual of Mental Disorders
DT	diphtheria & tetanus
DTs	delirium tremens
DU	duodenal ulcer, Dx undetermined
DVT	deep venous thrombosis
Dx	diagnosis

E

ECG, EKG	electrocardiogram
ECHO	echocardiography
ECT	electroconvulsive therapy
EDC	estimated/expected date of confinement
EEG	electroencephalogram
E(ENT)	(eyes), ears, nose, throat
el., elix.	elixir
emer.	emergency
EMG	electromyelogram
enl.	enlarged
ER	emergency room
etiol.	etiology
ETOH	ethyl alcohol
exp. lap.	exploratory laparotomy
ext.	external

F

FB	foreign body
FBS	fasting blood sugar
Fe	iron
FH, FHx	family history
fl.	fluid(s)
FMP	1st menstrual period
FOB	fecal occult blood
FOOSH	Fall onto outstretched hand (a mechanism of injury)
FROM	full range of motion/movement
FT	follow through

FU, F/U	follow up
FUB	functional uterine bleeding
FUO	fever of unknown origin
Fx, fx	fracture(s), frozen section

G

G2, G3	2nd and 3rd pregnancy
GB	gallbladder
GBS	gallbladder series
GC	gonococcus, gonorrhea
gen.	generalized
GI	gastrointestinal
gm.	gram(s)
GP	general practitioner
grav. I	gravida pregnant, 1st time, one time
GTT	glucose tolerance test
GU	gastric ulcer, genitourinary
gyn.	gynecology

H

HA(s)	headache(s)
HBP	high blood pressure
HC	hydrocortisone
Hct	hematocrit
HCT(Z)	hydrochlorothiazide
HCVD	hypertensive cardiovascular disease
HDL	high density lipoproteins
HEENT	head, EENT
HF	heart failure
Hg	mercury
Hgb	hemoglobin
H & H	hematocrit and hemoglobin
HIV	human immunodeficiency virus
H&L	heart and lungs
HM	heart murmur
HNP	herniated nucleus pulposus
h/o	history of
HR	heart rate
hs	at bedtime [hora somni]
HS	herpes simplex
HSV	HS virus
HT	heart tones
Ht	heart

ht.	height
HTN	hypertension
Hx	history
hy., hys.	hysteria
hyster.	hysterectomy
HZ	herpes zoster
H2O, H_2O	water
H2O2, H_2O_2	hydrogen peroxide

I

ICC	intensive coronary care
ICU	intensive care unit
I&D	incision & drainage
IDD(M)	insulin-dependent diabetes mellitus
IM	intramuscular
IMB	intermenstrual bleeding
imp.	impression, improved
incr.	increase(d)
int.	internal
I&O	intake & output
irr.	irradiation
irrig.	irrigation
ITT	insulin tolerance test
IUD	intrauterine device
IV	intravenous
IVP	intravenous pyelogram

L

L, LT	left
L1, L2	1^{st}, 2^{nd} . . . lumbar vertebrae
L-spine	lumbar spine
lab.	laboratory
lac.	laceration
lap.	laparoscopy, laparotomy
lat.	lateral
LBP	low-back pain
LBW	low birth weight
LDL	low-density lipoproteins
LDH	lactate dehydrogenase
LE	lower extremity
LFTs	liver function tests
lg.	large

lig.	ligament, ligation
LLB, LLC	long leg brace/cast
LLQ	left lower quadrant
LMP	last menstrual period
LOC	loss of consciousness
LOM	loss of motion
LOS	length of stay
LP	lumbar puncture
LPN	licensed practical nurse
LSK	liver, spleen, kidneys
LT	left
ltd.	limited
LUQ	left upper quadrant
lytes	electrolytes

M

M	murmur
mets	metastasis
MBD	minimal brain damage
MD	muscular dystrophy
meds.	medications
MI	myocardial infarction
misc.	miscarriage
ML	midline
MM	mucous membranes, muscles
MMR	measles, mumps, rubella
MOM	milk of magnesia
MP	menstrual period
MRI	magnetic resonance imaging
M.S.W.	Master of Social Work, Medical Social Worker
MT	membrana tympani, metatarsal
MVA	motor vehicle accident

N

NAD	no acute distress
NB	newborn
neg.	negative
neuro	neurological
Nl.	normal
NIDDM	non-insulin-dependent diabetes mellitus (type II)
NIF	non-injury fall
NL	normal limits
noct.	nocturnal, night

NPO, n.p.o.	nothing by mouth [nulla per os]
NSAID	nonsteroidal anti-inflammatory drug
NVD	nausea, vomiting, diarrhea
NWB	non-weight-bearing
N&V	nausea & vomiting

O

Ø	no, none, absent
O2, O_2	oxygen
OA	osteoarthritis
OB	obstetric
OB/GYN	obstetrics and gynecology
occ.	occasional
OCP	oral contraceptive pills
o.d.	once a day
O.D.	right eye [oculus dexter]
OE	otitis externa
OM	otitis media
OOB	out of bed
ophth.	ophthalmology
OPV	oral polio vaccine
OR	operating room
ORIF	open reduction internal fixation
ortho.	orthopedic
O.S.	left eye [oculus sinister]
OT	occupational therapy
O.T.	Occupational Therapist
OTC	over the counter (drug)
O.U.	both eyes, each eye [oculi unitas]

P

P.	pulse
p	after
P2, P_2	pulmonic 2nd heart sound
palp.	palpatate, palpation, etc.
Pap.	Papanicolau smear
Para 1, 2, 3	unipara, bipara, tripara (number of viable births)
p.c.	after meals [post cibum]
P.C.C.	Poison Control Center
pcn	penicillin
PE, Pex	physical examination
ped(s)	pediatric(s)
PERLA, PERRA	pupils equal, round, react to light &

	accommodation
PE tube	ventilating tube for eardrum
PFTs	pulmonary function tests
Pg	pregnant
PH, PHx	past history
PI	present illness
PID	pelvic inflammatory disease
PIV	peripheral IV
PMB	postmenopausal bleeding
PMHx	past medical history
PMI	posterior myocardial infarction
PMS/PMT	premenstrual syndrome/tension
PND	postnasal drip
p.o.	by mouth/oral [per os]
PO	postoperative
post.	posterior
postop.	postoperative
PP	postpartum, postprandial
PPD	purified protein derivative (tuberculosis test)
preop.	preoperative
pro-time, PT	prothrombin time
p.r.n.	as needed [pro re nata]
PSC	posterior subcapsular cataracts
Psy.	psychiatry
psych.	psychology
PT	physical therapy
P.T.	Physical Therapist
PU(D)	peptic ulcer (disease)
PVD	peripheral vascular disease
PWB	partial weight bearing

Q

q	every [quaque]
q.h.	every hour
q.i.d.	4 times/day [quarter in die]
q.n.	every night

R

RA	rheumatoid arthritis
RBC	red blood count
R/CS	repeat cesarean section
RD	respiratory disease
RDS	respiratory distress syndrome

rec.	recurrent
reg.	regular
rehab.	rehabilitation
resp.	respira -tion(s), -tory
RICE	Rest, ice, compression, elevation
RLE	right lower extremity
RLL	right lower lobe/lung
RLQ	right lower quadrant
r/o, R/O	rule out
ROM	rupture of membranes, range of motion
ROS	review of systems
R&R	rate & rhythm
RT	radiation therapy, respirator therapy
RUE	right upper extremity
RUL	right upper lobe/lung
RUQ	right upper quadrant
Rx	prescription, therapy, treatment

S

s	without [sine]
S1, S2	first, second sacral vertebra
SAD	seasonal affective disorder
SBE	SOB on exertion
SBO	small bowel obstruction
sed. rate	sedimentation rate
SI	suicidal ideation
SI(J)	sacroiliac (joint)
SIDH	syndrome of inappropriate diabetic hormone
sl.	slight
SLB/C	short leg brace/cast
SNF	skilled nursing facility
SOAP	subjective, objective, assessment, and plan
SOB	shortness of breath
SOM	serous otitis media
S/P	status post
SQ, SC	subcutaneous
SR	sed. rate, sinus rhythm, systems review
SS	saline soak, signs & symptoms
Staph.	staphylococcus
STD	sexually transmitted disease(s)
Strep.	streptococcus
surg.	surgery, surgical
Sx	symptoms

T

T, temp	temperature
T&A	tonsils & adenoids, tonsillectomy & adenoidectomy
TAH	total abdominal hysterectomy
TB, Tb, Tbc	tuberculosis
TBLC	term birth, living child
TC	throat culture
TCN	tetracycline
THA	total hip arthroscopy
THR	total hip replacement
TKA	total knee arthroscopy
TIA/E	transient ischemic attack/episode
t.i.d.	3x/day [ter in die]
TKR	total knee replacement
TL	tubal ligation
TM	tympanic membrane
TMJ	temporomandibular joint
TNM	tumor, nodes, and metastasis
TO	telephone order
TOS	thoracic outlet syndrome
TPR	temp., pulse, resp.
Tx	traction, treatment
T1, T2 . . .	1st, 2nd . . . thoracic vert.

U

UA	urinalysis, uric acid, umbilical artery
UC	ulcerative colitis
UC	urgent care (facility)
UCD	usual childhood diseases
UDC	usual diseases of childhood
UE	upper extremity
upper GI	upper GI x-ray series
urg.	urgent
URI/D	upper respiratory infection/distress
US	ultrasound
UTI	urinary tract infection

V

VA	visual acuity
vag.	vaginal
VD	venereal disease
VF	visual field

V-fib	ventricular fibrillation
VIP	voluntary interruption of pregnancy
VMR	vasomotor rhinitis
VO	verbal order
VS	vital signs
VSS	vital signs stable
VV	varicose veins, vulva & vagina

W

w/	with
WBC, wbc	white blood cell, white blood count
WC	wheelchair
w/d	well-developed
WDWN	well-developed, well-nourished
WF, W/F	white female
WM, W/M	white male
WNL	within normal limits
WO	written order
w/o	without
wt.	weight

Y

y.o.	year(s) old

Z

Zn	zinc

SYMBOLS

x	times
↑	increased, above, more, up
↓	decreased, below, less, down
≈	approximately
Δ	change
∴	therefore
=	equal to

Group Health Approved Medical Abbreviations
http://incontext.ghc.org/nursing_ops/reference/documents/abbrevs.pdf
1/20/10

D.11 Pharmacy Abbreviations

Abbreviation	Meaning
2, 3, or 4 with medication	Emprazil is a codeine product with some aspirin in it too. #3 usually refers to the amount of codeine (in this case 30mg per dose). #2 would have 15 mg. #4 would have 60 mg. These are a general rule.
aa	of each
ad	up to
a.c.	before meals
a.d.	right ear
ad lib.	use as much as one desires; freely
admov.	apply
agit	stir/shake
alt. h.	every other hour
a.m.	morning, before noon
amp	ampule
amt	amount
aq	water
a.l., a.s.	left ear
A.T.C.	around the clock
a.u.	both ears
bis	twice
b.d./b.i.d.	twice daily
B.M.	bowel movement
bol.	as a large single dose (usually intravenously)
B.S.	blood sugar
B.S.A	body surface areas

BUCC	inside cheek
cap., caps.	capsule
c, c.	with (usually written with a bar on top of the "c")
cib.	food
cc	with food, (but also cubic centimeter)
cf	with food
comp.	compound
cr., crm	cream
CST	Continue same treatment
D5W	dextrose 5% solution (sometimes written as D_5W)
D5NS	dextrose 5% in normal saline (0.9%)
D.A.W.	dispense as written
dc, D/C, disc	discontinue
dieb. alt.	every other day
dil.	dilute
disp.	dispense
div.	divide
d.t.d.	give of such doses
D.W.	distilled water
elix.	elixir
e.m.p.	as directed
emuls.	emulsion
et	and
ex aq	in water
fl., fld.	fluid
ft.	make; let it be made

g	gram
gr	grain
gtt(s)	drop(s)
H	hypodermic
h, hr	hour
h.s.	at bedtime
i, ii, iii, or iiii	the number of doses (1, 2, 3, or 4)
ID	intradermal
IM	intramuscular (with respect to injections)
inj.	injection
IP	intraperitoneal
IV	intravenous
IVP	intravenous push
IVPB	intravenous piggyback
L.A.S.	label as such
LCD	coal tar solution
lin	liniment
liq	solution
lot.	lotion
mane	in the morning
M.	mix
m, min	a minimum
mcg	microgram
m.d.u.	to be used as directed
mEq	milliequivalent
mg	milligram

mist.	mix
mitte	send
mL, ml	milliliter
nebul	a spray
N.M.T.	not more than
noct.	at night
non rep.	no repeats
NS	normal saline (0.9%)
1/2NS	half normal saline (0.45%)
N.T.E.	not to exceed
o	with
ø	without
o_2	both eyes, sometimes written as o_2
o.d.	right eye
o.p.d.	once per day
o.s.	left eye
o.u.	both eyes
oz	ounce
per	by or through
p.c.	after meals
pig./pigm.	paint
p.m.	evening or afternoon
prn	as needed
p.o.	by mouth or orally
p.r.	by rectum
pulv.	powder

q	every
q.a.d.	every other day
q.a.m.	every day before noon
q.d.s.	four times a day
q.p.m.	every day after noon
q.h.	every hour
q.h.s.	every night at bedtime
q.1h, q.1°	every 1 hour; (can replace "1" with other numbers)
q.d.	every day
q.i.d.	four times a day
q.o.d.	every other day
qqh	every four hours
q.s.	a sufficient quantity
QWK	every week
R	rectal
rep., rept.	repeats
RL, R/L	Ringer's lactate
s	without (usually written with a bar on top of the "s")
s.a.	use your judgment
SC, subc, subcut, subq, SQ	subcutaneous
sig	write on label
SL, sl	sublingually, under the tongue
sol	solution
s.o.s., si op. sit	if there is a need
ss	one half
stat	immediately

supp	suppository
susp	suspension
syr	syrup
tab, tabs	tablet
tal., t	such
tbsp	tablespoon (15 ml)
troche	lozenge
tsp	teaspoon (5 ml)
t.i.d.	three times a day
t.d.s.	three times a day
t.i.w.	three times a week
top.	topical
T.P.N.	total parenteral nutrition
tr, tinc., tinct.	tincture
u.d., ut. dict.	as directed
ung.	ointment
U.S.P.	United States Pharmacopoeia
vag	vaginally
w	with
wf	with food (with meals)
w/o	without
X	times
Y.O.	years old

http://en.wikipedia.org/wiki/List_of_abbreviations_used_in_medical_prescriptions

D.12 Common Indications for Active Medical Conditions

AFIB	Abstract every ECG beginning in the initial year of diagnosis.
Angina	Referral to cardiologist, referral to hospice for terminal angina, or exacerbations in year per codebook. Pre-1977 medication change.
Anxiety	Referral to mental health professional or hospitalization, anxiety attack. Pre-1977 medication change.
Asthma	Referral to specialist (pulmonologist), seen in ER/UC or hospital admission for asthma exacerbation. Pre-1977 medication change.
Cancer	New diagnosis or tx (chemo, radiation, surgery, recurrence, metastasis).
Cardiac arrest	Abstract every time it occurs, specialist referral (cardiologist), surgery.
CHF exacerbation	Hospitalization w/ CHF exacerbation + diuretics (don't have be specified as IV diuretics), or seen in outpatient setting + IV diuretics or ER/UC + IV diuretics.
Confusion during hospitalization	Abstract every time it occurs.
COPD exacerbation	Hospitalized and given steroids or hospitalized with dx of COPD exacerbation.
Depression	Referral to mental health professional or hospitalization, ECT, or suicidal ideation (SI). Pre-1977 medication change.
Edema	Abstract every year it occurs.
Epilepsy	Referred to specialist (neurology). Pre-1977 medication change.
HTN	Specialist referral (cardiology), renal, endocrinology. Pre-1977 medication change.
Memory Complaints	Abstract every year present until participant receives ACT study diagnosis of Alzheimer's or dementia.
Migraines	Referral to neurologist. Pre-1977 medication change.
Myocardial Infarction	Abstract every time it occurs, specialist referral (cardiology).
Parkinson's	Referral to specialist (neurology, speech therapy, speech-language pathology) or home health. Pre-1977 medication change.
Physical Injuries	Abstract every time it occurs.
Pneumonia	Abstract every year it occurs.
Stroke	Abstract every time it occurs.
Subarachnoid Hemorrhage	Abstract every time it occurs.
Subdural hematoma	Abstract every time it occurs.
TIA	Abstract every time it occurs.
Valvular Heart Disease	Abstract every time new heart valve diagnosed, surgery.
Vision Problems	Any condition: Dx. of other eye. Glaucoma: surgery for glaucoma, YAG iridotomy, trabulectomy. Cataracts: Record laser YAG capsulotomy surgery as an active condition for cataracts (not as cataracts surgery).
VTE/DVT/PE	Abstract every time it occurs.