



OMB#: 0925-0281
Exp. 3/31/2014

MEDICATION SURVEY FORM

ID NUMBER:

FORM CODE:

DATE: 06/01/2011
Version 1.0

ADMINISTRATIVE INFORMATION

0a. Completion Date: / /
Month Day Year

0b. Staff ID:

A. Reception

“As you know, ARIC is recording all prescription and over-the-counter medications used by participants in the past four weeks, including cold and allergy medications, vitamins, herbal remedies, and other supplements. These medications include solid and non-solid formulations that you may swallow, inhale, apply to the skin or hair, inject, implant, or place in the ears, eyes, nose, mouth, or any other part of the body. The letter you received about this appointment included a plastic bag for all your current medications and asked you to bring them to the clinic.”

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

- Yes, all of them → **GO TO SECTION B, QUESTION 5**
- No, some of them → **GO TO SECTION A, QUESTION 3**
- No, none of them

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..... → **GO TO SECTION C, QUESTION 34**
- Forgot or was unable to bring medication

“That’s all right. Since the information on medications is so important, we would still like to ask you about it during the interview.”

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.....
- No or not applicable .. → **Scan/transcribe what you can in Section B and attempt to convert refusals; indicate this on tracking form.**

4. Describe method of follow-up to be used: _____

B. Medication Record

Copy the MEDICATION UPC / NDC from each medication label. For each medication, begin with the left most space in fields a-c and the rightmost space in field d. Using upper case letters, carefully copy the MEDICATION NAME. Using periods to indicate decimal points, copy the formulation STRENGTH (weight for solids and concentration for nonsolids). Using upper case letters and standard abbreviations, copy the UNITS used to measure strength. For combination medications, use a forward slash (/) to separate active ingredients, corresponding strengths, and units.

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30. Total number of medications in bag

31. Number of medications in bag unable to successfully scan or transcribe

32. Staff ID number of person scanning / transcribing medications

a. Scanner / transcriber (items 5-29):

b. Date of scanning / transcription: / /
Month Day Year

C. Medication Use Interview

“Now I would like to ask about a few specific medications.”

33. Were any of the medications you took during the last four weeks for: *(If “Yes”, verify that the medication NAME is on the medication record.)*

	Yes	No	Unknown
a. Asthma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Chronic bronchitis or emphysema	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. High blood sugar or diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. High blood pressure or hypertension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. High blood cholesterol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Chest pain or angina	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Abnormal heart rhythm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Heart failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- i. Blood thinning
- j. Stroke
- k. Mini-stroke or TIA
- l. Leg pain while walking or claudication

34. During the last four weeks, did you take any aspirin or aspirin-containing products including Alka-Seltzer, cold and allergy medication or headache powder? This **excludes** acetaminophen (e.g., Tylenol), ibuprofen (e.g., Advil, Motrin or Nuprin), and naproxen (e.g., Aleve).

Show participant List #1: Commonly Used Aspirin or Aspirin-Containing Products

Yes
 No → **GO TO QUESTION 37**

35. How many days during the last four weeks did you take aspirin or aspirin-containing medication?

Number of days *If "00" → **GO TO QUESTION 37***

36. For what purpose are you taking aspirin? (*Interviewer: Do NOT read choices.*)

Participant mentioned avoiding heart attack or stroke
 Participant did not mention avoiding heart attack or stroke

37. During the past four weeks, did you take any [other] medication for arthritis, fever, or muscle aches and pains, or cramps? (*Read bracketed "other" unless no medications were reported.*)

Yes
 No

38. **Excluding** aspirin, acetaminophen (eg., Tylenol), and corticosteroids (e.g., prednisone), are you NOW taking other anti-inflammatory or arthritis medications on a regular basis? Common examples are shown on this list.

Show participant List #2: Commonly Used Non-Steroidal Anti-Inflammatory Drugs, NSAIDS

Yes
 No

D. Medication Adherence

The following statement should be read to patients prior to starting with Item 39.

“We realize that most patients take many medicines. This may make it difficult to take your medicines perfectly every day. The next set of questions will help us understand the reasons that may keep a patient from always taking their medicines as they should.”

39. How do you pay for your medications? (Check all that apply)

- a. Medicare Part D (co-pay included)
- b. Medicaid (co-pay included)
- c. Veteran Administration (VA) (co-pay included)
- d. Prescription assistance programs (co-pay included)
- e. Other public programs (co-pay included)
- f. Private or employer insurance (co-pay included)
- g. No coverage (self-pay only, entirely out-of-pocket)

“Now I am going to ask you four questions. Think about how you have taken your medications during the past four weeks when answering the next four questions.”

40. Do you ever forget to take your medicines?

- Yes
- No

41. Are you careless at times about taking your medicines?

- Yes
- No

42. When you feel better, do you sometimes stop taking your medicines?

- Yes
- No

43. Sometimes if you feel worse when you take your medicines, do you sometimes stop taking them?

- Yes
- No

44. In the past four weeks, how often have you “stretched” (taken less of) your medicines to make them last longer?

- Often
- Sometimes
- Rarely
- Never

45. In the past four weeks, how often have you run out of your medicines?

- Often
- Sometimes
- Rarely
- Never

46. In the past four weeks, how often have you missed taking your medicines?

- Often
- Sometimes
- Rarely
- Never

47. What percent of the time have you taken your medications in the past four weeks? We would be surprised if this was 100% for most people. For example, 0% means you have taken no medication, 50% means you have taken half your medication, and 100% means you have taken every single dose of medication.

If "100" → **GO TO END**

48. What were the reasons for not taking your medications all the time? Check all that apply:

- a. Could not afford
- b. Lack of transportation
- c. Memory/cannot remember to take medications
- d. Ran out of medicine
- e. Directions too confusing
- f. Felt better
- g. Felt worse
- h. Too complicated
- i. Scared of side effects
- j. Don't believe drug(s) will help me
- k. Other



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: Data Entry System [DES] manual and the "General Instructions for Completing Paper Forms"). Paper data entry and subsequent keying will only be used in the event of equipment malfunction or DES 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?

- Yes, all of them Y → **Go to Section B Item 5**
- No, **Some** of them S → **Go to Section A, Item 3**
- No, **None** 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 medications T → **Go to Section C, Item 34**
Forgot or was unable to bring medications F

If the response is “Took no medications” in the past four weeks, Section A ends here. Leave Section B (MEDICATION RECORD) blank and skip to INTERVIEW, Section C (field or screen forward). Item 33 is left blank, and the interviewer continues administering items 34-43, either at the reception desk or a subsequent workstation.

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

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)

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

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. Scanning / Transcription includes recording the medication UPC / NDC bar code or selecting from the medication drop down 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 UPC / NDC, 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, strength and units in the drop-down list match the same information on the medication container. For medications in UPC-labeled containers that cannot be scanned *successfully* (as defined above), transcribe the UPCs. When UPCs are not available or cannot be transcribed *successfully*, transcribe NDCs. When UPCs and NDCs are not available or cannot be transcribed *successfully*, transcribe medication names. In each situation, select the matching medication name, strength, and units from the drop-down list to facilitate automatic data entry and coding. If a matching medication name, strength and units do not appear on the drop-down list, manually transcribe as much information as possible in sections [b-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, strength, and units in the drop-down list match the same information on the medication container.

[1] Bars and Spaces	[2]	[3]
Numbers		
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). Specifically, in section (a), transcribe the unsuccessfully scanned UPC, if possible. If the UPC cannot be transcribed *successfully*, transcribe the NDC in section (a). The NDC is often recorded elsewhere on the medication packaging. If the NDC cannot be transcribed *successfully*, transcribe the medication name. As you type the first few alphanumeric characters of the UPC / NDC or medication name, suggested matches may appear in the drop-down list. Additional suggestions may appear as you type more. If the medication name, strength, and units appear in the drop-down list and match the same information on the medication container, select them with the mouse to facilitate automatic data entry and coding. If a match does not appear in the drop-down list as you type the UPC / NDC or 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.

Standard Format: Beginning with item 5, transcribe all parts of (a) the numeric UPC / NDC, (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.

Medication UPC / NDC (Items 5a-29a): Transcribe the UPC / NDC in (a) when it cannot be scanned *successfully* (as defined above). Be sure to transcribe the first and last numbers of the UPC which may be found in the lower (middle or upper) left and right regions of the UPC bar code symbol (e.g. 6 and 2 in example [1], above). If the medication UPC/NDC is in the coding database, it will appear in the drop-down list. If the medication UPC / NDC does not appear in the drop-down list, transcribe the medication name in (a) and 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.

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	ANTI HIST	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	Diocytlsodium 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	OPHTH		
P Penicillin	PCN	Pediatric	PED	Perphenazine	PERPHEN
Phenobarbitol	PB	Phenylephrine	PE	Phenylpropanolamine	PPA
Potassium	K	Potassium Chloride	KCL	Potassium Iodide	KI
Powder	PWD	Pyrimamine	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 "r" 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
Kallikrein 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 DYZIDE. In the U.S., it 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 = DYZIDE; strength = [blank] ; units = [blank]). 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 UPC / NDC (a), 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.

The Medication Dictionary: For reference, paper versions of the Medication Dictionary will be distributed to each Field Center. The dictionary lists medication names (trade / brand and generic ingredient) in alphabetical order. Medication names that begin with a number, ditto ("), or a hyphen (-) are listed first. If a medication name is separated by a hyphen (-), the portion of the name preceding the hyphen is listed in alphabetical order. Strength and units are not included in the dictionary, so only use the numbers appearing in it to differentiate between medications.

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 as needed to look up medications (that when scanned or transcribed) do not automatically populate section (a) with an appropriate match or list of potential matches from which to choose. 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, enter the corresponding UPC. 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 the corresponding UPC. 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. Simply set the status code to Q (questionable) so that the Collaborative Coordinating Center can investigate.

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	ELIXER 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 can not 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 participant's help, read the imprint(s) on each unknown pill, then search [1] the *Facts and Comparisons Drug Identifier* on your computer, or if necessary, [2] the *Ident-A-Drug, Reference* on the web (www.identadrug.com; username= ; password=) to identify each pill from its imprint(s), shape, and / or color. If possible, record the UPC / NDC (a) or medication name (b) and if not transcribed *successfully* (as defined above), its strength (c) and units (d). 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 the UPC / NDC (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), and if not automatically linked to information in sections [c-d] that matches information provided by the participant, 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 UPC (a), 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 / <u>Not</u> 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 two weeks (Item 33a), 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.

Item 34: If skipping in from item 2, preface this question with an explanation e.g. “I know you said you took no medications, but we include the next few questions as a memory jogger.” Ask this question as worded and show participant List #1: Commonly Used Aspirin or Aspirin-Containing Medications. Although its primary purpose is to identify participants who are taking aspirin, item 34 is broadly constructed to include aspirin and other medications which may contain aspirin but are not necessarily

labeled as aspirin, such as "Alka-Seltzer, cold medicine or headache powder". Therefore, this question may identify persons taking medications that do not include aspirin. With a positive response, continue with item 35 and verify that the relevant information on the medication(s) was recorded in Items 5-29. If the response is NO or UNKNOWN, skip to item 37.

Item 35: Item 35 is narrower in scope and refers specifically to aspirin or aspirin-containing medications that have been taken within the four weeks preceding the clinic visit. Record the number of days in this four week period (maximum of 28 days) that aspirin or aspirin-containing medications were taken. If no aspirin or aspirin-containing medications were taken, enter "00" and skip to Item 37.

Item 36: Ask item 36 as written, but DO NOT read the choices. If the participant mentions avoiding heart attack or stroke as part of his / her response, record "H." Participants could be following the advice of their provider of medical care in doing this, or they could be acting on their own, based on information obtained through the media, friends or other sources. If the participant mentions "blood thinning" or avoiding blood clots as the reason for taking aspirin, record "H". If neither a heart attack nor stroke is mentioned, record "O", even if the aspirin were prescribed by a physician.

Item 37: Read item 37 to all participants following the instructions provided at the end of the question, i.e., read the bracketed "other" if the response to Item 34 were positive. The use of analgesic and anti-inflammatory medications that do not contain aspirin is verified in items 37 and 38 because these medications (like aspirin) may affect some of the hemostasis tests. With a positive response, confirm whether the reported medications are transcribed in Section B.

Item 38: Read item 38 to all participants and show them List #2: Commonly Used Non-Steroidal Anti-Inflammatory Drugs (NSAIDS), the most common, non-aspirin-containing treatments for arthritis. Item 38 excludes acetaminophen (e.g. Tylenol) and aspirin (as separate entities) as well as steroids. This item focuses on current, regular use (NOW) of NSAIDS, regardless of the reason for their use. If asked by the participant, "regular" is defined as at least once a week for several months. With a positive response, again confirm whether the reported medications are transcribed in Section B.

D. MEDICATION ADHERENCE

Section D (MEDICATION ADHERENCE) is designed to ascertain if the participant is non-adherent with medications, to determine the degree of non-adherence, and to identify the factors influencing non-adherence.

Item 39: Read item 39 to all participants to assess how they pay for their medication. Many participants may use more than one method of payment, so it is important to encourage them to indicate all methods that apply to them. [For payment options that require a copay \(eg, Medicare Part D, Medicaid, etc.\), the copay is implied so an additional option will not be selected unless an additional method other than cash is used \(eg, Medicare Part D plus Other public programs\).](#) A participant may not have any medication coverage in which case the last option "No coverage (self-pay only, entirely out-of-pocket)" applies.

Items 40-43: The opening to item 40 also applies to items 41-43. Read it as written to all participants, emphasizing "the past four weeks" and directing participants to reflect on the same period when responding "Yes" or "No" to each item. All of the items were extracted from a validated questionnaire routinely used to assess medication adherence. [During the questioning, if a patient suggests that they take "too much" medication \(i.e., more than prescribed\) rather than too little, ask the patient if he/she has been instructed by a health care provider to take more medication \(eg, double your diuretic dose if you gain weight or have swelling\).](#) If the patient replies that they did take "too much" without being

instructed to do so by their physician then, select “Yes” for Question #41 (“Are you careless at times about taking your medicines?”).

All medication adherence questions (questions 40-48) refer to medications prescribed by a physician

Items 44-46: These items use Likert-type responses (often/sometimes/rarely/never) to assess whether participants have “stretched”, “run out” or “missed” medication. As with items 40-43, emphasize “the past four weeks” and direct participants to reflect on the same period when answering the questions.

Item 47: Read this question and the statements that follow it to all participants. Together, they direct participants to estimate the percentage of time that they have taken their medication (between 0% and 100%). It is particularly important to read the statements about the meaning of various percentages to each participant. Record the response given by the participant as a number in the boxes. If the response is “100%”, record 100 in the boxes and skip item 48.

Item 48: Read this final question about reasons for medication non-adherence to participants. Make sure that you encourage each participant to select all reasons that apply because most participants will have multiple reasons for not taking medications.

List #1: Commonly Used Aspirin-Containing Medications (3 page list, page 1)

1/2HALFPRIN	ASPIRIN / ANTACID
ACETAMINOPHEN / MAGNESIUM SALICYLATE / CAFFEINE	ASPIRIN / CAFFEINE
ACETAMINOPHEN / SALICYLAMIDE	ASPIRIN / ACETAMINOPHEN / CAFFEINE
	ASPIRIN / ALUMINUM HYDROXIDE / MAGNESIUM HYDROXIDE / CALCIUM CARBONATE
ACETAMINOPHEN / SALICYLAMIDE / CAFFEINE	ASPIRIN / ALUMINUM HYDROXIDE / MAGNESIUM HYDROXIDE
ACETAMINOPHEN / SALICYLAMIDE / PHENYLTOLOXAMINE	ASPIRIN / ACETAMINOPHEN / CAFFEINE / CALCIUM GLUCONATE
ACETYL SALICYLIC ACID	ASPIRIN / ACETAMINOPHEN / SALICYLAMIDE / CAFFEINE
ADDED STRENGTH HEADACHE R	ASPIRIN / CAFFEINE
ADDED STRENGTH PAIN RELIE	ASPIRIN / CAFFEINE / BUTALBITAL
ADPRIN B	ASPIRIN / CA CARBONATE
ADULT STRENGTH ANALGESIC	ASPIRIN / CINNAMEDRINE / CAFFEINE
ADULT STRENGTH PAIN RELIE	ASPIRIN / SALICYLAMIDE / CAFFEINE
AF-MIGRAINE	ASPIR-LOW
ALBERTSON'S EFFERVESCENT	ASPIR-MOX
ALBERTSON'S ENTERIC COATE	ASPIRTAB
ALBERTSON'S HEADACHE FORM	ASPIR-TRIN
ALKA-SELTZER	ASPRIDROX
AMIGESIC	BACK PAIN-OFF
ANABAR	BACKACHE MAXIMUM STRENGTH
ANACIN	BACKACHE RELIEF EXTRA STR
ANALGESIC	BAYER LOW STRENGTH
ACETAMINOPHEN / SALICYLAMIDE / PHENYLTOLOXAMINE / CAFFEINE	BAYER PLUS EXTRA STRENGTH
ARTHRITIS PAIN FORMULA	BC
ARTHRITIS STRENGTH BC	BL MIGRAINE FORMULA
ARTHROPAN	BUFFASAL
ASA	BUFFERIN
ASCRIPTIN	BUFPIRIN
ASP	BUTALBITAL / ASA / CAFFEINE
ASPERGUM	BUTALBITAL / ASPIRIN / CAFFEINE
ASPIR-81	BUTALBITAL COMPOUND
ASPIRCAF	CETAZONE-T
ASPIRIN	CHOLINE / MAGNESIUM SALICYLATES
ASPIRIN GUM	CHOLINE MAGNESIUM TRISALICYLATE
ASPIRIN / DIPHENHYDRAMINE EFFERVESCENT	

List #1: Commonly Used Aspirin-Containing Medications (3 page list, page 2)

CHOLINE SALICYLATE	GENACOTE	OSCO ADDED STRENGTH PAIN
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CMT	GOODY'S	OSCO ANALGESIC ADULT STRE
COPE	HALFPRIN	OSCO EFFERVESCENT ANTACID
CVS BACKACHE RELIEF	HCA PAIN RELIEVER	OSCO LOW STRENGTH ENTERIC
CVS EFFERVESCENT ANTACID	HEADACHE FORMULA ADDED ST	P-A-C
CVS HEADACHE RELIEF	HEADACHE RELIEF	PAIN RELIEF
CVS MIGRAINE RELIEF	HEADRIN EX STRENGTH PAIN	PAIN RELIEF EXTRA STRENGT
DEWITT'S PILLS	HM ADULT ANALGESIC	PAIN RELIEF EXTRA STRENGT
DIFLUNISAL	LEVACET	PAIN RELIEVER ADDED STREN
DISALCID	LOBAC	PAIN RELIEVER PLUS
DOAN'S	MAGAN	PAINAID
DOLOBID	MAGNAPRIN	PAIN-OFF
DOLOREX	MAGNESIUM SALICYLATE	PANRITIS FORTE
DURABAC	MAGNESIUM SALICYLATE / ACETAMINOPHEN	PHENYLTOLOXAMINE / MAGNESIUM SALICYLATE
DURAXIN	MAGNESIUM SALICYLATE / DIPHENHYDRAMINE	PIROSAL
EASPRIN	MAG-PHEN	QC PAIN RELIEVER PLUS
ECASA	MAGSAL	RA ANTACID PAIN RELIEF
ECK MIGRAINE RELIEF	MEDI-SELTZER	RA MIGRAINE RELIEF
ECOTRIN	MEPROBAMATE / ASPIRIN	RID-A-PAIN COMPOUND
ECPIRIN	MIDOL MAXIMUM STRENGTH	SALETO
ED-FLEX	MIGRAINE FORMULA	SALICYLAMIDE / CAFFEINE
EFFERVESCENT ANTACID / PAIN	MIGRAINE RELIEF	SALFLEX
EFFERVESCENT PAIN RELIEF	MINITABS	SALSALATE
EFFERVESCENT PAIN RELIEVE	MOBIDIN	SAV-ON ADDED STRENGTH PAI
EQUAGESIC	MOBIGESIC	SAV-ON ANALGESIC ADULT ST
EXCEDRIN	MOMENTUM MUSCULAR BACKACH	SAV-ON BACKACHE RELIEF EX
EX-PAIN	MONO-GESIC	SAV-ON EFFERVESCENT ANTAC
EXTRA STRENGTH BAYER	MP ENCOPRIN	SB BACKACHE EXTRA STRENGT
EXTRAPRIN	MP REGRIPRIN	SB EFFRSCENT ANTACID/PAIN
FARBITAL	MST 600	SB LOW DOSE ASA EC
FIORINAL	MYOGESIC	SB MENSTRUAL
FORTABS	NEUTRALIN	SB PAIN RELIEF F/ACT
FRENADOL	NINOPRIN	SB PAIN RELIEF X-STR
GENACED	NOVASAL	SG EFFERVESCENT ANTACID/P

List #1: Commonly Used Aspirin-Containing Medications (3 page list, page 3)

SG PAIN RELIEVER ADDED ST	SUPAC	UNI-TREN
SM HEADACHE ADDED STRENGT	SUPER STRENGTH PAIN RELIE	VANQUISH
SM HEADACHE PAIN RELIEVER	SUREPRIN	V-R EFFERVESCENT PAIN REL

SOBA ANALGESIC
SOBA PAIN RELIEVER HEADAC
SODIUM SALICYLATE
ST JOSEPH ADULT
STANBACK

TETRA-MAG
THERAPY BAYER
THIOCYL
TRICOSAL
TRILISATE

ZEE-ZELTZER
ZORPRIN

List #2: Commonly Used Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

ACTRON	KETOPROFEN
ADDAPRIN	KETOROLAC
ADVANCED PAIN RELIEF	LANSOPRAZOLE / NAPROXEN
ADVIL	LODINE
ALEVE	MECLOFENAMATE
ALL DAY RELIEF	MEDI-PROFEN
ANAPROX	MEDIPROXEN
ANSAID	MEFENAMIC ACID
ARTHROTEC	MELOXICAM
BEXTRA	MENADOL
CATAFLAM	MIDOL
CELEBREX	MOBIC
CELECOXIB	MOTRIN
CLINORIL	NABUMETONE
CVS INFANTS' CONCENTRATED	NALFON
DAYPRO	NAPRELAN
DICLOFENAC	NAPROSYN
DICLOFENAC / MISOPROSTOL	NAPROXEN
DYSPEL	NUPRIN
ELIXSURE	ORUDIS
ETODOLAC	ORUVAIL
FELDENE	OXAPROZIN
FENOPROFEN	PHENYLBUTAZONE
FLURBIPROFEN	PIROXICAM
GENPRIL	PONSTEL
HALTRAN	PREVACID / NAPRAPAC
IBU	PROFEN
IBU-DROPS	PROVIL
IBUPROFEN	Q-PROFEN
IBUTAB	RELAFEN
INDOCIN	ROFECOXIB
INDOMETHACIN	RUFEN
I-PRIN	SULINDAC
TAB-PROFEN	VALDECOXIB
TOLECTIN	VIOXX
TOLMETIN	VOLTAREN
TORADOL	
