Project Data:
National Ambulatory Medical Care Survey

EPID 722

UNC–Chapel Hill

`epid722.web.unc.edu`

(Slides adapted from Alan Brookhart.)

Research Question:

What is the effect of initiation of moderate- or high-dose statin therapy versus no statin initiation on 10-year CVD endpoints (i.e., CVD hospitalization or all-cause mortality) among adults aged 35-75 years with no clinical history of CVD?

NAMCS: General description

- ► National Ambulatory Care Medical Survey
- ► National Center for Health Statistics (CDC)
- ► National sample of 20,000 visits/year to office-based physicians
- ► NHAMCS: emergency/outpatient
- ► 1995 to present

NAMCS: Content

- ► Data elements
  - – Physician and practice characteristics
  - – Patient demographics, comorbidities
  - – Treatment (medications: Multum Lexicon)
- ► See patient form (and Data Use Agreement (DUA))
  - – Patient form: *2011_NAMCS30.pdf*
  - – Data use agreement: *dua.pdf*
  - – Additional forms: physician/CHC induction, EMR/workflow)
- ► http://www.cdc.gov/nchs/ahcd.htm

General description of our data

- ▶ 2000-2004 NAMCS data
- ▶ Data dictionary posted with relevant variables
  - – title: 722 Project Data Dictionary_2016.pdf
- ▶ STATIN dataset -- select NAMCS population
  - – Contains 6,521 observations and 16 variables.
  - – Main treatment variable: NEWUSER
  - – Outcome: CVD-hospitalization and all-cause mortality

Differences with original NAMCS

- ► Selected convenient variables
- ► Calculated/imputed missing variables
- ► Assumed a simple random sample (removed cluster ID, weights)
- ► Assumed new prescription = initiation

Obtain SAS data set

- ► See **sas-read-url.sas** SAS program on Sakai.
- ► Reads in data from
  https://epid722.web.unc.edu/2016-data/

```
;

filename dat1 url "http://epid722.web.unc.edu/files/2015/11/namcs-class-2016.csv";

    data WORK.DAT1;
    infile DAT1 delimiter = ',' MISSOVER DSD lrecl=32767 firstobs=2 ;
    input
                YEAR
                patcode
                AGE
                male
                DIABETES
                HYPLIPID
                HTN
                newusercat
                newuser
                white
                obese
                dbp
                sbp
                smoke
                t
                delta
    ;
    run;
```

Aside: read data in R

```
mydata = read.csv("http://epid722.web.unc.edu/files/2015/11/namcs-class-2016.csv")
colnames(mydata) = tolower(colnames(mydata))
t.1 = CreateTableOne(data = mydata[, c("age", "male", "newuser", "white", "obese",
    "t", "delta")], factorVars = c("delta"))
```

```
                       Overall
 n                      6521
 age (mean (sd))       56.73 (14.07)
 male (mean (sd))       0.40 (0.49)
 newuser (mean (sd))    0.10 (0.29)
 white (mean (sd))      0.86 (0.35)
 obese (mean (sd))      0.06 (0.24)
 t (mean (sd))          8.89 (2.50)
 delta (%)
    0                  5109 (78.3)
    1                   727 (11.1)
    2                   415 ( 6.4)
    3                   270 ( 4.1)
```

Let's take a look...

	Variable	Format	Label
1	AGE		Patient age, in years
2	DIABETES	DIABETES.	Current diabetes status
3	HTN	HTN.	Hypertension status
4	HYPLIPID	HYPLIPID.	Current hyperlipidemia status
5	YEAR		Calendar year of study entry
6	dbp		Diastolic blood pressure
7	delta	DELTA.	Outcome status
8	male	MALE.	Gender
9	newuser	NEWUSER.	New statin user
10	newusercat	NEWUSERCAT.	New user, stratifying potency
11	obese	OBESE.	Obesity status
12	patcode		Patient code
13	sbp		Systolic blood pressure
14	smoke	SMOKE.	Current tobacco smoking status
15	t		Observed time, in years
16	white	WHITE.	Race

Exposure: **newuser**

	Variable	Format	Label
1	AGE		Patient age, in years
2	DIABETES	DIABETES.	Current diabetes status
3	HTN	HTN.	Hypertension status
4	HYPLIPID	HYPLIPID.	Current hyperlipidemia status
5	YEAR		Calendar year of study entry
6	dbp		Diastolic blood pressure
7	delta	DELTA.	Outcome status
8	male	MALE.	Gender
9	newuser	NEWUSER.	New statin user
10	newusercat	NEWUSERCAT.	New user, stratifying potency
11	obese	OBESE.	Obesity status
12	patcode		Patient code
13	sbp		Systolic blood pressure
14	smoke	SMOKE.	Current tobacco smoking status
15	t		Observed time, in years
16	white	WHITE.	Race

Outcome: **delta**

	Variable	Format	Label
4	HYPLIPID	HYPLIPID.	Current hyperlipidemia status
5	YEAR		Calendar year of study entry
6	dbp		Diastolic blood pressure
7	delta	DELTA.	Outcome status
8	male	MALE.	Gender
9	newuser	NEWUSER.	New statin user
10	newusercat	NEWUSERCAT.	New user, stratifying potency

Values for **delta**:

    0 = 'Administratively censored at 10 years'

    1 = 'Hospitalization for CVD'

    2 = 'All-cause mortality'

    3 = 'Loss to follow-up';

Optional Readings

Research Studies using NAMCS

📄 H. Phan, K. Porter, B. Sill, and M. C. Nahata. ``Prescribing Trends for the Outpatient Treatment of Adolescents and Young Adults with Type 2 Diabetes Mellitus''. In: *Journal of Managed Care Pharmacy* 18.8 (Oct. 2012), pp. 607–614. DOI: 10.18553/jmcp.2012.18.8.607.

📄 D. H. Solomon, J. Z. Ayanian, E. Yelin, T. Shaykevich, M. A. Brookhart, and J. N. Katz. ``Use of disease-modifying medications for rheumatoid arthritis by race and ethnicity in the National Ambulatory Medical Care Survey''. In: *Arthritis Care & Research* 64.2 (Feb. 2012), pp. 184–189. DOI: 10.1002/acr.20674.