# INSTRUCTIONS FOR THE MEDICATION SURVEY FORM (MSR)

## I. General Instructions

The purpose of the Medication Survey is to assess medication usage in the four weeks preceding the examination date. Information on both prescription and over-the-counter medications is ascertained via scanning of bar code symbols, transcription of labels, and interview. To obtain this information, the participant is asked prior to the clinic visit to bring to the field center all medications, over-the counter preparations, vitamins, minerals, and dietary supplements taken in the four-week period preceding the visit, or their containers. Notification of this request is mailed to the participant with the written instructions for the exam visit, and is re-stated during the appointment reminder call. At that time participants are asked to assemble and bring to the ARIC center all prescription, over-the-counter, and research medications, including medications that are solid or non-solid, that may be swallowed, inhaled, applied to the skin or hair, injected, implanted, or placed in the ears, eyes, nose, mouth, or any other part of the body.

Interviewers require certification in interviewing techniques and familiarity with the data entry procedures for paper and electronic versions of the form (references: https://sites.cscc.unc.edu/cscc/training/cdart/index.html) Paper data entry and subsequent keying will only be used in the event of equipment malfunction or CDART inaccessibility. Scanners / transcribers of medication information also require certification.

## II. Detailed Instructions for each Item

### A. RECEPTION

**Item 1**: Read the question as written.

1. Did you bring all the medications that you used in the past four weeks, or their containers?

**Y**es, all of them ..... Y → **GO TO SECTION B ITEM 5**
No, **S**ome of them ..... S → **GO TO SECTION A, ITEM 3**
No, **N**one of them ..... N

If the response is "Yes, all of them", go to Section B (MEDICATION RECORD) and begin the scanning / transcription. This can take place at the reception station or while the participant proceeds with the clinic visit. As the participant delivers the medications, indicate where (and by whom) they will be returned before he / she leaves. Mention that medication names will be scanned / copied from the labels, and that if required, medications will be taken out of their container only in the presence of, and with approval of the participant. Finally, indicate that a trained interviewer will later ask a few questions about some specific medications. Verify that the medications bag is clearly identified with the participant's name. Do not open the medications bag or scan / transcribe medications until the participant has signed the informed consent.

If the response is "No, Some of them", go to Item 3 to make arrangements for those medications which were not brought and scan / transcribe those medications which were brought in Section B (MEDICATION RECORD).

If the response is “No, None of them”, proceed to the next item.

**Item 2**: Read the question as written.

2. Is this because you forgot, because you have not taken any medications at all in the last four weeks, or because you could not bring your medications?

Took no medication ..... ☐ → **End Form**
Forgot or was unable to bring medication .... ☐ → **GO TO SECTION C, ITEM 33**

If the response is “Took no medications” in the past four weeks, Section A ends here. Leave Section B (MEDICATION RECORD) blank. SAVE and CLOSE the form..

If the response is “Forgot or was unable to bring medications”, reassure the respondent and proceed to item 33.

**Items 3-4**: Read item 3 as written.

3. May we follow up on this after the visit so that we can get the information from the other medication labels? (Explain follow-up options)

Yes..... Y
No or not applicable ..... N → **Scan / transcribe what you can in Section B.** Attempt to convert refusals and indicate this on tracking form

If the participant agrees to follow-up, make arrangements for obtaining the information. Describe the method of follow-up in item 4. If the participant brought some medications, complete as much of Section B (MEDICATION RECORD) as possible before going on to Item 33.

In case of deliberate omission to bring medications to the field center, attempt participant conversion at the reception desk or a subsequent workstation. If participant conversion is to be attempted after reception, write a note to that effect on the tracking form. Leave Section B (MEDICATION RECORD) blank if no medications were brought in. Even if the participant declines to bring in (or provide medication names by telephone interview), attempt to complete as much of Section C (INTERVIEW) as possible. If the participant has not brought his / her medications, but remembers the medication name, strength and units of all medications taken during the previous four weeks with confidence, the interviewer should record this information, but arrange a follow-up to confirm its accuracy.

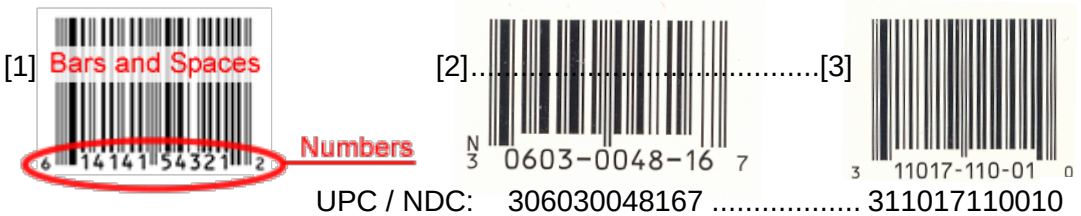
## B. MEDICATION RECORD

Section B (MEDICATION RECORD) is designed to document information about each medication used by participants. Over-the-counter supplements, minerals, and medications where precise dose and units are not available should be documented, where possible. Scanning / Transcription includes selecting the medication name from the medication suggestion list in section (a), and when that is not successful, recording the name in section (b), the strength in section (c), and the units in section (d) for each medication used within the four weeks prior to the interview.

**Medication Coding, Medication Name, Strength, and Units (Items 5-29a-d)**

**Overview**: Open the participant's medications bag and remove all medication containers. Separate the medications into those with and without a UPC-labeled container. Attempt to scan the UPC-labeled containers. Set aside containers that are scanned *successfully*. *Success* is when the medication name in the suggestion list matches the same information on the medication container. For medications that cannot be scanned successfully, transcribe the medication name into item (a). In each situation, select the matching medication name, strength, and units from the suggestion list to facilitate automatic data entry and coding. The original typed text does not need to be exactly correct or complete. Once the database offers the correct selection option, there is no need to continue typing, simply select the desired option from the list. Do not attempt to edit the entry once a selection is made. If a medication is selected in error, delete the entry and start again. If a matching strength and units are not found for a particular medication, select the nearest strength and units for the matching medication. If a matching medication name does not appear in the suggestion list, manually transcribe as much information as possible in sections [b-d]. For supplements, make one attempt at searching for the supplement in order to code it correctly. If not found, manually enter the medication name (b), the strength (c) and the units (d).

**Scanning**: A UPC bar code symbol is a pattern of black bars and white spaces, below (or above) which are twelve numbers. In example [1], the first six numbers—614141—comprise the globally unique company prefix assigned by the Uniform Code Council. The next five—54321—comprise the item reference. The last—2—is a computer-generated check digit used to verify accuracy. The symbol encodes all twelve numbers (collectively referred to as the Global Trade Item Number [GTIN]). In this context, we informally refer to the GTIN as a Universal Product Code (UPC). A ten- or eleven-digit National Drug Code (NDC), which by federal law is assigned to all pharmaceuticals sold in the U.S., is often represented within the UPC and recorded elsewhere on medication packaging. Several variations in UPC / NDC spacing, and hyphenation are illustrated in examples [2-3]. Scan the bar code symbol with the wand to capture the UPC / NDC. Rescan it as needed. Judge success of the scan by verifying that the medication name in the suggestion list matches the same information on the medication container.




| | | |
|---|---|---|
| UPC / NDC: | 306030048167 ..... | 311017110010 |
| Name: | Azo-Septic ..... | Dr. Scholl's Clear Away Plantar |
| Strength: | 95 ..... | 40 |
| Units: | MG | % |

**Transcription**: Transcribe all medications without a UPC-labeled container *and* those with a UPC-labeled container that cannot be scanned *successfully* (as defined above). As you type the first few alphanumeric characters of the medication name into item (a), suggested matches may appear in the drop-down list. Additional suggestions may appear as you type more. Start by typing 5 or 6 letters. If you do not see the medication you are looking for, continue typing to see if the system narrows down the list and finds the medication. If you are searching for a drug with multiple ingredients, it may help to switch the order of the ingredients (e.g., Lisinopril/hydrochlorothiazide is found, while hydrochlorothiazide/Lisinopril may not be found). If the medication name, strength, and units appear in the suggestion list and match the same information on the medication container, select them with the

mouse to facilitate automatic data entry and coding. If you see several identical medications in the list (with identical dose and units), you may select any of the medications that match the medication you are searching for. If you see the correct medication name but cannot find the identical dose and units, then select the nearest dose or units available. If you are searching for a combination medication and are unable to find it in the suggestion list, search for and enter the individual medications if you are able to find them. For example, if searching for amlodipine/atorvastatin 5/40 mg/mg but are not able to find it, you can search amlodipine 5mg and atorvastatin 40mg and enter these two medications separately. If a match does not appear in the suggestion list as you type the medication name, then you must transcribe in section (b) the complete medication name as written on the container. Medication labels may contain standard abbreviations (Table 1). In section (c), transcribe the numeric strength (weight for solids and concentration for non-solids). In section (d), transcribe the units that measure strength using a standard abbreviation (Table 3). Formatting and transcription standards are detailed below. If the strength and units are not available, set these to missing. To set an item to missing, click on the double arrows next to the item and click M. This will set the field status for the item to missing.

**Standard Format**: Beginning with item 5, use the search function to find the medication in item (a), or if not found, transcribe (b) medication name as written on the container, (c) numeric strength, and (d) standard units. If using the paper form, carefully transcribe medication name and units in UPPER CASE CHARACTERS (CAPITAL LETTERS). When necessary, use a period (.) to indicate the location of a decimal point in strength and a forward slash (/) to separate active ingredients of generic products, their respective strengths and units. In every case, transcribe in standard format even when the same information or a portion of the information appears in the previous item. Do not use ditto marks (") to indicate a repeat of the previous item. For any items left blank, make sure that the field does not contain any spaces, as spaces count as data in the field. Clear or delete all spaces in the blank field.

**Medication UPC / NDC (Items 5a-29a)**: Enter the medication name in (a) when it cannot be scanned *successfully* (as defined above) to search for the medication. Use the mouse to select the medication name, strength, and units from the drop down list that match the same information on the medication container. Do not attempt to edit the entry once a medication is selected. If a medication is selected in error, delete the entry and start again.

**Medication Name (Items 5b-29b)**: If a matching medication name, strength and units do not appear on the drop-down list, transcribe the medication name in (b) using a forward slash (/) to separate active ingredients of generic medications, but do not transcribe e.g. flavors, whether medications are sugar-free, or low-sodium. Since a few companies have trademarked their formulation (dosage form), the complete medication name may include it. Although we do not transcribe the number of pills dispensed, the prescribed dose, actual dose, or frequency of medications taken, medication names also may include numbers or characters that can be mistaken for number dispensed, dose or frequency. If in doubt, it is preferable to include questionable information in the medication name to facilitate identification, coding and classification. Therefore, transcribe all formulations, numbers and characters that may be part of the medication name. Examples are provided in Table 2. Standard abbreviations of medication names are provided in Table 1.

**Table 1. Standard abbreviations for medication names**

| Medication Name | Abbreviation | Medication Name | Abbreviation | Medication Name | Abbreviation |
|---|---|---|---|---|---|
| **A** Acetaminophen | APAP | Aluminum | AL | Amitriptyline | AMITRIP |
| Antibiotic | ANTIBIO | Antihistamine | ANTIHIST | Arthritic | ARTHR |
| Aspirin | ASA | Aspirin, phenacetin & caffeine | APC | Ammononium | AMMON |
| **B** Balanced Salt Solution | BSS | Buffered | BUF | | |
| **C** Caffeine | CAFF | Calcium | CA | Capsules | CAP |
| Carbonate | CARBON | Chewable | CHEW | Chlordiazepoxide | CHLORDIAZ |
| Chloride | CL | Chlorpheniramine | CHLORPHEN | Codeine | COD |
| Compound | CPD or CMP or CMPD | Concentrate | CON | | |
| **D** Decongestant | DECONG | Dextromethorphan | DM | Dioctylsodium sulfosuccinate | DSS |
| **E** Expectorant | EXP | Extra | EX | | |
| **F** Ferrous | FE | Fluoride | FL | Formula | FORM |
| **G** Gluconate | GLUCON | Glyceryl Guacolate | GG | Guaifenesin | GG |
| **H** Hydrochloride | HCL | Hydrochlorthiazide | HCTZ | Hydrocortisone | HC |
| Hydroxide | HYDROX | | | | |
| **I** Inhalation | INHAL | Injection | INJ | Intravenous | IV |
| **J** Junior | JR | | | | |
| **L** Laxative | LAX | Liquid | LIQ | Long acting | LA |
| Lotion | LOT | | | | |
| **M** Magnesium | MG | Maximum | MAX | Minerals | M |
| Multivitamins | MULTIVIT | | | | |
| **N** Nitroglycerin | NTGN | | | | |
| **O** Ointment | OINT | Ophthalmic | OPTH | | |
| **P** Penicillin | PCN | Pediatric | PED | Perphenazine | PERPHEN |
| Phenobarbitol | PB | Phenylephrine | PE | Phenylpropanolamine | PPA |
| Potassium | K | Potassium Chloride | KCL | Potassium Iodide | KI |
| Powder | PWD | Pyrilamine | PYRIL | | |
| **R** Reliever | REL | | | | |
| **S** Simethicone | SIMETH | Sodium | SOD | Solution | SOLN |
| Strength | STR | Suppository | SUPP | Suspension | SUSP |
| Sustained action | SA | Sustained release | SR | Syrup | SYR |
| **T** Tablets | TAB | Theophyllin | THEOPH | Therapeutic | T |
| Time disintegration | TD | | | | |
| **V** Vaccine | VAC | Vitamin | VIT | | |
| **W** With | W | | | | |

**Table 2. Examples of medication names that include special formulations, numbers or characters**

| Medication Name | |
|---|---|
| DILANTIN KAPSEALS* | ORTHO-NOVUM 10/11-28 |
| ASA ENSEALS† | STUARTNATAL 1 + 1 |
| ANACIN-3 | NPH ILETIN I |
| ACEROLA-C | SK-AMPICILLIN |
| TRIAMINIC-12 | CALTRATE 600 PLUS VITAMIN D |
| OVRAL-28 | HCTZ/TRIAMTERENE‡ |

*Kapseals = capsules. †Enseals = enteric-coated capsules. ‡The "/" separates HCTZ (hydrochlorothiazide) and triamterene, two active ingredients.

**Strength (Items 5c-29c)**: The strength of most solid medications is given in number of milligrams. Transcribe the numeric strength (weight for solids and concentration for non-solids) using a period (.) to indicate the location of a decimal point and a forward slash (/) to separate the strength of active ingredients of generic products (e.g. medication name = HCTZ/TRIAMTERENE, strength = 25/37.5).

**Units (Items 5d-29d)**: Transcribe the metric units that measure strength using one of the standard abbreviations in Table 3 (continuing the above example, units = MG/MG). Prior metric conversion of non-standard units (e.g. for liquids: 1 fluid ounce = 30 ML; 1 tablespoon = 15 ML; 1 teaspoon = 5 ML; and for solids: 1 grain = 65 MG; 1 ounce = 31 GM) may be necessary in unusual cases. Note that for insulin, strength is often given in number of units per milliliter (e.g. 100U/ML, 100/ML and U100). All three of these non-standard abbreviations are equivalent to the preferred format (strength = 100; units = UNIT/ML).

**Table 3. Standard abbreviations of metric units**

| Units | Standard Abbreviation | Units | Standard Abbreviation |
|---|---|---|---|
| Anti-Clotting Factor Xa International Units/Milliliter | A-XA IU/ML | Milligram/Drop | MG/DROP |
| Billion Cells of Lactobacilli | B CELL | Milligram/Gram | MG/GM |
| Bioequivalent Allergy Units/Milliliter | BAU/ML | Milligram/Inhalation‡ | MG/INH |
| Actuation* | ACT | Milligram/Hour | MG/HR |
| Enzyme-Linked Immunosorbent Assay Units/Milliliter | ELU/ML | Milligram/Milligram | MG/MG |
| Gram† | GM | Milligram/Milliliter | MG/ML |
| Gram/Dose | GM/DOSE | Milligram/Spray | MG/SPRAY |
| Gram/Gram | GM/GM | Milligram/Teaspoon§ | MG/TSP |
| Gram/Milliliter | GM/ML | Milliliter | ML |
| Kallikrien Inactivator Units/Milliliter | KIU/ML | Milliliter/Milliliter | ML/ML |
| Flocculation Units | LFU | Millimole | MMOLE |
| Megabecquerels/Milliliter | MBQ/ML | Millimole/Milliliter | MMOLE/ML |
| Microgram† | MCG | Million International Units | MIU |
| Microgram/Actuation | MCG/ACT | Million International Units/Milliliter | MIU/ML |
| Microgram/Hour | MCG/HR | Million Units | MU |
| Microgram/Inhalation‡ | MCG/INH | Million Units/Gram | MU/GM |
| Microgram/Milliliter | MCG/ML | Million Units/Milliliter | MU/ML |
| Microgram/Spray | MCG/SPRAY | Minim | MINIM |
| Microgram/Square Centimeter | MCG/SQCM | Minim/Milliliter | MINIM/ML |
| Millicuries/Milliliter | MCI/ML | Percent | % |
| Milliequivalent | MEQ | Plaque Forming Units/Milliliter | PFU/ML |
| Milliequivalent/Gram | MEQ/GM | Protein Nitrogen Units/Milliliter¶ | PNU/ML |
| Milliequivalent/Liter | MEQ/L | Unit | UNIT |
| Milliequivalent/Milligram | MEQ/MG | Unit/Actuation | UNIT/ACT |
| Milliequivalent/Milliliter | MEQ/ML | Unit/Gram | UNIT/GM |
| Milligram† | MG | Unit/Milligram | UNIT/MG |
| Milligram/Actuation | MG/ACT | Unit/Milliliter | UNIT/ML |

*Actuation = activation of a dispensing device. †1 GM = 1000 MG; 1 MG = 1000 MCG. ‡Of aerosolized powder. §Of e.g. powdered or granulated oral medications. ¶Of allergenic extracts.

**Combination Medications**: Combination medications contain multiple active ingredients (two or more medications in a single formulation). For example, consider a brand name combination of HCTZ 25 MG and TRIAMTERENE 37.5 MG called DYAZIDE. In the U.S., DYAZIDE is sold only in this fixed combination. Because fixed combination medications do not generally list a strength (c) or units (d), these fields may be left blank when transcribing them in (b) (i.e. medication name = DYAZIDE; strength = [blank] ; units = [blank]). In this case, items (c) and (d) should be marked as missing. Other combination medications are sold in more than one fixed combination. For example, consider a brand name combination of HCTZ and PROPRANOLOL called INDERIDE (LA). In the U.S., it is sold in many different combinations (HCTZ 25 or 50 MG and PROPRANOLOL 40, 80, 120 or 160 MG). Because variable combination medications generally list the strength and units, complete these fields when transcribing them (i.e. medication name = INDERIDE; strength =25/40 or 25/80; units = MG/MG; or medication name = INDERIDE LA; strength = 50/80, 50/120 or 50/160; units = MG/MG).

**Examples**: Feosol Iron Supplement Therapy 45 mg

| # | (a) Medication UPC / NDC | | | | | | | | | | | | Medication name (b) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5. | **3** | **4** | **9** | **6** | **9** | **2** | **9** | **4** | **1** | **6** | **0** | **5** | FEOSOL IRON SUPPLEMENT THERAPY |
| | (c) Strength | | | | | | (d) Units | | | | | | |
| | 45 | | | | | | MG | | | | | | |

Lipitor 10 mg

| # | (a) Medication UPC / NDC | | | | | | | | | | | | Medication name (b) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6. | **3** | **0** | **0** | **7** | **1** | **0** | **1** | **5** | **5** | **2** | **3** | **7** | LIPITOR |
| | (c) Strength | | | | | | (d) Units | | | | | | |
| | 10 | | | | | | MG | | | | | | |

Regular Strength Tylenol 325 mg

| # | (a) Medication UPC / NDC | | | | | | | | | | | | Medication name (b) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7. | **5** | **0** | **5** | **8** | **0** | **4** | **9** | **6** | **6** | **0** | | | REGULAR STRENGTH TYLENOL |
| | (c) Strength | | | | | | (d) Units | | | | | | |
| | 325 | | | | | | MG | | | | | | |

Neosynephrine Regular Strength ½ percent

| # | (a) Medication UPC / NDC | | | | | | | | | | | | Medication name (b) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8. | **3** | **0** | **0** | **2** | **4** | **1** | **3** | **5** | **3** | **0** | **1** | **0** | NEOSYNEPHRINE REGULAR STRENGTH |
| | (c) Strength | | | | | | (d) Units | | | | | | |
| | 0.5 | | | | | | % | | | | | | |

Metamucil 3.4 g per dose

| # | (a) Medication UPC / NDC | | | | | | | | | | | | Medication name (b) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9. | **0** | **3** | **7** | **0** | **0** | **0** | **7** | **4** | **0** | **7** | **8** | **0** | METAMUCIL |
| | (c) Strength | | | | | | (d) Units | | | | | | |
| | 3.4 | | | | | | G/DOSE | | | | | | |

Robitussin 100 mg per teaspoon

| # | (a) Medication UPC / NDC | | | | | | | | | | | | Medication name (b) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10. | **3** | **0** | **0** | **3** | **1** | **8** | **6** | **2** | **4** | **1** | **2** | **8** | ROBITUSSIN |
| | (c) Strength | | | | | | (d) Units | | | | | | |
| | 100/5 | | | | | | MG/ML | | | | | | |

Magnesium Citrate Solution 1.745 g per ounce

| # | (a) Medication UPC / NDC | | | | | | | | | | | | Medication name (b) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11. | **8** | **4** | **0** | **9** | **8** | **6** | **0** | **1** | **0** | **2** | **5** | **5** | MAGNESIUM CITRATE SOLUTION |
| | (c) Strength | | | | | | (d) Units | | | | | | |
| | 1.745/30 | | | | | | G/ML | | | | | | |

**Prioritizing Transcription**: Polypharmacy tends to increase with age, but even if a participant is using more than 25 medications, only 25 can be transcribed in items (5-29). Therefore, prioritize transcription if there are more than 25 medications. If it is clearly necessary to defer prioritization, transcribe the name (b), strength (c), and units (d) of additional medications on a sheet of paper Deferral may allow more effective prioritization based on the number and type of medications available for transcription. In any case, use the following algorithm to guide prioritization: [1] prescription medications; then [2] aspirin, aspirin-containing medications and non-steroidal anti-inflammatory drugs (e.g. Alka-Seltzer, headache powders, cold or arthritis medications, et cetera); followed by [3] other over-the-counter preparations; and finally [4] vitamins and food supplements.

**Preparing to Use the Medication Dictionary**: Before using the medication dictionary to look up a medication, first check the spelling of its transcribed name against its container's label. Verify that numbers referring to quantity dispensed, dose, or frequency were not inappropriately transcribed as part of the medication name because they should not be used in the matching process. Be aware that while some pharmacists use standardized abbreviations (Table 1, above), others do not. Also be aware that some medications use suffixes to distinguish between different combinations containing the same primary ingredient (Table 4).

**Table 4. Examples of medication suffixes used to distinguish combinations**

| Medication Name | 1° Ingredient | 2° Ingredients | |
|---|---|---|---|
| DARVON | propoxyphene hydrochloride | | |
| DARVON N | propoxyphene napsylate | | |
| DARVON W ASA | propoxyphene hydrochloride | aspirin | |
| DARVON CMPD | propoxyphene hydrochloride | aspirin | caffeine |

**Using the Medication Dictionary**: Use the dictionary to search for medications. For medication names containing more than one word, look for a match of the complete medication name in the dictionary. If the complete name matches, along with the strength and units, select that medication. If a complete match cannot be found, but the dictionary contains a single entry for the ingredient(s) in the medication (usually the first word of the medication name), and there are no other entries containing this word, select that item. This often occurs when [1] the brand *and* generic medication name are transcribed, but only one is in the dictionary; [2] the formulation of the medication is transcribed, but is not in the dictionary; [3] the manufacturer name is transcribed, but is not in the dictionary; or [4] words referring to other ingredients are transcribed, but are not in the dictionary or are in the dictionary in a different order (Table 5). If a medication name is not in the dictionary, do not guess at a match.

**Table 5. Examples of medication names that may not automatically populate sections [a-d]**

| Medication Name Transcribed As | Reason For Failure | Re-Transcribe As |
|---|---|---|
| CORDARONE/AMIODARONE | CORDARONE is the brand name for AMIODARONE | AMIODARONE |
| DIMETAPP ELIXIR | ELIXIR is the formulation | DIMETAPP |
| ECKERD ALLERGY RELIEF TABS | ECKERD is the manufacturer | ALLERGY RELIEF |
| TYLENOL NO. 3 | NO. 3 refers to another active ingredient (codeine) | APAP W CODEINE |

**Items 30-31**: Once all medications that can be successfully scanned or transcribed have been processed, count the total number of different medications (including those that cannot be successfully scanned or transcribed). Enter this number in Item 30. Count the actual medications to determine the total. Do not refer to the record numbers on the screen or form. Set aside loose pills, containers that are unmarked, unclearly labeled, or hold more than one medication (e.g. medisets), if necessary in consultation with another trained staff person, for later examination by a trained interviewer. Add the number of medications that you are unable to successfully scan or transcribe. Enter this number in Item 31. For example, if there were 7 medications in the bag, and you were able to successfully scan or transcribe 5 of them, Items 30 and 31 would be completed as follows:

30. Total number of medications in bag..... .....| 0 | 7 |

31. Number of medications unable to successfully scan or transcribe…| 0 | 2 |

**Items 32a,b**: The staff person scanning / transcribing the medications must enter their ARIC ID number in item 32a and the date of medication scanning / transcription in item 32b. Return the medications to their bag. If necessary, make a note on the Medication Survey form, and inform the participant that a trained interviewer will ask for help identifying loose pills and medications in containers that are unmarked, unclearly labeled, or hold more than one medication. Place the Medication Survey paper form (if appropriate) in the medication bag and take it to the workstation where the interview will be administered or to a secure place at the physical exam workstation. AT NO TIME SHOULD MEDICATIONS BE LEFT UNATTENDED IN THE RECEPTION AREA OR MEDICATION CONTAINERS BE OPENED IN THE ABSENCE OF THE PARTICIPANT.

**Identifying Unknown Medications**: Determine from Item 31 on the form at the end Section B whether there are any medications in the bag that were not successfully scanned or transcribed including loose pills, medications in containers that are unmarked, unclearly labeled, or hold more than one medication. With the help of the participant and a magnifying glass, read the imprint(s) on each unknown pill, then search [1] the *U.S. National Library of Medicine Pillbox* (http://pillbox.nlm.nih.gov/pillimage/search.php), or if necessary, [2] the *Drugs.com Pill Identifier* (http://www.drugs.com/imprints.php) to identify each pill from its imprint(s), shape, and / or color. If possible, record the medication name and strength and units. If the medication cannot be identified, record UNKNOWN and the imprint(s) under medication name (b) and draw two horizontal lines (=) through the boxes for item (a). If additional medications can be identified and recorded, adjust the total for item 31 accordingly. Thereafter, probe the participant about any other medications that may have been taken in the previous four weeks. For additional medications recalled by the participant, record with as much detail as possible the medication name (b), strength (c), and units (d). If there is any doubt, arrange for follow-up to obtain more accurate information from the participant.

During the remainder of the Medication Survey interview or during a subsequent interview, the participant may recall other medications taken during the past four weeks. Transcribe the medication name (b), strength (c) and units (d) of each just as if they had been in the medication bag. However, do not adjust the total for item 31. This documents that information on some medications was provided from the participant's memory.

## C. MEDICATION USE INTERVIEW

**Items 33a-l**: Following the transition statement provided, ask if medications were taken in the past four weeks for the twelve listed reasons. Synonyms that may be used in response to participant questions are listed below (Table 6).

**Table 6. Synonyms that may be used in response to participant questions about items 33a-k**

| Question text | Synonyms |
|---|---|
| a. Asthma | -- |
| b. Chronic bronchitis or emphysema | Chronic obstructive pulmonary (or lung) disease / COPD |
| c. High blood sugar | Diabetes |
| d. High blood pressure | Hypertension |
| e. High blood cholesterol | Hypercholesterolemia |
| f. Chest pain | Angina / heart pains |
| g. Abnormal heart rhythm | Arrhythmia / Fast or irregular heart rate or heart beats |
| h. Heart failure | Congestive heart failure or CHF / Not heart attack |
| i. Blood thinning | Anticoagulation / Deep vein thrombosis or DVT / Pulmonary embolism or PE |
| j. Stroke | Cerebrovascular accident or CVA |

| | |
|---|---|
| k. Mini-stroke | Slight stroke / Transient ischemic attack or TIA (< 24 hr) |
| l. Leg pain while walking | Claudication / Peripheral vascular disease or PVD |

For example, if the participant had taken medication for asthma and claudication and no other listed conditions, code item 33 as follows:

| | Yes | No | Unknown |
|---|---|---|---|
| a. Asthma | (Y) | N | U |
| b. Chronic bronchitis or emphysema | Y | (N) | U |
| c. High blood sugar or diabetes | Y | (N) | U |
| d. High blood pressure or hypertension | Y | (N) | U |
| e. High blood cholesterol | Y | (N) | U |
| f. Chest pain or angina | Y | (N) | U |
| g. Abnormal heart rhythm | Y | (N) | U |
| h. Heart failure | Y | (N) | U |
| i. Blood thinning | Y | (N) | U |
| j. Stroke | Y | (N) | U |
| k. Mini-stroke or TIA | Y | (N) | U |
| l. Leg pain while walking or claudication | (Y) | N | U |

If any of the conditions are answered affirmatively, be sure that the medication is recorded in Section B by asking “Did we include that medicine in the list I just transcribed?”. DO NOT ask the participant to identify which medication was used to treat any of the conditions. For example, if the participant reported taking a medication to lower blood pressure during the last four weeks (Item 33d), and no recognized antihypertensive medications were recorded in Section B, DO NOT probe to determine if the names of all medications taken during the last two weeks were recorded. If the participant indicates that the names of all his / her medications have been transcribed, DO NOT probe further to determine which medication was used to treat the high blood pressure. Regardless of whether the participant reported taking any medications during the past four weeks or whether they brought any medication to the field center, proceed with the next item.

Yes, all of them

No, some of them

No, none of them

# Q. 1

Took no medication

Forgot or was unable to bring medication

Q. 2