Mental Health & Substance Use related Emergency Room Visits

Data from the Vermont Hospital Uniform Discharge Dataset (VHUDDS)

Annie Paumgarten, MSW MS

October 17, 2019

Outline

- Goal: Summarize characteristics of hospital emergency room (ER) visits to potentially inform prevention efforts
  - ER visits with a mental health (MH) related diagnosis
  - ER visits with a substance use disorder (SUD) related diagnosis
  - ER visits with a suicide-related diagnosis
- Time periods: calendar years 2016 & 2017
- Questions to answer for each type of ER visit...
  - How many ER visits?
  - What is the unadjusted rate of ER visits per 1,000 total ER visits?
  - How does the number/rate of visits change from 2016-2017?
  - How does the number of ER visits vary by age and gender?
  - Within the broader categories, what types of ER visits are most common?
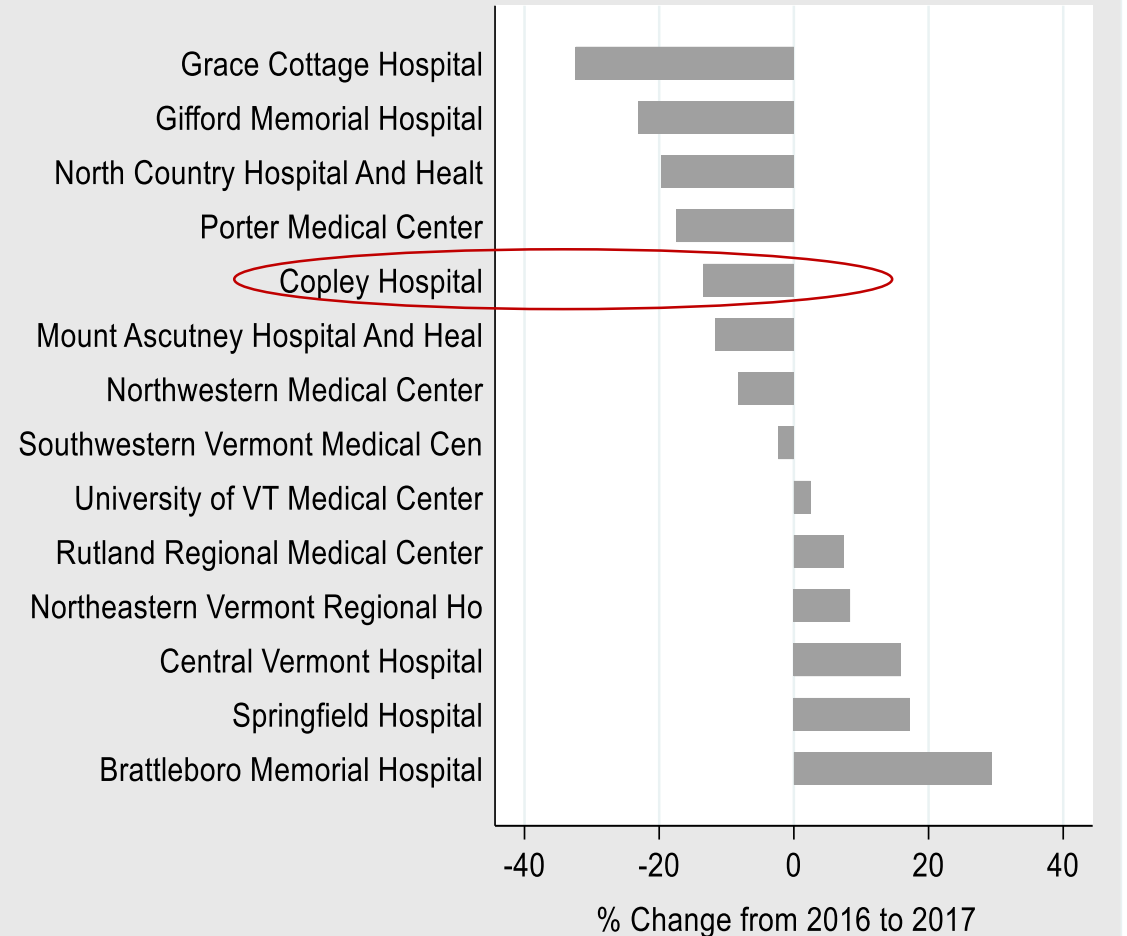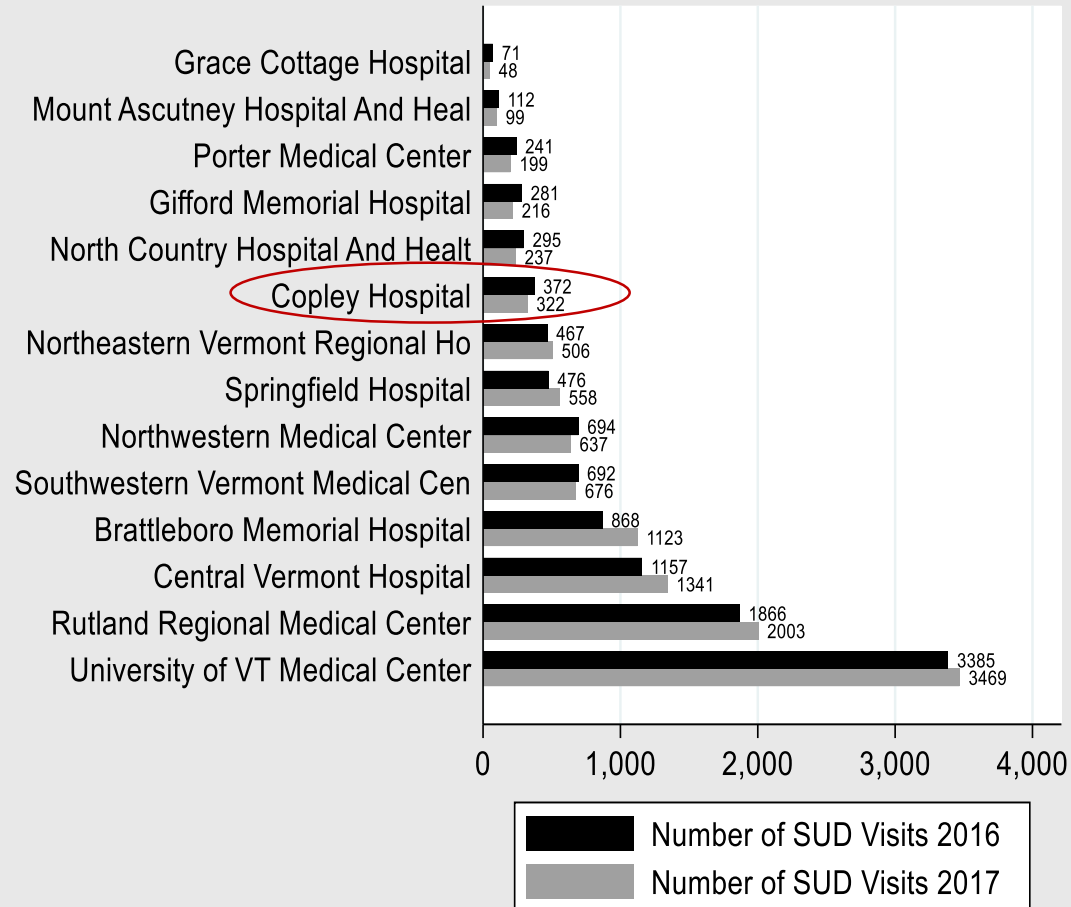
Methods

- Data Source/Categorization: VUHDDS calendar years 2016/2017 combined
  - Green Mountain Care Board has statutory authority to collect the data and provides de-identified public use files via the Vermont Department of Health

- Metrics:
  - Total number of visits
  - Unadjusted rate per 1,000 ER visits, by hospital: (# of ER visits for a condition/total number ER visits)*1000
  - Percent change = (value 1 – value 2/ value 1) x 100
  - Differences by age group (<17, 18-24, 25-39, 40-49, 50+) and gender (male/female)
  - Differences by diagnosis type:
    - Primary admission diagnosis ='admit', admit + 20 additional fields='any' diagnosis
    - 21 fields for codes in each hospital discharge record, admission diagnosis & 20 additional diagnosis fields*

- <mark>Important Limitations</mark>: ICD-10 coding practice differences when comparing hospitals; unit of analysis is visit not person; 2016/2017 is two years ago (2018 data will be available in December 2019); Rates are provided unadjusted; Idea-generating analysis; not designed to answer in-depth research questions that would involve multi-variate modeling

*AHRQ reviewed the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), the ICD-10-CM system, and the Clinical Classification Software (CCS)ICD-10 codes and categorized the ICD-10 codes: https://www.hcup-us.ahrq.gov/reports/statbriefs/sb249-appendix.pdf. Important notes about categorization: "…the opioid definition used here includes only codes for initial encounters *(active treatment)* and not codes for subsequent encounters *(not in active treatment, routine follow-up care)* or sequela *(a secondary code used to attach a causal condition to another code)*. Additionally, substance-related self-harm codes were included in the category for suicidal ideation or attempt instead of the substance-related category."
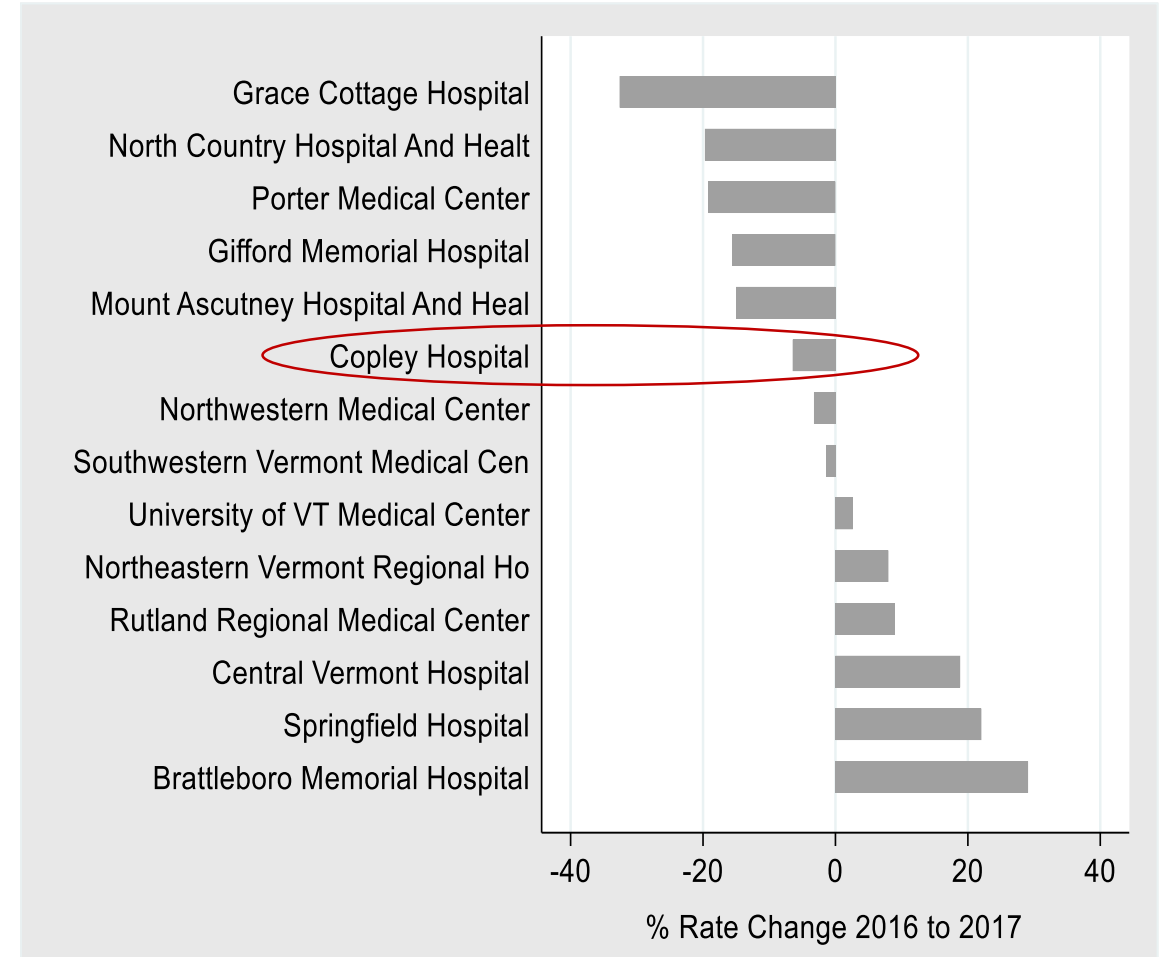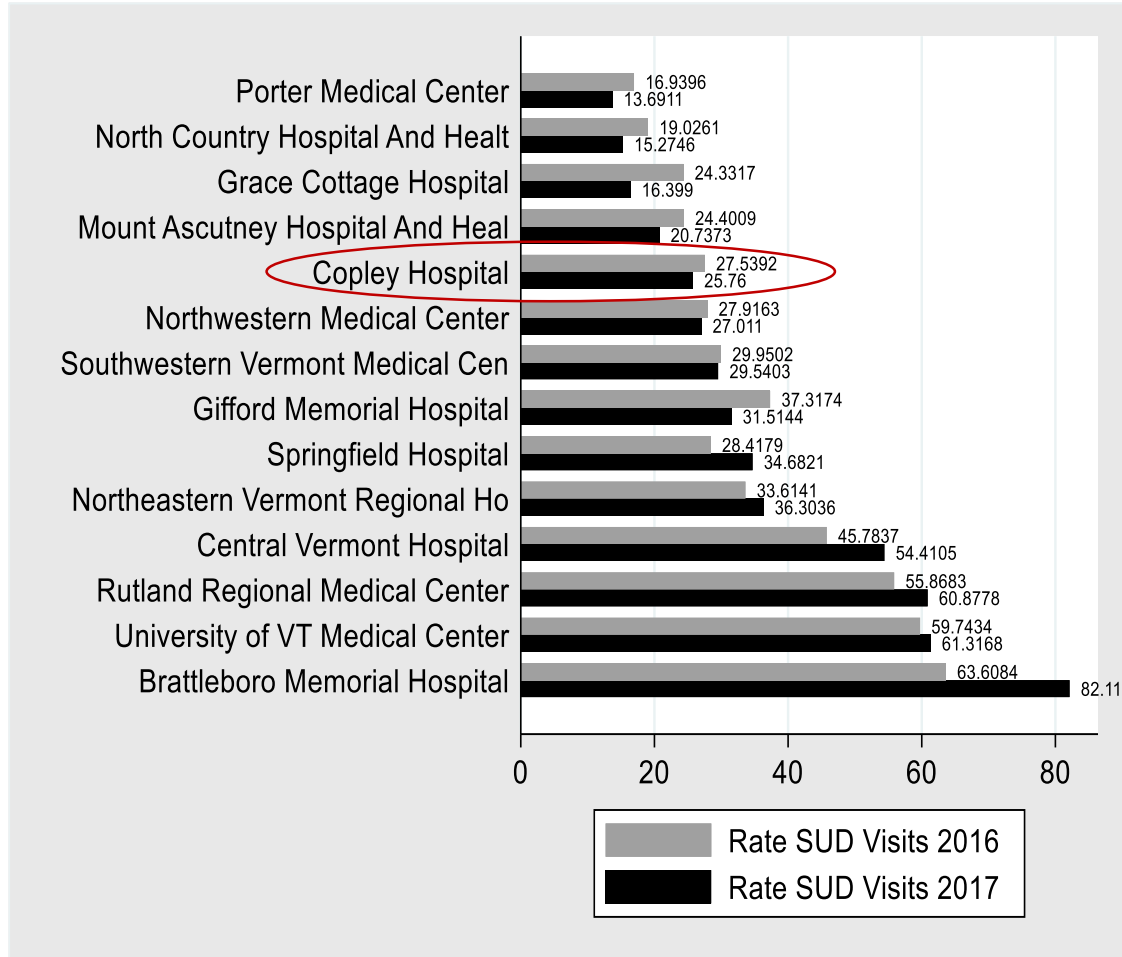
How many ER visits?

What is the unadjusted rate per 1,000 total ER visits?
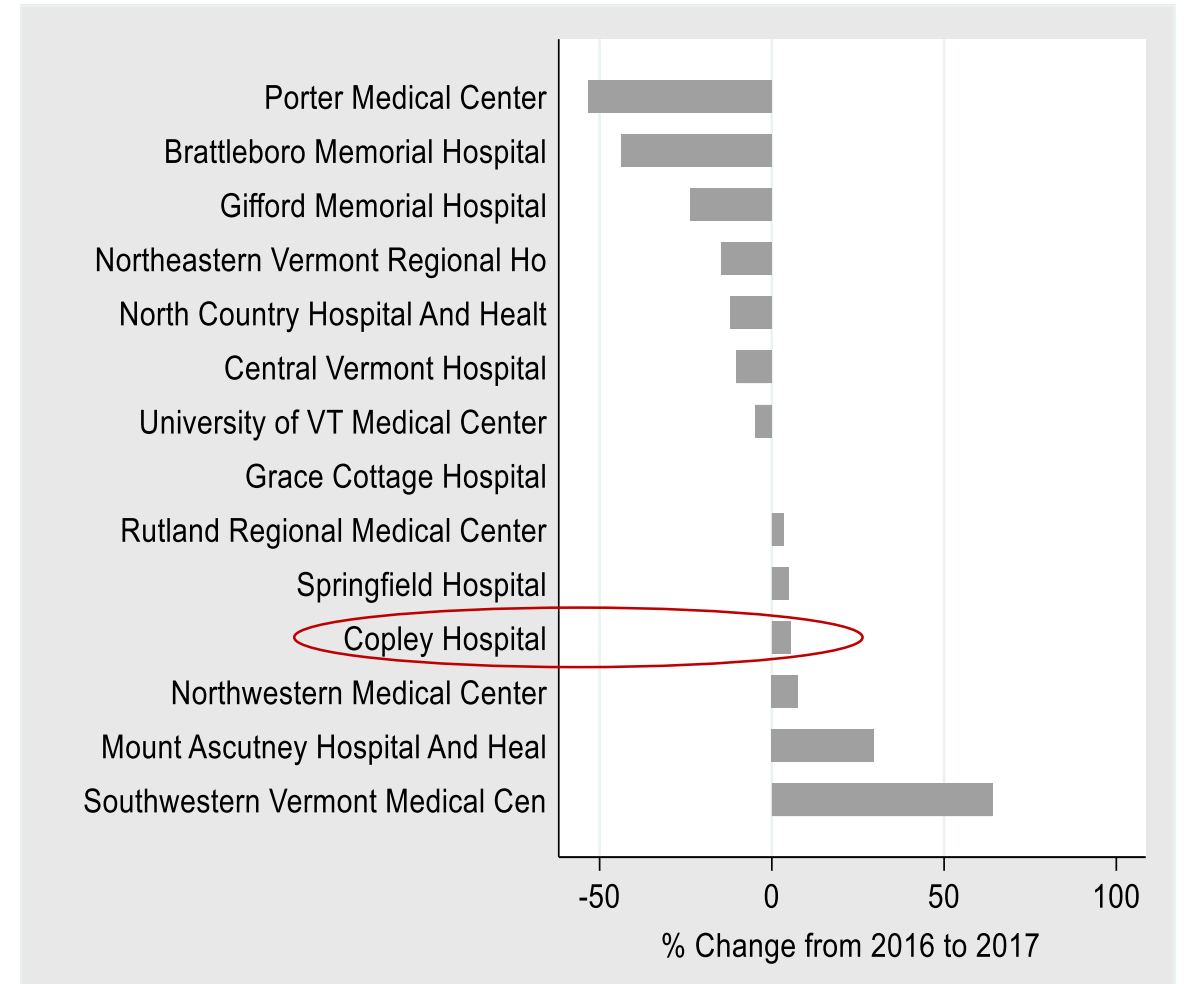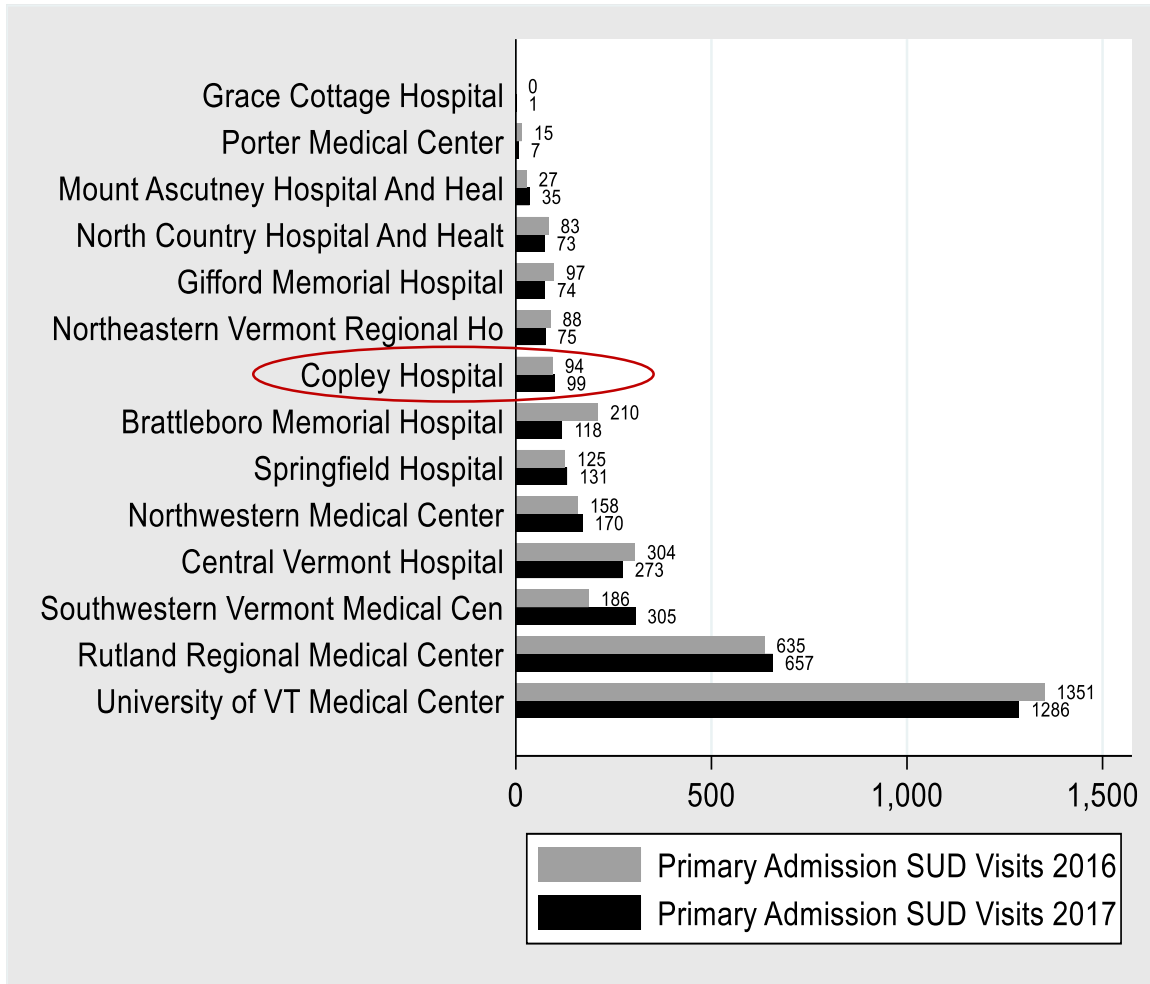
How many SUD ER visits? *any diagnosis field*

Number of SUD Visits 2016
Number of SUD Visits 2017
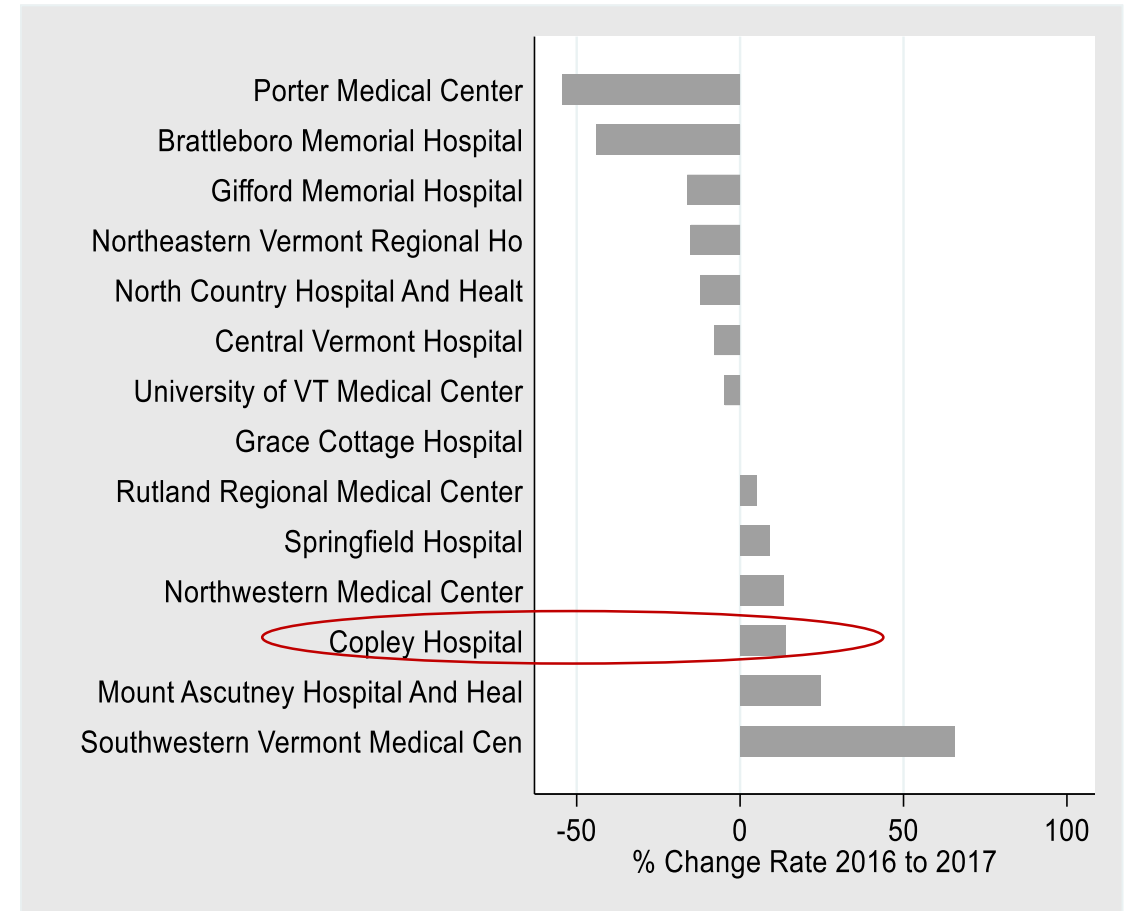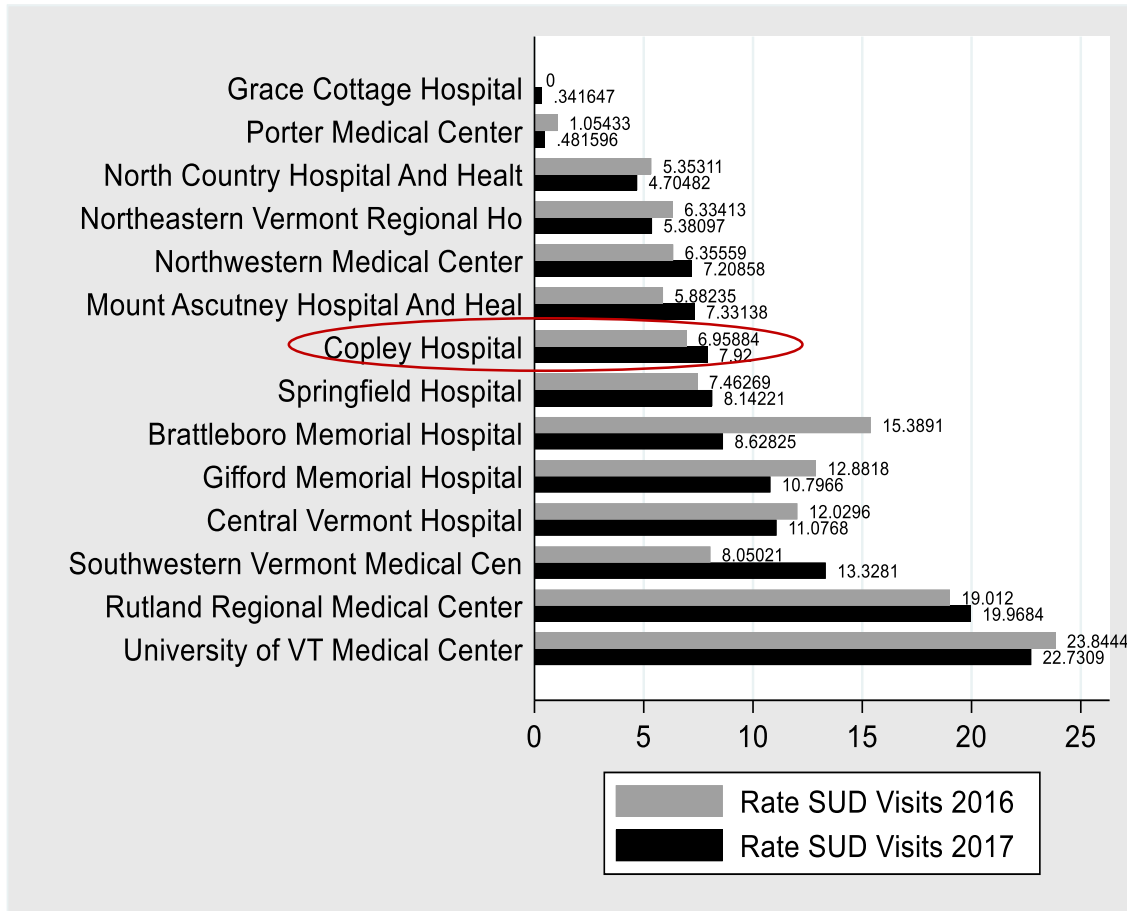
% Change from 2016 to 2017

What is the unadjusted rate of SUD ER visits per 1,000 total ER visits? *any diagnosis field*

How many SUD ER visits? *primary admission diagnosis field*

Left chart — Primary Admission SUD Visits:

Hospital	2016	2017
Grace Cottage Hospital	0	1
Porter Medical Center	15	7
Mount Ascutney Hospital And Heal	27	35
North Country Hospital And Healt	83	73
Gifford Memorial Hospital	97	74
Northeastern Vermont Regional Ho	88	75
Copley Hospital	94	99
Brattleboro Memorial Hospital	210	118
Springfield Hospital	125	131
Northwestern Medical Center	158	170
Central Vermont Hospital	304	273
Southwestern Vermont Medical Cen	186	305
Rutland Regional Medical Center	635	657
University of VT Medical Center	1351	1286

Legend:
- Primary Admission SUD Visits 2016
- Primary Admission SUD Visits 2017

Right chart — % Change from 2016 to 2017 (ordered top to bottom):
- Porter Medical Center
- Brattleboro Memorial Hospital
- Gifford Memorial Hospital
- Northeastern Vermont Regional Ho
- North Country Hospital And Healt
- Central Vermont Hospital
- University of VT Medical Center
- Grace Cottage Hospital
- Rutland Regional Medical Center
- Springfield Hospital
- Copley Hospital
- Northwestern Medical Center
- Mount Ascutney Hospital And Heal
- Southwestern Vermont Medical Cen

% Change from 2016 to 2017

What is the unadjusted rate of SUD ER visits per 1,000 total ER visits? *primary admission diagnosis field*

How many MH ER visits? *any diagnosis field*

Left chart — Number of MH Visits 2016 (gray) and 2017 (black):

Hospital	2016	2017
Grace Cottage Hospital	142	163
Mount Ascutney Hospital And Heal	212	253
Gifford Memorial Hospital	565	469
Porter Medical Center	652	645
North Country Hospital And Healt	736	927
Northeastern Vermont Regional Ho	856	1026
Copley Hospital	1597	1410
Springfield Hospital	2286	1433
Brattleboro Memorial Hospital	1534	1582
Southwestern Vermont Medical Cen	1787	1614
Central Vermont Hospital	2767	2521
Rutland Regional Medical Center	4486	4108
Northwestern Medical Center	4016	4249
University of VT Medical Center	5259	6278

Legend:
- Number of MH Visits 2016
- Number of MH Visits 2017

Right chart — Percent Change from 2016 to 2017:

- Springfield Hospital
- Gifford Memorial Hospital
- Copley Hospital
- Southwestern Vermont Medical Cen
- Central Vermont Hospital
- Rutland Regional Medical Center
- Porter Medical Center
- Brattleboro Memorial Hospital
- Northwestern Medical Center
- Grace Cottage Hospital
- Mount Ascutney Hospital And Heal
- University of VT Medical Center
- Northeastern Vermont Regional Ho
- North Country Hospital And Healt

Percent Change from 2016 to 2017

What is the unadjusted rate of MH ER visits per 1,000 total ER visits? *any diagnosis field*
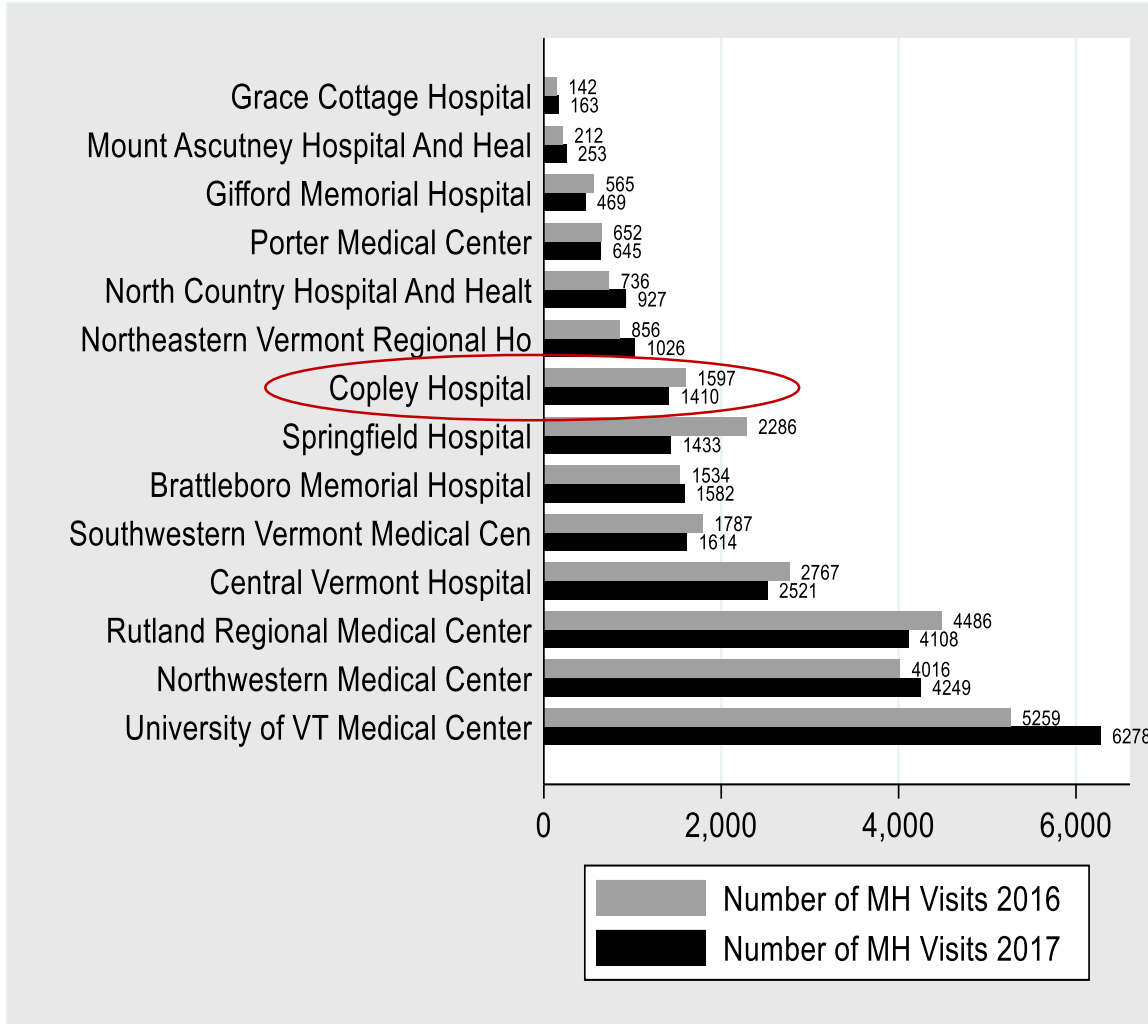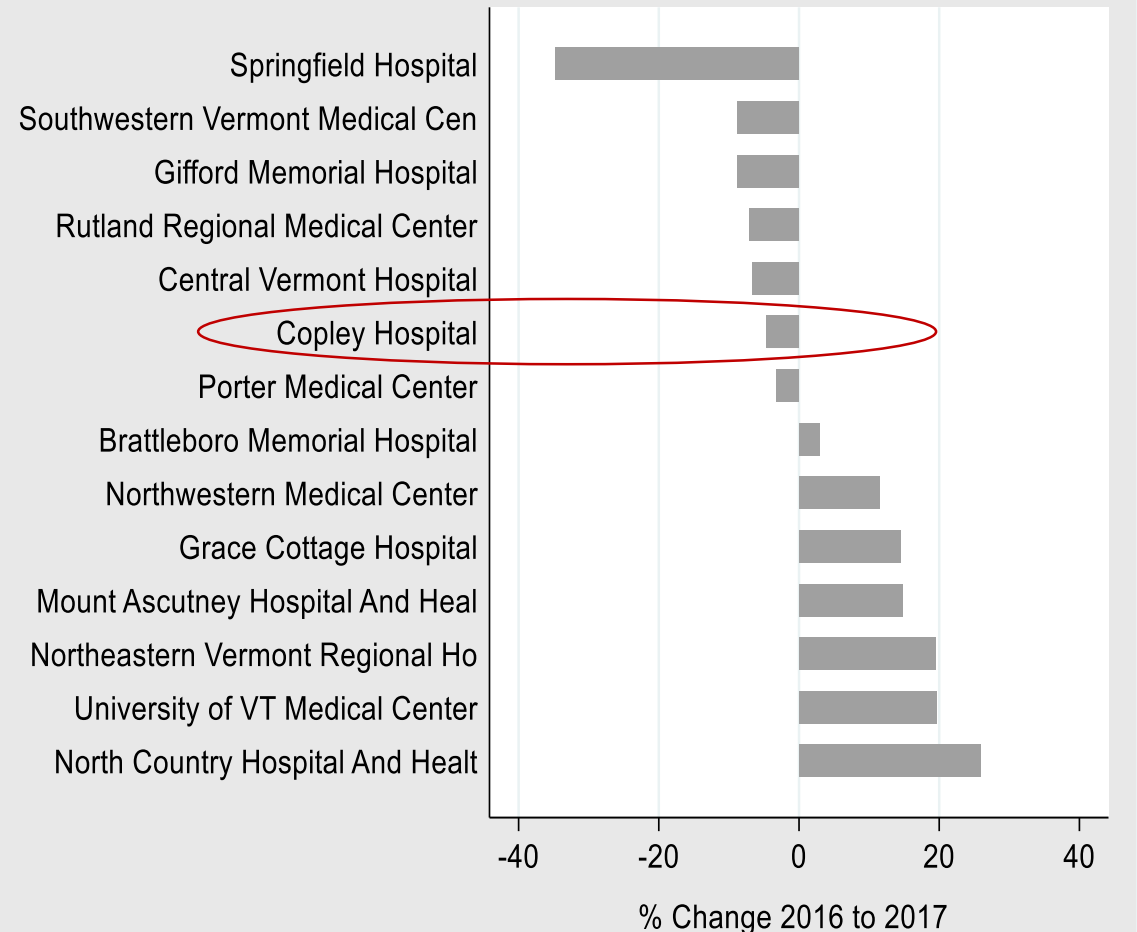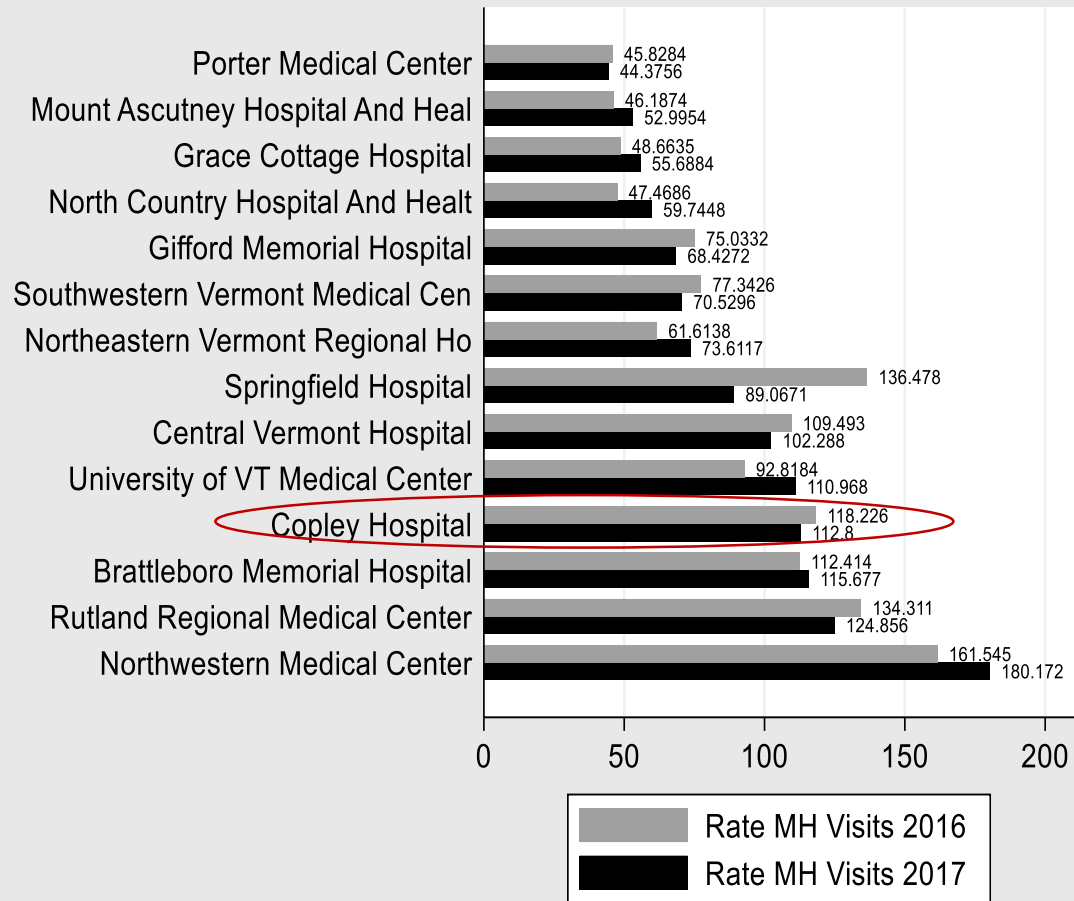
How many MH ER visits? *primary admission diagnosis field*

What is the unadjusted rate of MH ER visits per 1,000 total ER visits? *primary admission diagnosis field*
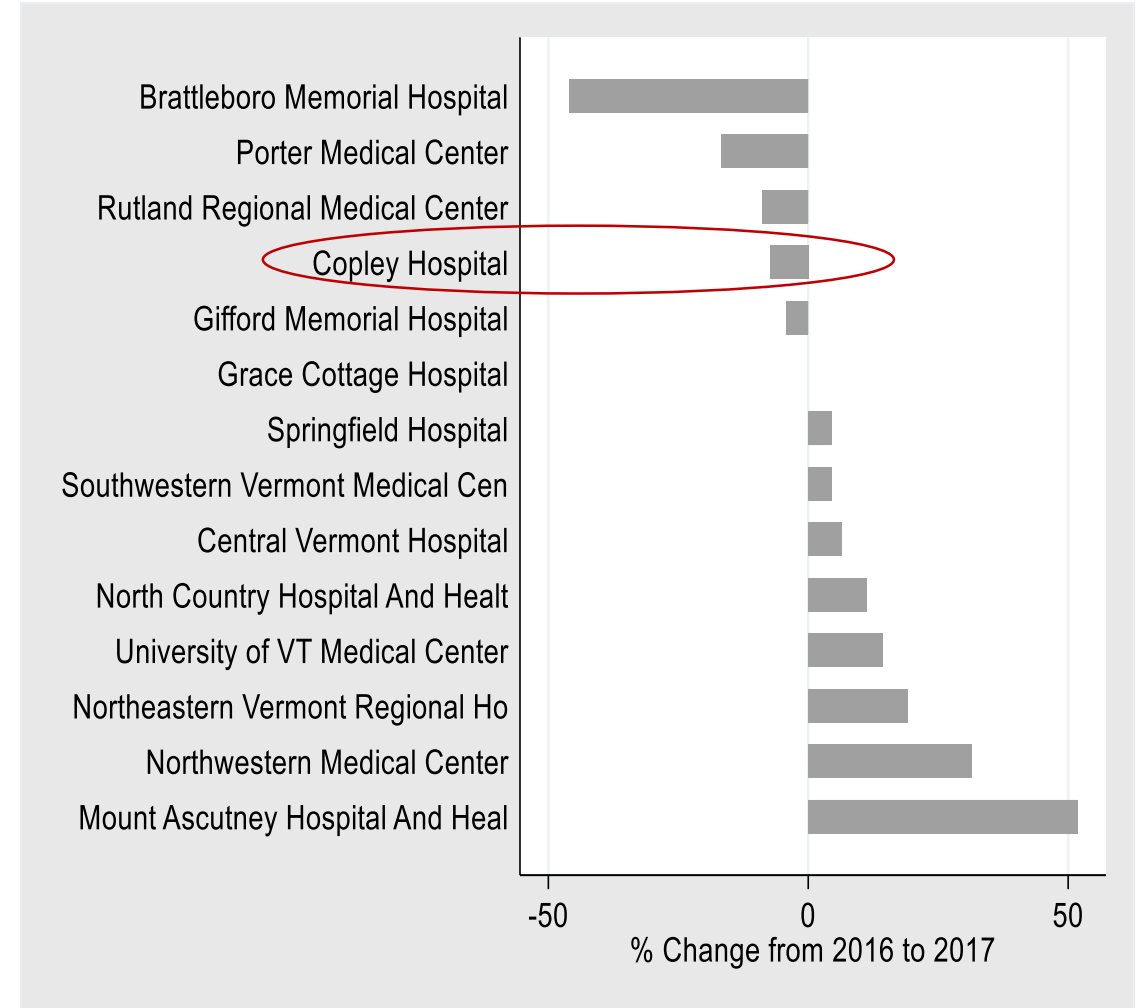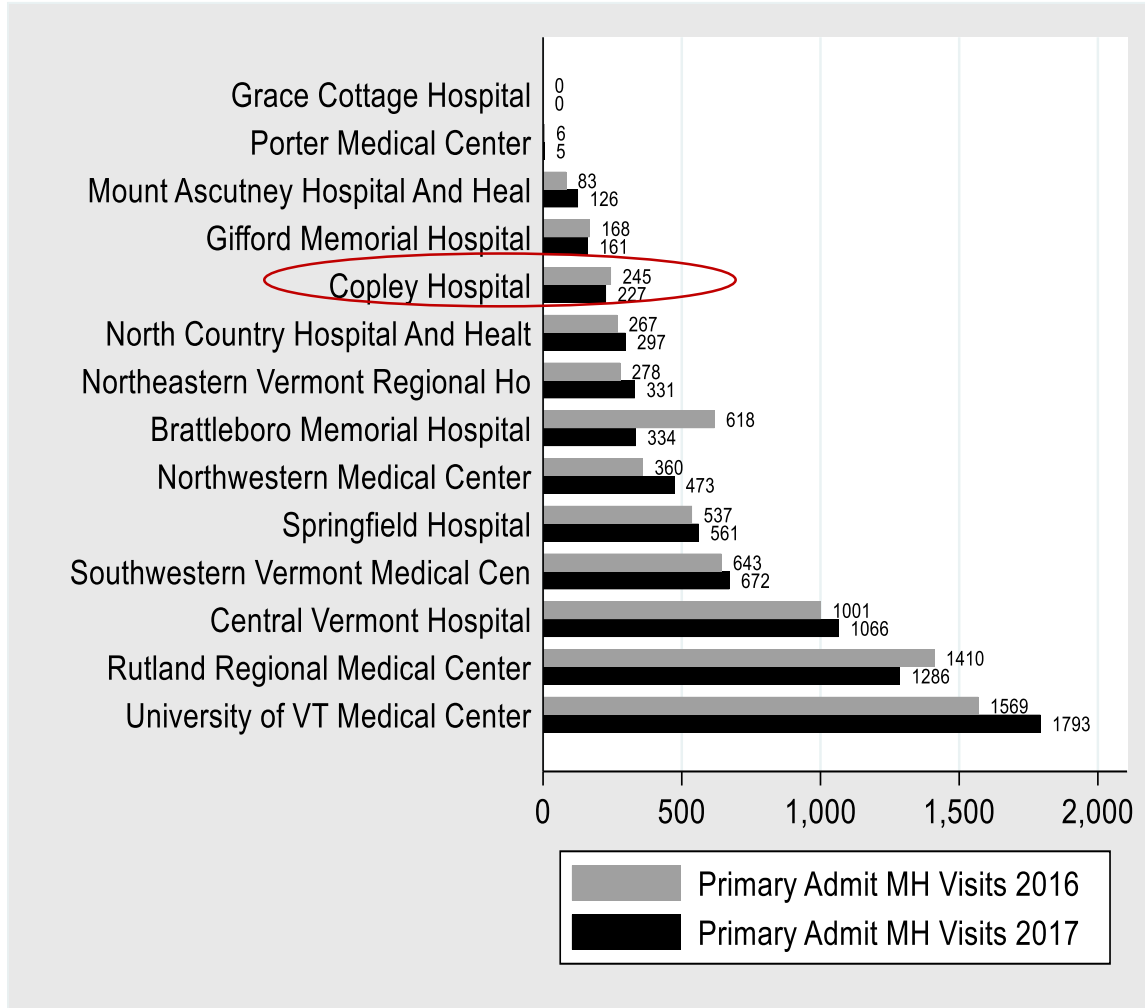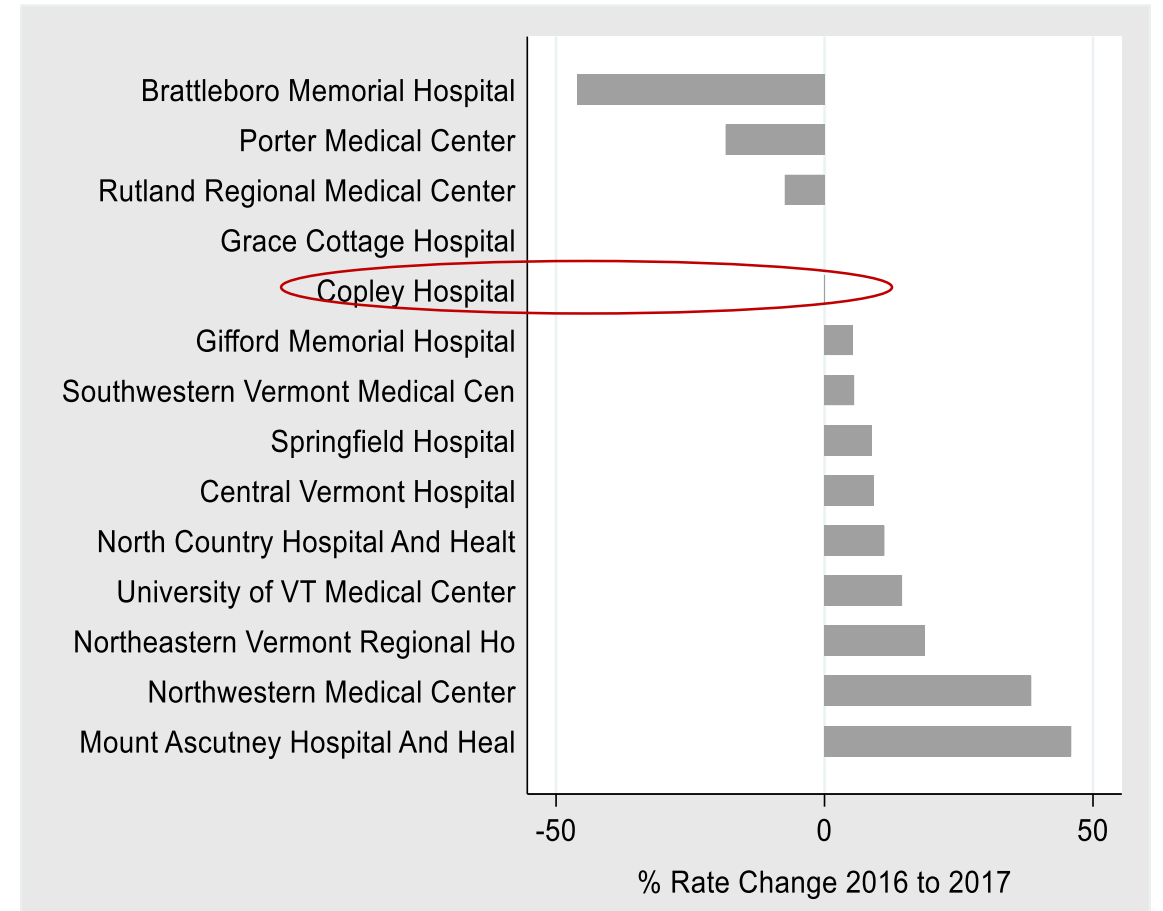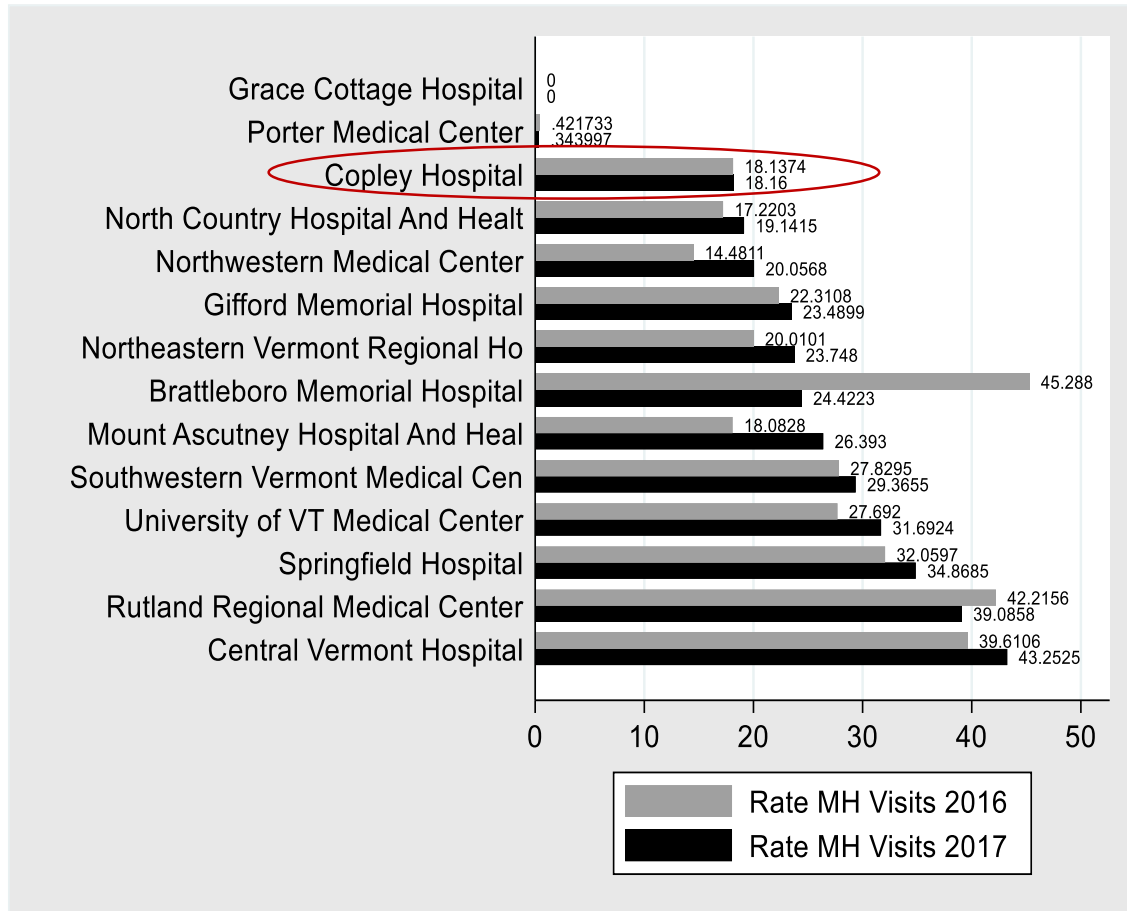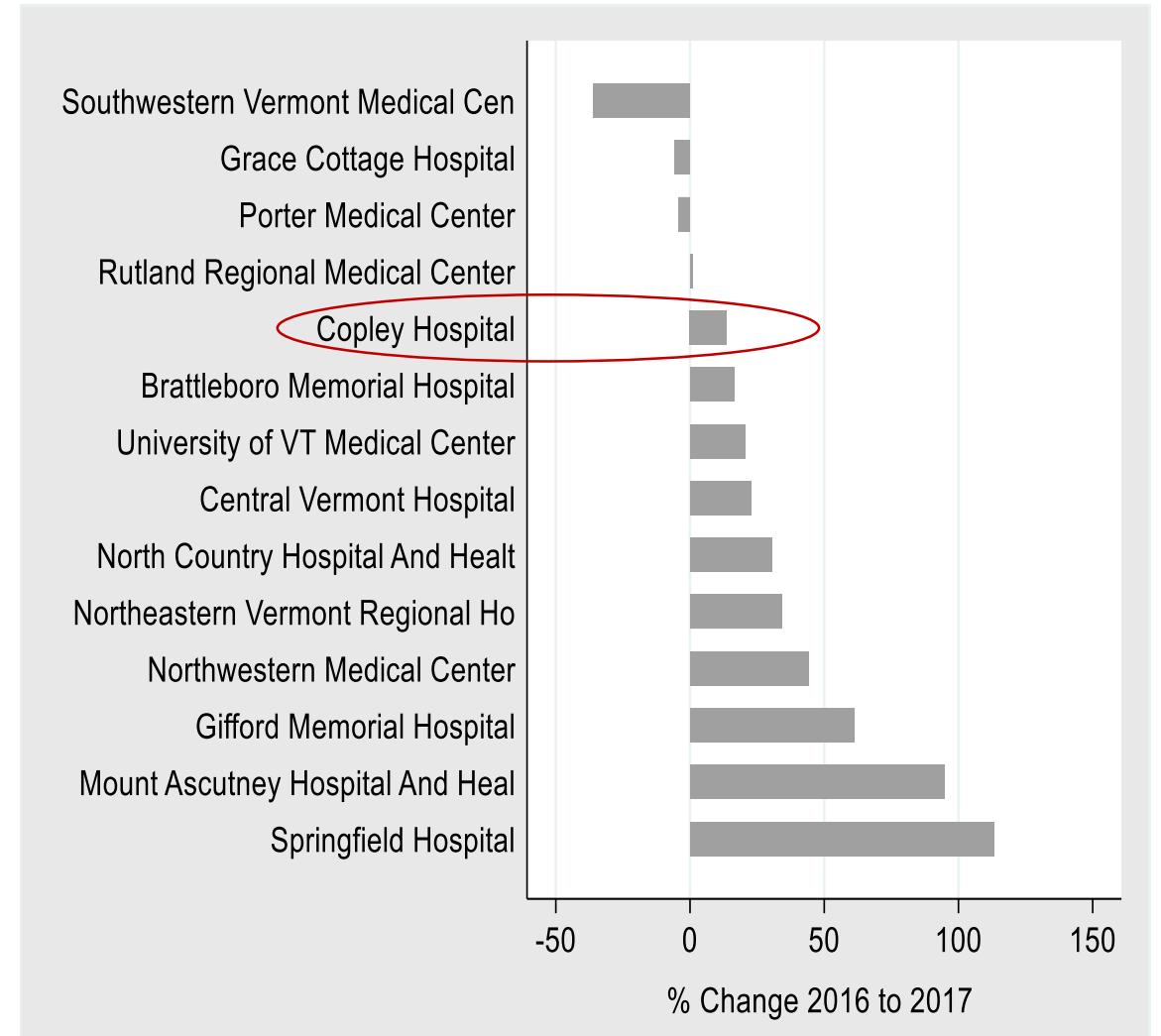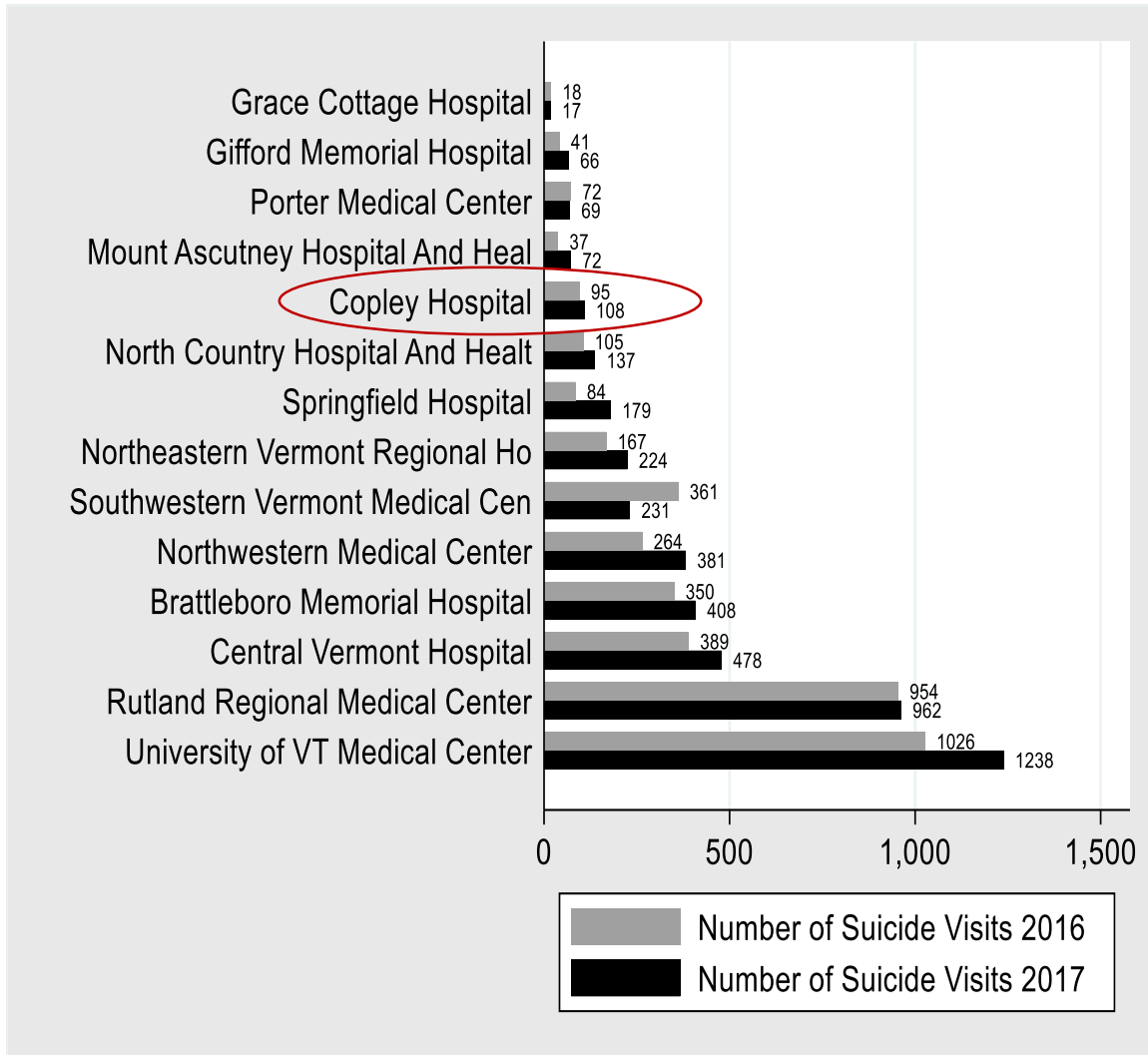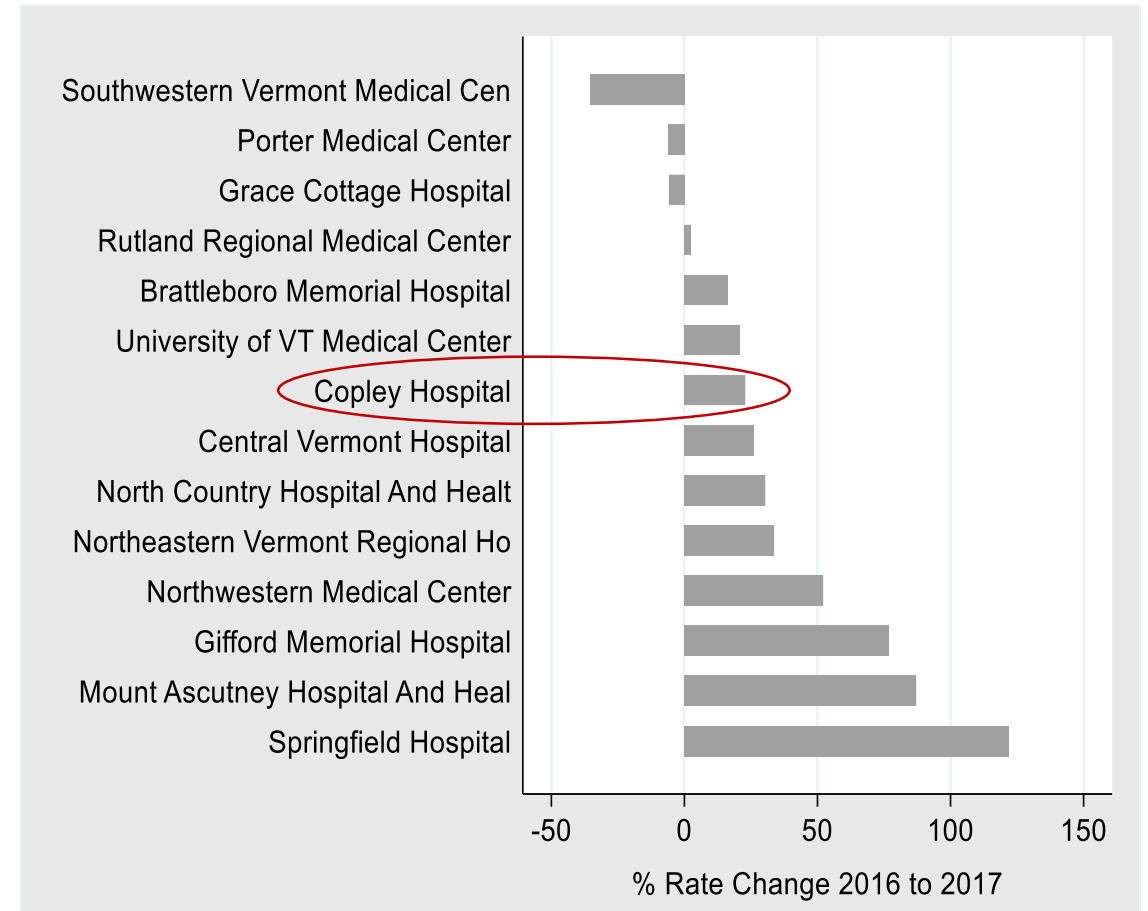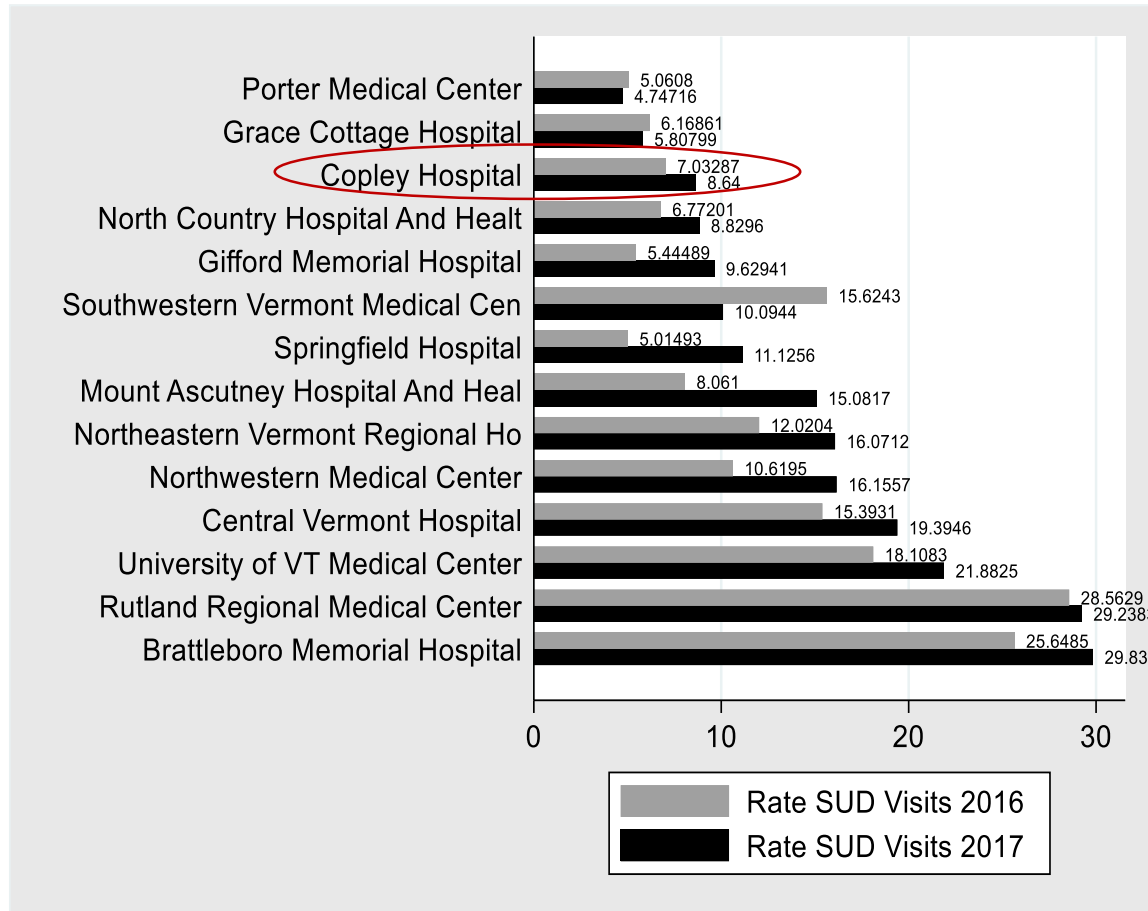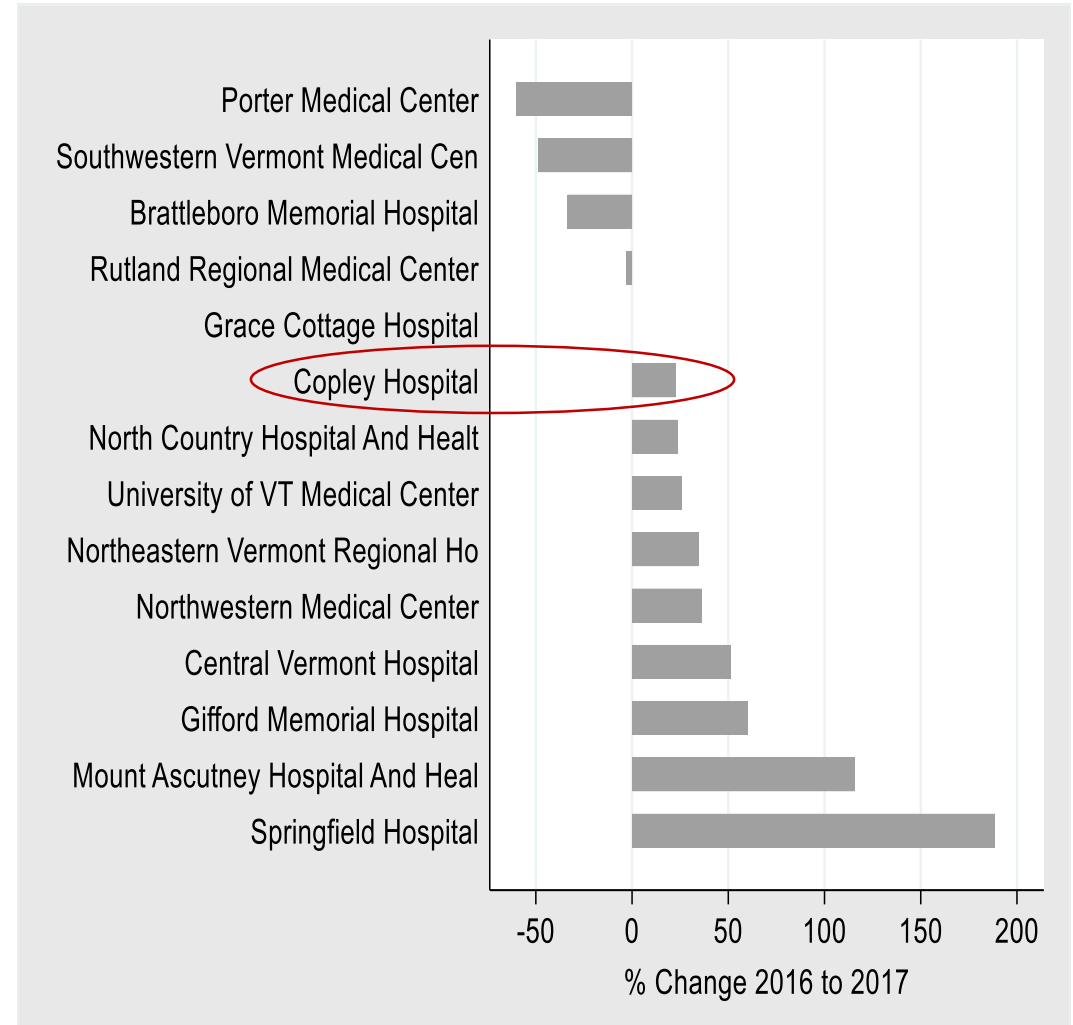
How many suicide ER visits? *any diagnosis field*

Left chart — Number of Suicide Visits 2016 (gray) and 2017 (black):

Hospital	2016	2017
Grace Cottage Hospital	18	17
Gifford Memorial Hospital	41	66
Porter Medical Center	72	69
Mount Ascutney Hospital And Heal	37	72
Copley Hospital	95	108
North Country Hospital And Healt	105	137
Springfield Hospital	84	179
Northeastern Vermont Regional Ho	167	224
Southwestern Vermont Medical Cen	361	231
Northwestern Medical Center	264	381
Brattleboro Memorial Hospital	350	408
Central Vermont Hospital	389	478
Rutland Regional Medical Center	954	962
University of VT Medical Center	1026	1238

Legend: Number of Suicide Visits 2016 / Number of Suicide Visits 2017

Right chart — % Change 2016 to 2017 (top to bottom):
Southwestern Vermont Medical Cen; Grace Cottage Hospital; Porter Medical Center; Rutland Regional Medical Center; Copley Hospital; Brattleboro Memorial Hospital; University of VT Medical Center; Central Vermont Hospital; North Country Hospital And Healt; Northeastern Vermont Regional Ho; Northwestern Medical Center; Gifford Memorial Hospital; Mount Ascutney Hospital And Heal; Springfield Hospital

What is the unadjusted rate of suicide ER visits per 1,000 total ER visits? *any diagnosis field*

Left chart — Rate SUD Visits 2016 (gray) and Rate SUD Visits 2017 (black):

Hospital	Rate SUD Visits 2016	Rate SUD Visits 2017
Porter Medical Center	5.0608	4.74716
Grace Cottage Hospital	6.16861	5.80799
Copley Hospital	7.03287	8.64
North Country Hospital And Healt	6.77201	8.8296
Gifford Memorial Hospital	5.44489	9.62941
Southwestern Vermont Medical Cen	15.6243	10.0944
Springfield Hospital	5.01493	11.1256
Mount Ascutney Hospital And Heal	8.061	15.0817
Northeastern Vermont Regional Ho	12.0204	16.0712
Northwestern Medical Center	10.6195	16.1557
Central Vermont Hospital	15.3931	19.3946
University of VT Medical Center	18.1083	21.8825
Rutland Regional Medical Center	28.5629	29.2383
Brattleboro Memorial Hospital	25.6485	29.833

Right chart — % Rate Change 2016 to 2017 (ordered):

- Southwestern Vermont Medical Cen
- Porter Medical Center
- Grace Cottage Hospital
- Rutland Regional Medical Center
- Brattleboro Memorial Hospital
- University of VT Medical Center
- Copley Hospital
- Central Vermont Hospital
- North Country Hospital And Healt
- Northeastern Vermont Regional Ho
- Northwestern Medical Center
- Gifford Memorial Hospital
- Mount Ascutney Hospital And Heal
- Springfield Hospital

How many suicide ER visits? *primary admission diagnosis field*

Left chart — Primary Admit Suicide Visits 2016 and 2017:

Hospital	2016	2017
Grace Cottage Hospital	0	0
Porter Medical Center	5	2
Gifford Memorial Hospital	20	32
Mount Ascutney Hospital And Heal	32	69
Copley Hospital	66	81
Springfield Hospital	35	101
North Country Hospital And Healt	85	105
Southwestern Vermont Medical Cen	303	155
Northeastern Vermont Regional Ho	119	160
Brattleboro Memorial Hospital	275	183
Northwestern Medical Center	183	249
Central Vermont Hospital	212	320
Rutland Regional Medical Center	721	700
University of VT Medical Center	687	865

Legend:
- Primary Admit Suicide Visits 2016
- Primary Admit Suicide Visits 2017

Right chart — % Change 2016 to 2017 (order top to bottom):
- Porter Medical Center
- Southwestern Vermont Medical Cen
- Brattleboro Memorial Hospital
- Rutland Regional Medical Center
- Grace Cottage Hospital
- Copley Hospital
- North Country Hospital And Healt
- University of VT Medical Center
- Northeastern Vermont Regional Ho
- Northwestern Medical Center
- Central Vermont Hospital
- Gifford Memorial Hospital
- Mount Ascutney Hospital And Heal
- Springfield Hospital

% Change 2016 to 2017

What is the unadjusted rate of suicide ER visits per 1,000 total ER visits? *primary admission diagnosis field*

How does the number of ER visits differ by age at Copley?

How does the number of ER visits differ by gender at Copley?

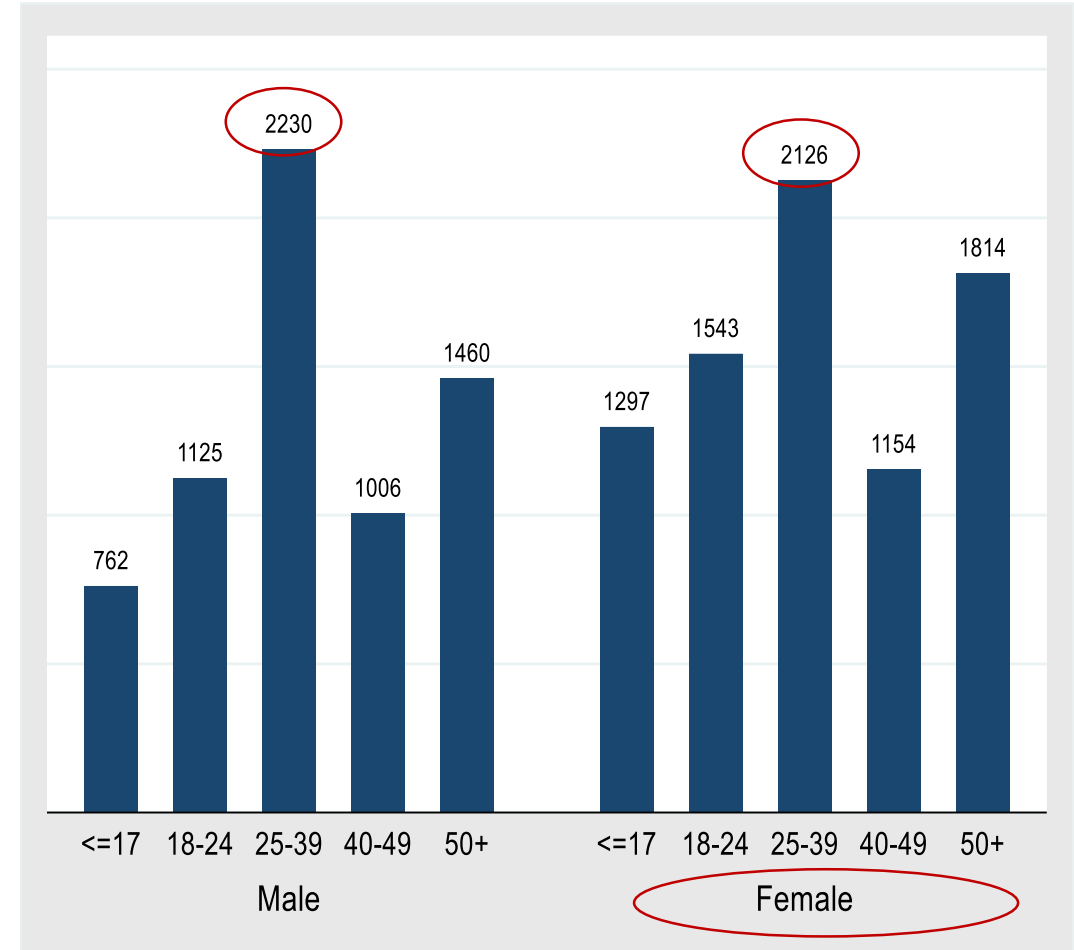# How does the number of SUD ER visits differ by age and sex? *primary admission diagnosis field*
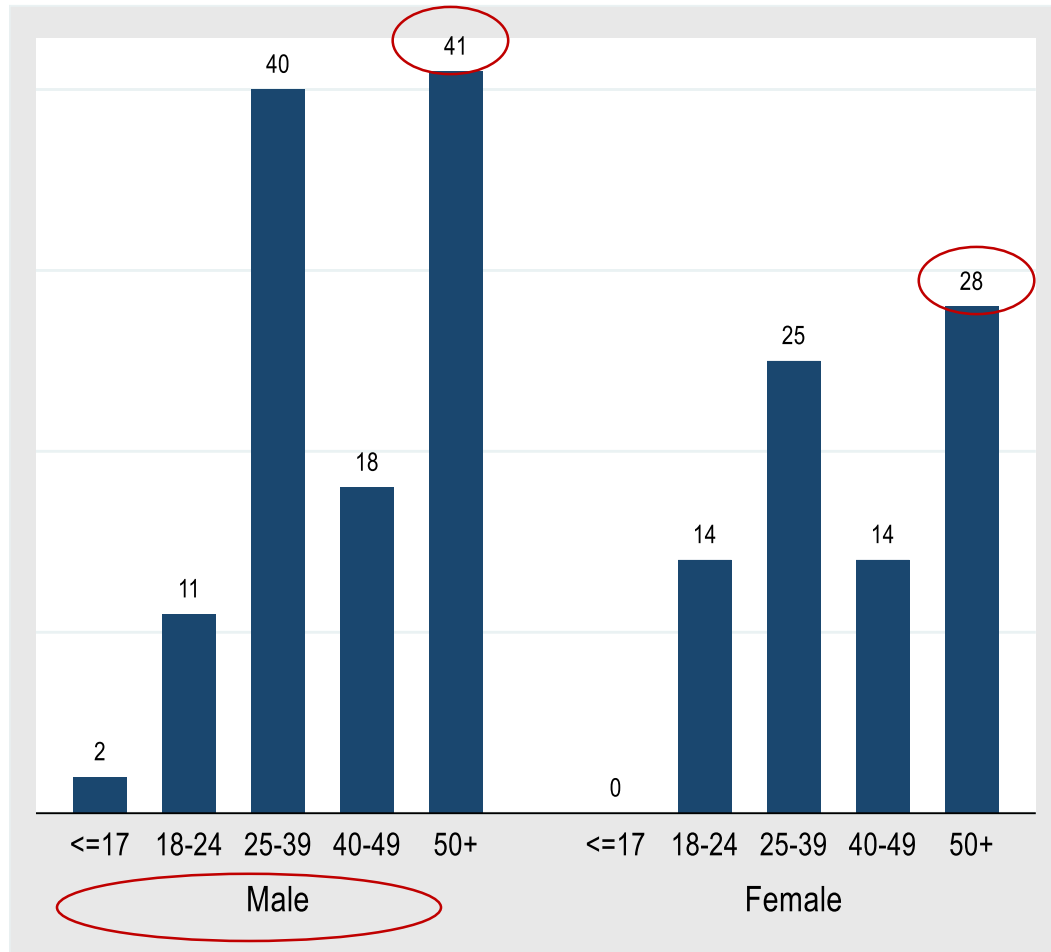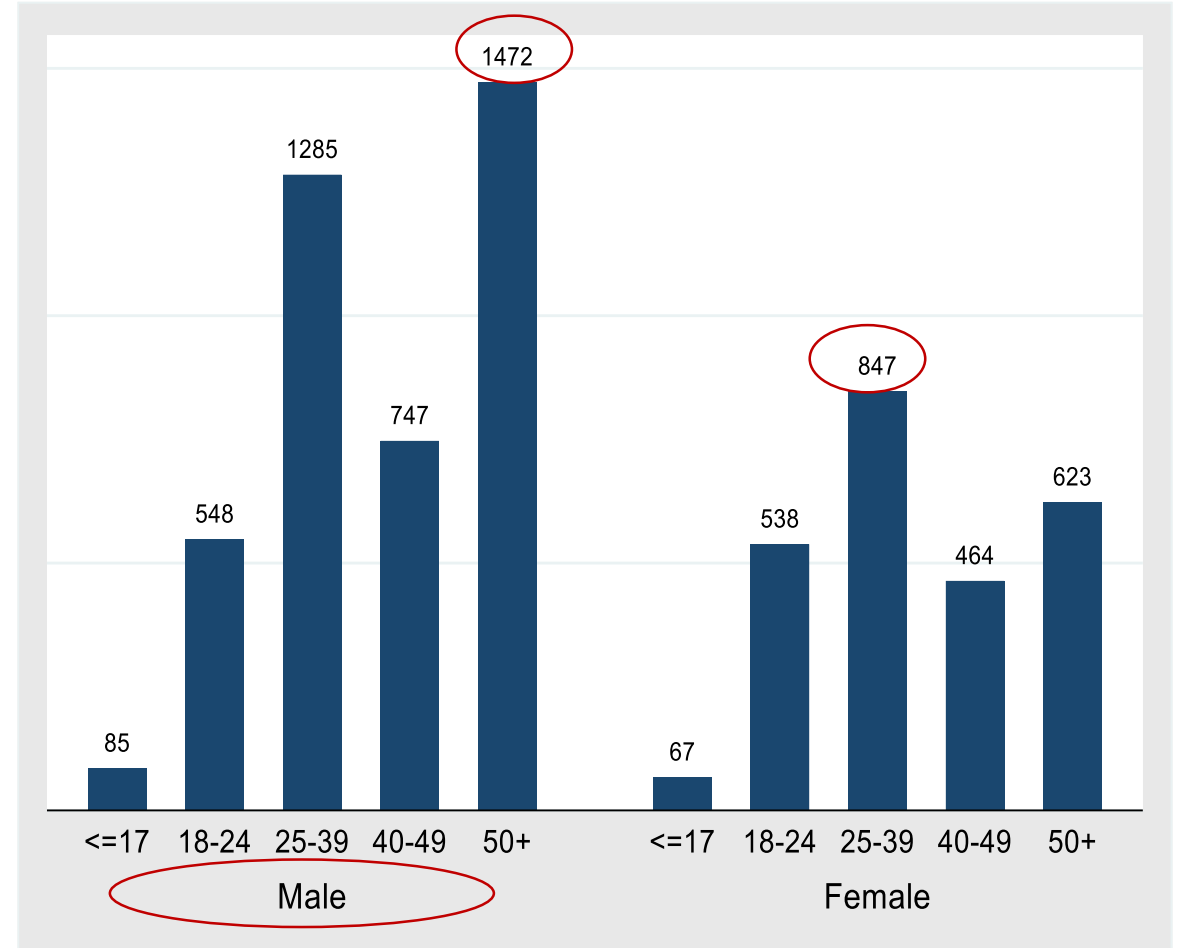
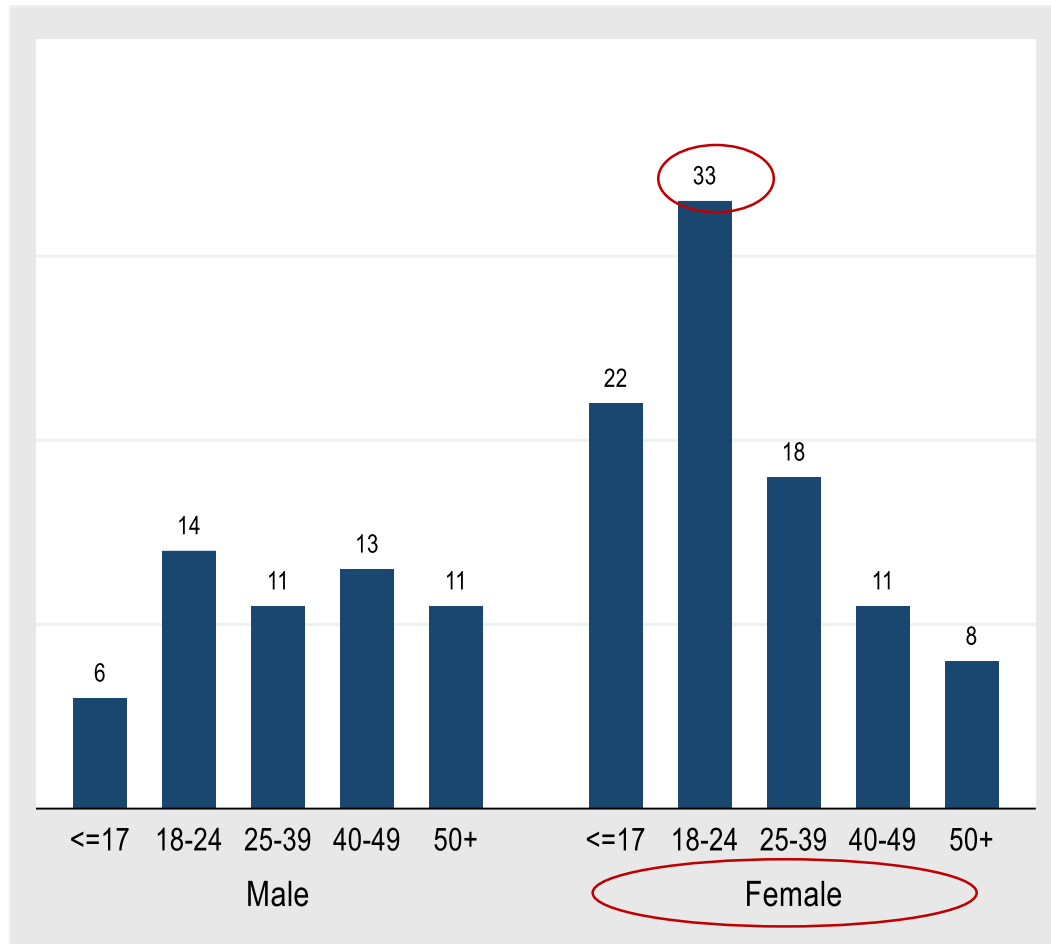# How does the number of MH ER visits differ by age and sex? *primary admission diagnosis field*
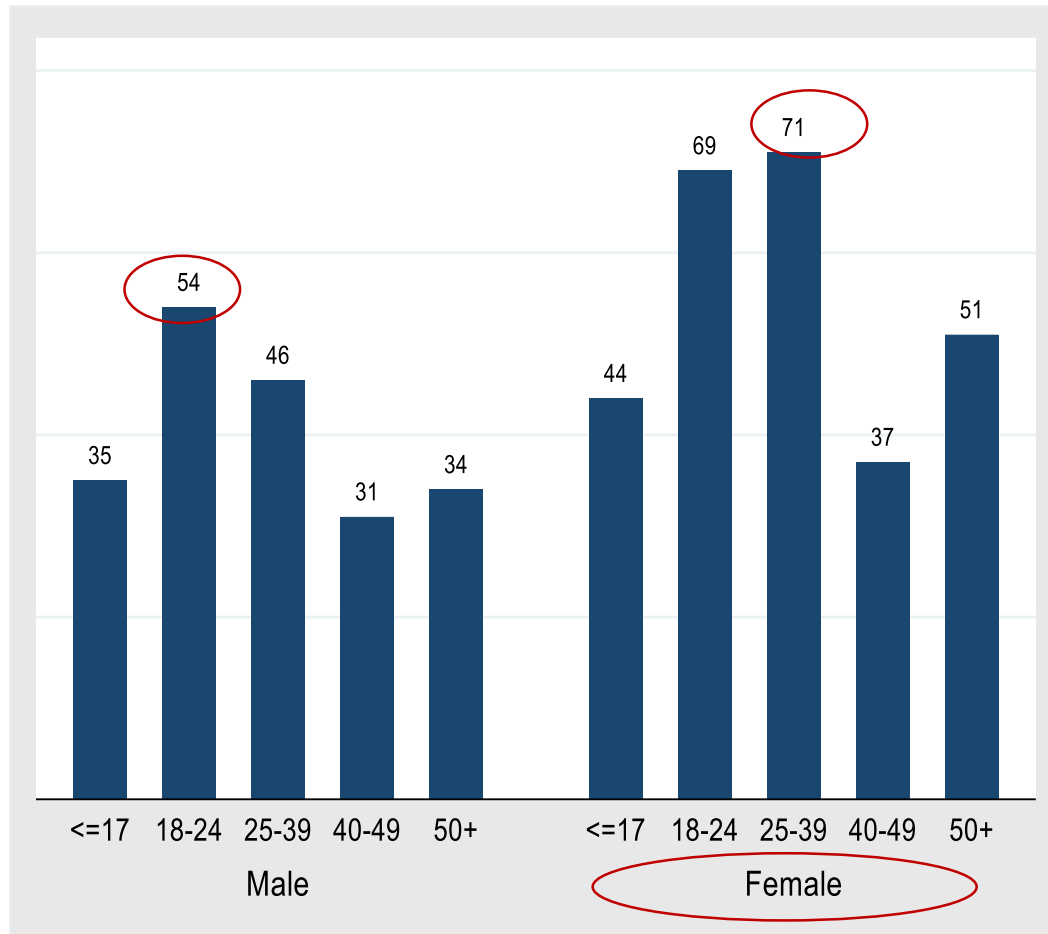
How does the number of suicide ER visits differ by age and sex? *primary admission diagnosis field*
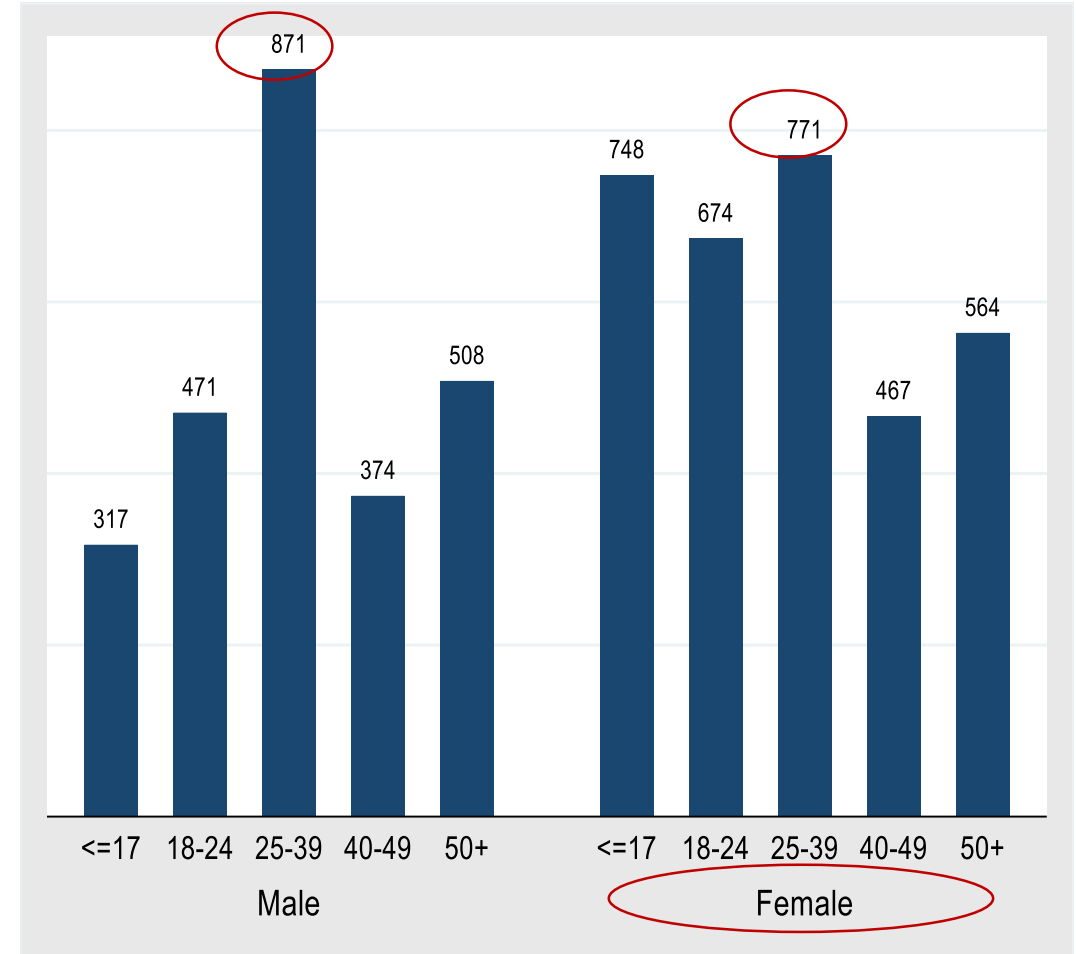
Within the broader categories, what types of ER visits are most common?

What types of SUD ER visits are most common?

primary admission diagnosis of SUD
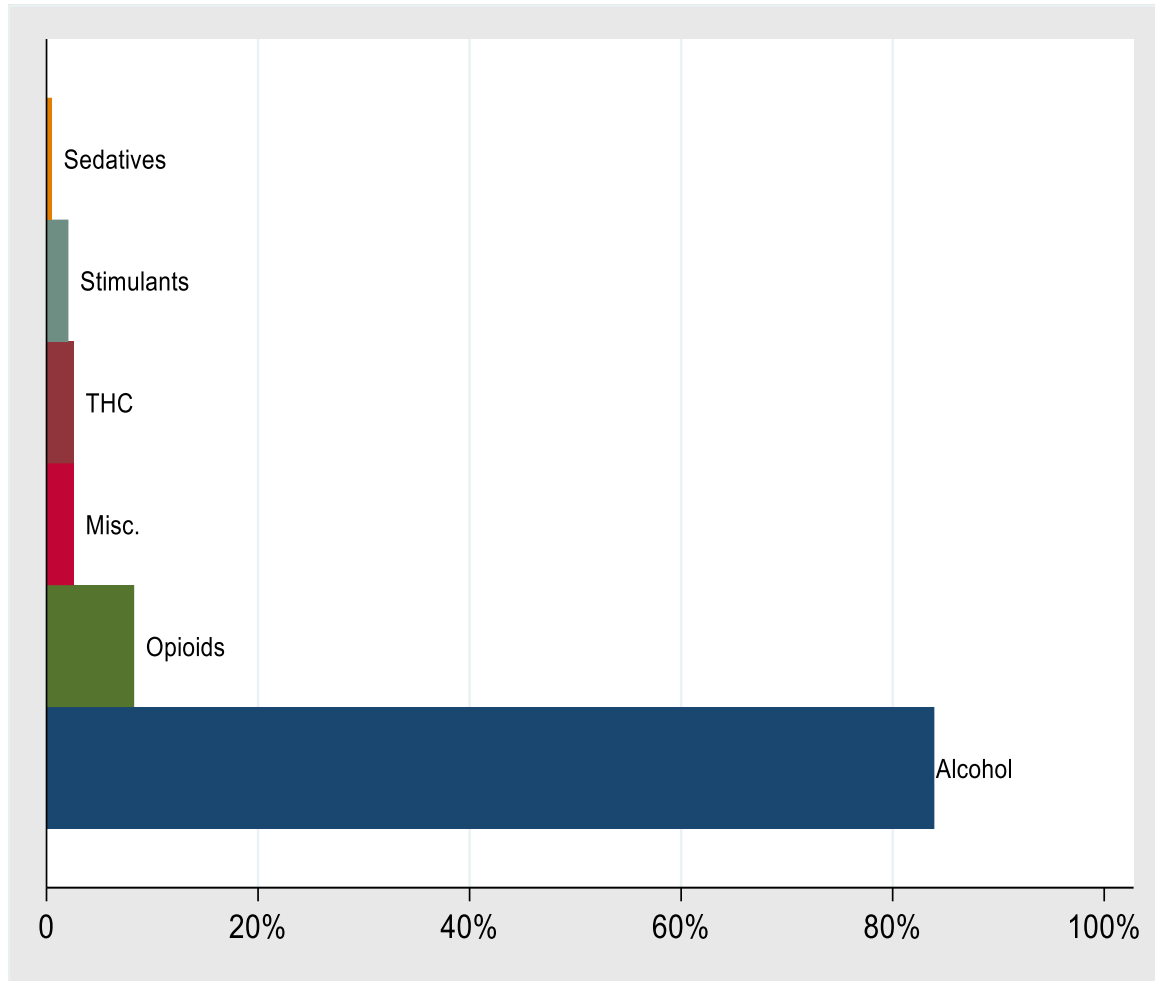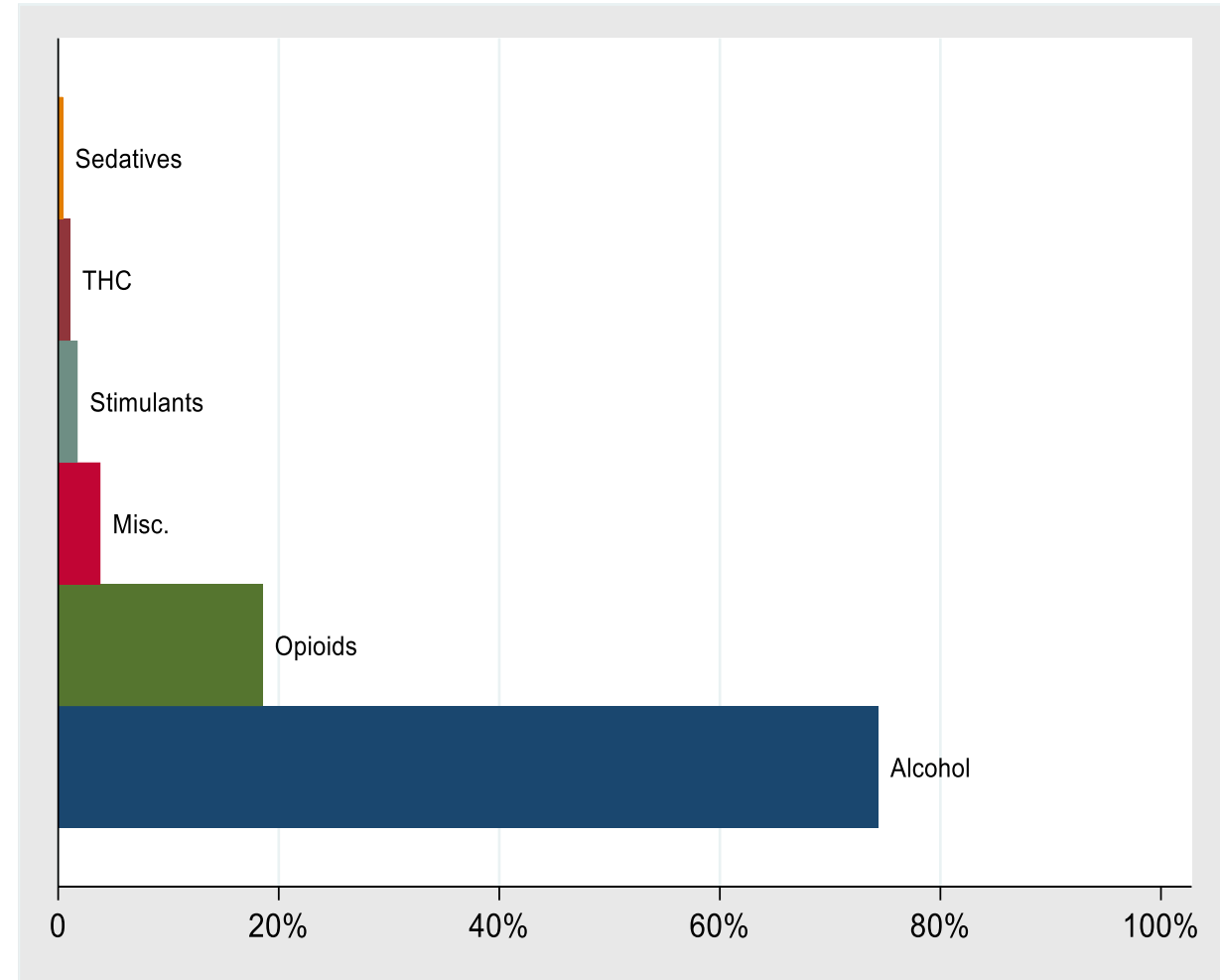
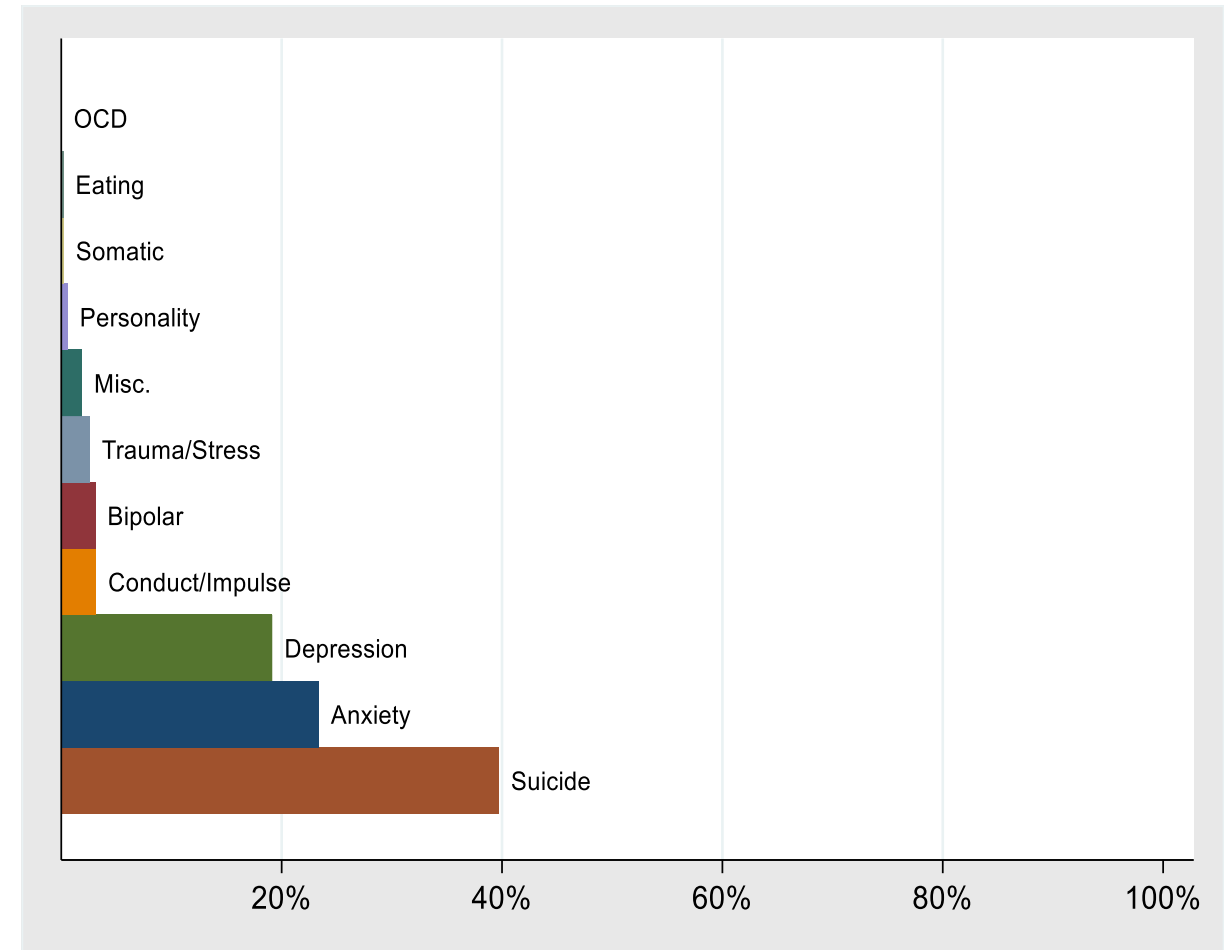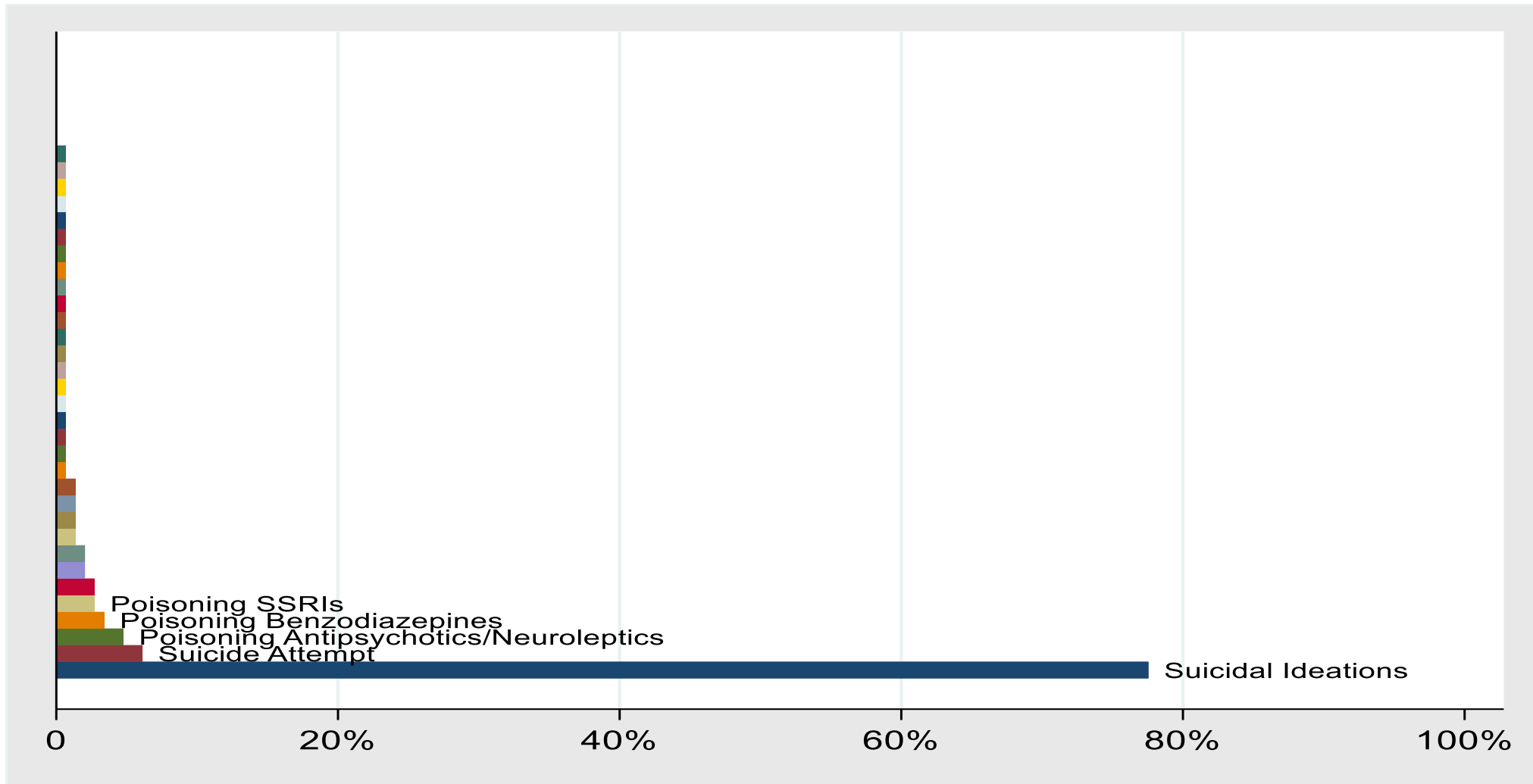# What types of MH ER visits are most common?

primary admission diagnosis of MH
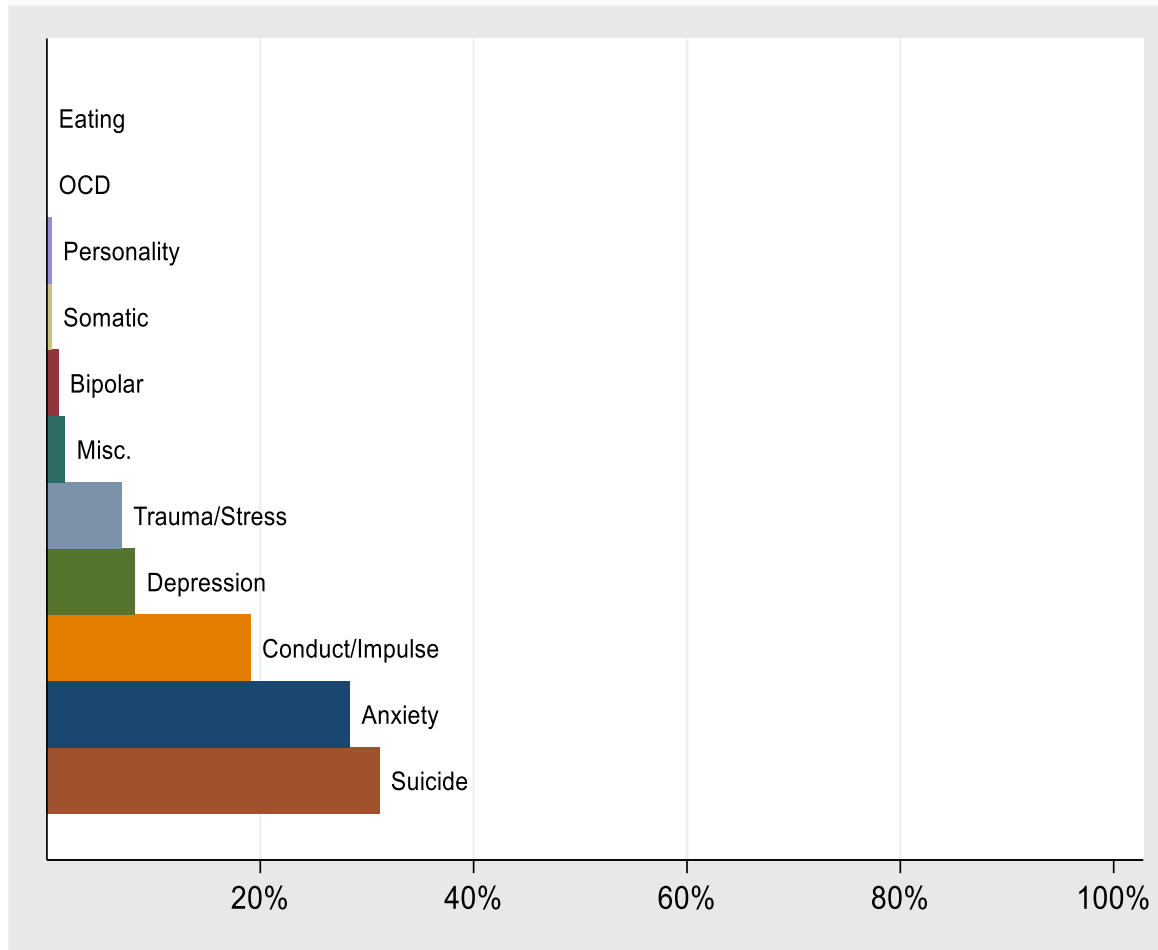
What types of Suicide ER visits are most common at Copley?

primary admission diagnosis of MH

Key Findings: # of visits and change from 2016 to 2017

- # of ER visits at Copley by category
  - Between 300-350 SUD visits a year of any SUD diagnosis, between 90-100 admission SUD diagnoses
  - Between 1400-1600 MH visits a year of any MH diagnosis, between 225-245 admission MH diagnoses
  - Between 95-108 Suicide visits a year of any suicide diagnosis, between 66-81 admission suicide diagnoses
- Change from 2016 to 2017
  - The number of any diagnosis SUD visits is decreasing, # of primary SUD is increasing slightly.
  - The number of MH visits of any and primary type are decreasing slightly.
  - The number of suicide visits is increasing, this is true in most hospitals statewide.

Key Findings: Number of visits by age and gender

- SUD primary admission visits are disproportionally men and older individuals.
- MH primary admission visits are disproportionally women and the proportion of 18-24 year olds is higher than statewide.
- Suicide primary admission visits are disproportionally women and female 18-24 year olds are a higher proportion at Copley than Statewide.

Key Findings: Type of ER visit

- The most common primary SUD visits are alcohol and opioids.
- The most common primary MH visits are suicide and anxiety. Copley has more conduct/impulse disorder primary admission visits than statewide.
- The most common primary suicide admissions visits were for suicidal ideation, suicide attempt and poisoning.

Thank you!

Questions?

anne.paumgarten@lamoille.org