

2017 National Hospital Ambulatory Medical Care Survey (NHAMCS) Data for Dementia Research

Support

The Center to Accelerate Population Research in Alzheimer's (CAPRA) at the University of Michigan is supported by National Institute on Aging of the National Institutes of Health (award No. P30 AG066582).

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Overview of the data files

This data dictionary is for the three NHAMCS_cog_2017_XXX files, which include STATA, SAS, and CSV file formats.

The NHAMCS_cog_2017 dataset includes data from the National Hospital Ambulatory Medical Care Survey (NHAMCS) Emergency Department (ED) file. Each row of data in the NHAMCS ED file represents a single patient-visit to an ED. Truncated ICD-10 codes from the DIAG1-DIAG5 variables were used to identify patient-visits where the patient was diagnosed with Alzheimer's disease and related dementias (ADRD). This dataset also includes demographic variables (e.g., age, sex, race), visit- and ED-level weights, strata, and PSU, as well as Reason for Visit codes. Some of these variables were recoded in the following ways:

1. Where applicable, variables from the original dataset were recoded, such that answers of "Not applicable" and "Blank" were set to be missing in this dataset
2. Binary variables were re-coded such that no=0 and yes=1 (e.g., `sex` [1=female, 2=male] was re-coded into the variable `female` [0=no/male, 1=yes/female])
3. Variables that were re-coded include the name of the original NHAMCS variable in the description to allow users to easily look up the original question text and categories in the NHAMCS documentation
4. For STATA users, all variable names have been converted to lowercase

For identifying cognitive impairment/ADRD, the variable `cog_dx` was created to flag patient-visits with an ADRD or other cognitive impairment diagnosis where the diagnosis was NOT flagged as probable, questionable, or ruleout. The variables `cog_dx_code1` through `cog_dx_code5` were created to show users which ICD-10 code was identified as diagnosing ADRD. The variable `any_cog` was created to flag instances where either `alzhd` = 1 or `cog_dx` = 1. `alzhd` is a variable created by NHAMCS and indicates if a patient has Alzheimer's disease regardless of diagnosis for the visit.

Brief and detailed summaries of the variable names, types, descriptions, and mean, minimum, and maximum values are included below. Descriptions of each recoded variable in this dataset include the original NHAMCS variable name. Original variable names, question text, and categories can be found on the NHAMCS Website (https://www.cdc.gov/nchs/ahcd/datasets_documentation_related.htm).

Users of this resource should be familiar with complex survey design and appropriately apply the sample weights, strata, and primary sampling units for any analyses. `patwt` should be used for patient-visit-level analyses; `edwt` should be used for ED-level analyses.

Brief summary of all variables (unweighted)

Variable	Obs	Unique	Mean	Min	Max	Label
year	16709	1	2017	2017	2017	Calendar year
id	16709	407	154.0308	2	408	Visit ID - concatenation of hospcode and patcode
hospcode	16709	203	103.8768	1	203	Hospital number
patcode	16709	213	50.15405	1	213	Patient code
region	16709	4	2.611766	1	4	Geographic region
age	16709	94	37.3461	0	93	Patient age in years
ager	16709	6	3.082471	1	6	Age recode
age65	16709	2	.1581782	0	1	Patient is age 65 or older. 1/0
female	16709	2	.5476091	0	1	Recode of sex: Patient is female. 1/0
racereth	16709	4	1.668322	1	4	RACER and ETHNIC combination
paytyper	14993	7	2.494431	1	7	Recoded primary expected source of payment for...
payer	14993	4	1.860468	1	4	recode of paytyper: source of payment
totchron	16498	12	1.137532	0	11	Total number of chronic conditions
rfv1	16690	537	23069.63	10050	89990	Patient's complaint, symptom, or other reason ...
rfv2	11062	578	21700.62	10050	89990	Patient's complaint, symptom, or other reason ...
rfv3	6830	540	20929.8	10050	89980	Patient's complaint, symptom, or other reason ...
rfv4	3805	460	21257.62	10050	89990	Patient's complaint, symptom, or other reason ...
rfv5	1956	367	21882.62	10050	89990	Patient's complaint, symptom, or other reason ...
diag1	16709	1398	.	.	.	Diagnosis #1
diag2	16709	1255	.	.	.	Diagnosis #2
diag3	16709	961	.	.	.	Diagnosis #3
diag4	16709	747	.	.	.	Diagnosis #4
diag5	16709	533	.	.	.	Diagnosis #5
prdiag1	16647	2	.0024028	0	1	For diagnosis 1, is this probable, questionabl...
prdiag2	9339	2	.0072813	0	1	For diagnosis 2, is this probable, questionabl...
prdiag3	5047	2	.0067367	0	1	For diagnosis 3, is this probable, questionabl...
prdiag4	2878	2	.0048645	0	1	For diagnosis 4, is this probable, questionabl...
prdiag5	1690	2	.0047337	0	1	For diagnosis 5, is this probable, questionabl...
alzhd	16709	2	.0132863	0	1	Does patient have: Alzheimer's disease/Dementia
cog_dx	16709	2	.0088575	0	1	indicator: any cognition-related diagnosis. 1/0
any_cog	16709	2	.0178347	0	1	any cognition-related diagnosis (cog_dx=1) or ...
cog_dx_code1	60	2	.	.	.	identified cognition-related ICD-9 / ICD-10 di...
cog_dx_code2	37	2	.	.	.	identified cognition-related ICD-9 / ICD-10 di...
cog_dx_code3	30	2	.	.	.	identified cognition-related ICD-9 / ICD-10 di...
cog_dx_code4	14	2	.	.	.	identified cognition-related ICD-9 / ICD-10 di...
cog_dx_code5	10	2	.	.	.	identified cognition-related ICD-9 / ICD-10 di...

settype	16709	1	3	3	3	Setting type
cstratm	16709	8	3.14e+07	2.01e+07	4.04e+07	Clustered CSTRATM -- masked
cpsum	16709	117	44307.32	1	100199	Clustered CPSUM -- masked
patwt	16709	260	8317.515	104.4585	44275.79	Patient visit weight
edwt	203	188	25.52702	2.09691	158.7342	ED weight

Detailed summary of all variables (unweighted)

year	Calendar year
------	---------------

type: numeric (int)

range: [2017,2017] units: 1

unique values: 1 missing .: 0/16,709

tabulation: Freq. Value

16,709 2017

id	Visit ID - concatenation of hosPCODE and patCODE
----	--

type: numeric (int)

range: [2,408] units: 1

unique values: 407 missing .: 0/16,709

mean: 154.031

std. dev: 68.1521

percentiles:	10%	25%	50%	75%	90%
	62	102	155	204	242

hosPCODE	Hospital number
----------	-----------------

type: numeric (int)

range: [1,203] units: 1

unique values: 203 missing .: 0/16,709

mean: 103.877

std. dev: 58.0238

percentiles:	10%	25%	50%	75%	90%
	24	55	104	156	184

patcode

Patient code

type: numeric (int)

range: [1,213]

units: 1

unique values: 213

missing .: 0/16,709

mean: 50.154

std. dev: 33.7631

percentiles:	10%	25%	50%	75%	90%
	9	22	46	74	96

region

Geographic region

type: numeric (byte)

label: REGIONF

range: [1,4]

units: 1

unique values: 4

missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
	2,777	1	Northeast
	4,148	2	Midwest
	6,569	3	South
	3,215	4	West

age

Patient age in years

type: numeric (byte)

label: AGEF, but 92 nonmissing values are not labeled

range: [0,93] units: 1
unique values: 94 missing .: 0/16,709

examples: 15
28
43
60

ager Age recode

type: numeric (byte)
label: AGERF

range: [1,6] units: 1
unique values: 6 missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
	3,331	1	Under 15 years
	2,309	2	15-24 years
	4,728	3	25-44 years
	3,698	4	45-64 years
	1,278	5	65-74 years
	1,365	6	75 years and over

age65 Patient is age 65 or older. 1/0

type: numeric (byte)
label: NOYESF

range: [0,1] units: 1
unique values: 2 missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
	14,066	0	No

2,643 1 Yes

female

Recode of sex: Patient is female. 1/0

type: numeric (byte)

label: NOYESF

range: [0,1]

units: 1

unique values: 2

missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
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7,559	0	No
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9,150	1	Yes
-------	---	-----

racereeth

RACER and ETHNIC combination

type: numeric (byte)

label: RACERETHF

range: [1,4]

units: 1

unique values: 4

missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
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9,315	1	Non-Hispanic White
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4,271	2	Non-Hispanic Black
-------	---	--------------------

2,473	3	Hispanic
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650	4	Non-Hispanic Other
-----	---	--------------------

paytyper

Recoded primary expected source of payment for this visit (based on hierarchy)

type: numeric (byte)

label: PAYTYPERF

range: [1,7]

units: 1

unique values: 7 missing .: 1,716/16,709

tabulation:	Freq.	Numeric	Label
	4,293	1	Private insurance
	2,971	2	Medicare
	6,039	3	Medicaid or CHIP or other state-based program
	123	4	Worker's compensation
	1,179	5	Self-pay
	56	6	No charge/Charity
	332	7	Other
	1,716	.	

payer recode of paytyper: source of payment

type: numeric (byte)

label: payerlbl

range: [1,4] units: 1

unique values: 4 missing .: 1,716/16,709

tabulation:	Freq.	Numeric	Label
	4,293	1	Private insurance
	9,010	2	Medicare/Medicaid/CHIP
	1,179	3	Self-pay
	511	4	Other
	1,716	.	

totchron Total number of chronic conditions

type: numeric (byte)

label: TOTPROCF, but 12 nonmissing values are not labeled

range: [0,11] units: 1

unique values: 12 missing .: 211/16,709

examples: 0
0
1
2

rfv1 Patient's complaint, symptom, or other reason for visit #1 - detailed category

type: numeric (long)
label: RFVF

range: [10050,89990] units: 1
unique values: 537 missing .: 19/16,709

examples: 12050 Convulsions
15001 Toothache
18600 Skin rash
31300 General psychiatric or psychological ...

rfv2 Patient's complaint, symptom, or other reason for visit #2 - detailed category

type: numeric (long)
label: RFVF

range: [10050,89990] units: 1
unique values: 578 missing .: 5,647/16,709

examples: 14150 Shortness of breath
17651 Vaginal pain
54300 Contusion/abrasion/bruise, site unspe...
.

rfv3 Patient's complaint, symptom, or other reason for visit #3 - detailed category

type: numeric (long)

label: RFVF

range: [10050,89980] units: 1

unique values: 540 missing .: 9,879/16,709

examples: 15300 Vomiting

58410 State of consciousness not specified

.

.

rfv4 Patient's complaint, symptom, or other reason for visit #4 - detailed category

type: numeric (long)

label: RFVF

range: [10050,89990] units: 1

unique values: 460 missing .: 12,904/16,709

examples: 41150 Medication, other and unspecified kinds

.

.

.

rfv5 Patient's complaint, symptom, or other reason for visit #5 - detailed category

type: numeric (long)

label: RFVF

range: [10050,89990] units: 1

unique values: 367 missing .: 14,753/16,709

examples: .

.

.

.

diag1	Diagnosis #1
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type: string (str4)

unique values: 1,398 missing "": 0/16,709

examples: "J029"
 "M25-"
 "R101"
 "S099"

diag2	Diagnosis #2
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type: string (str4)

unique values: 1,255 missing "": 0/16,709

examples: "-9"
 "-9"
 "J069"
 "R109"

diag3	Diagnosis #3
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type: string (str4)

unique values: 961 missing "": 0/16,709

examples: "-9"
 "-9"
 "-9"
 "J029"

```
type: string (str4)
```

```
unique values: 747
```

```
missing "": 0/16,709
```

```
examples: "-9"
```

```
"-9"
```

```
"-9"
```

```
"-9"
```

```
type: string (str4)
```

```
unique values: 533
```

```
missing "": 0/16,709
```

```
examples: "-9"
```

```
"-9"
```

```
"-9"
```

```
"-9"
```

```
type: numeric (byte)
```

```
label: PRDIAGF
```

```
range: [0,1]
```

```
units: 1
```

```
unique values: 2
```

```
missing .: 62/16,709
```

```
tabulation: Freq.  Numeric  Label
              16,607      0    No
              40          1    Yes
              62          .
```

prdiag2 For diagnosis 2, is this probable, questionable, or ruleout?

type: numeric (byte)
label: PRDIAGF

range: [0,1] units: 1
unique values: 2 missing .: 7,370/16,709

tabulation:	Freq.	Numeric	Label
	9,271	0	No
	68	1	Yes
	7,370	.	

prdiag3 For diagnosis 3, is this probable, questionable, or ruleout?

type: numeric (byte)
label: PRDIAGF

range: [0,1] units: 1
unique values: 2 missing .: 11,662/16,709

tabulation:	Freq.	Numeric	Label
	5,013	0	No
	34	1	Yes
	11,662	.	

prdiag4 For diagnosis 4, is this probable, questionable, or ruleout?

type: numeric (byte)
label: PRDIAGF

range: [0,1] units: 1
unique values: 2 missing .: 13,831/16,709

tabulation:	Freq.	Numeric	Label
	2,864	0	No
	14	1	Yes
	13,831	.	

prdiag5

For diagnosis 5, is this probable, questionable, or ruleout?

type: numeric (byte)
label: PRDIAGF

range: [0,1] units: 1
unique values: 2 missing .: 15,019/16,709

tabulation:	Freq.	Numeric	Label
	1,682	0	No
	8	1	Yes
	15,019	.	

alzhd

Does patient have: Alzheimer's disease/Dementia

type: numeric (byte)
label: NOYESF

range: [0,1] units: 1
unique values: 2 missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
	16,487	0	No
	222	1	Yes

cog_dx

indicator: any cognition-related diagnosis. 1/0

type: numeric (byte)
label: NOYESF

range: [0,1] units: 1
unique values: 2 missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
	16,561	0	No
	148	1	Yes

any_cog any cognition-related diagnosis (cog_dx=1) or patient indicated to have dementia

type: numeric (byte)
label: NOYESF

range: [0,1] units: 1
unique values: 2 missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
	16,411	0	No
	298	1	Yes

cog_dx_code1 identified cognition-related ICD-9 / ICD-10 diagnosis code from diag1

type: string (str4)

unique values: 2 missing "": 16,649/16,709

tabulation:	Freq.	Value
	16,649	" "
	14	"F039"
	46	"R418"

cog_dx_code2 identified cognition-related ICD-9 / ICD-10 diagnosis code from diag2

type: string (str4)

unique values: 2

missing "": 16,672/16,709

tabulation:	Freq.	Value
	16,672	" "
	14	"F039"
	23	"R418"

cog_dx_code3

identified cognition-related ICD-9 / ICD-10 diagnosis code from diag3

type: string (str4)

unique values: 2

missing "": 16,679/16,709

tabulation:	Freq.	Value
	16,679	" "
	11	"F039"
	19	"R418"

cog_dx_code4

identified cognition-related ICD-9 / ICD-10 diagnosis code from diag4

type: string (str4)

unique values: 2

missing "": 16,695/16,709

tabulation:	Freq.	Value
	16,695	" "
	10	"F039"
	4	"R418"

cog_dx_code5

identified cognition-related ICD-9 / ICD-10 diagnosis code from diag5

type: string (str4)

unique values: 2 missing "": 16,699/16,709

tabulation:	Freq.	Value
	16,699	" "
	8	"F039"
	2	"R418"

settype

Setting type

type: numeric (byte)
label: SETTYPEF

range: [3,3] units: 1
unique values: 1 missing .: 0/16,709

tabulation:	Freq.	Numeric	Label
	16,709	3	NHAMCS - ED

cstratm

Clustered CSTRATM -- masked

type: numeric (long)

range: [20117200,40400000] units: 100
unique values: 8 missing .: 0/16,709

tabulation:	Freq.	Value
	2,047	20117201
	1,276	20217201
	2,056	20317201
	2,015	20417201
	730	40100000
	2,872	40200000
	4,513	40300000
	1,200	40400000

type: numeric (long)

range: [1,100199] units: 1

unique values: 117 missing .: 0/16,709

mean: 44307.3

std. dev: 49709

percentiles: 10% 25% 50% 75% 90%

 9 21 37 100076 100172

patwt Patient visit weight

type: numeric (float)

range: [104.45846,44275.793] units: .00001

unique values: 260 missing .: 0/16,709

mean: 8317.52

std. dev: 8226.61

percentiles: 10% 25% 50% 75% 90%

 1658.6 2882.25 5742.94 10641.5 15898.5

edwt ED weight

type: numeric (float)

range: [2.09691,158.73421] units: .00001

unique values: 188 missing .: 16,506/16,709

mean: 25.527

std. dev: 26.1394

percentiles:	10%	25%	50%	75%	90%
	5.15045	9.14831	15.3248	30.1814	65.0644