Identifying Adult Mental Disorders with Existing Data Sources

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Everything that can be counted does not necessarily count;
everything that counts cannot necessarily be counted.

Albert Einstein (1879-1955)

Sources of Existing Information about Adult Mental Disorders in the US

Administrative data

- Generated as a by-product of billing for medical services

General population surveys

- *Behavioral health surveys*
- General health and health care surveys

Practice-based surveys and data

- Provider surveys
- Institutional administrative data

Administrative Data
General Characteristics

Dependent on treatment – No information about untreated individuals

Clinical diagnoses – Uncertain criterion validity, though ecological validity

Service eligibility - Able to determine entrance/exit from population

Treatment information – Not dependent on individual recall

Longitudinal and continuous structure – Captures sequences of services and trends

Twelve Month Treatment of Mental Disorders Ascertained by Structured Interview of US Adult Population

	Mental Health Sector	General Medical Sector	Either Sector
Panic disorder	34.7	43.7	59.1
Major depression	32.9	32.5	51.7
PTSD	34.4	31.3	49.9
Bipolar disorder	33.8	33.1	48.8
Alcohol dependence	35.1	19.3	43.6
Drug dependence	42.9	23.9	49.8

Wang PS et al., *Arch Gen Psychiatry* 2005 (NCS-R)

Detected and Undetected Psychopathology in Claims Data
Adult Major Depression

	Clinically Detected (n=256)	Clinically Undetected (n=268)	*p*
Age, yr (mean)	57.1	60.9	.001
PHQ (mean)	17.8	16.5	<.001
Self-rated health (mean)	43.3	51.8	<.001
Female	65.7	51.6	.001
Panic attacks	44.5	28.2	<.001

Katon et al *Med Care* 2004. Group health cooperative adults with PHQ (≥10) and diabetes with and without outpatient claim for depression in past 12 months. Self-rated health on a 100 point scale.

Agreement between Research and Clinical Diagnoses

	Clinical Diagnosis, Primary			
SCID Diagnosis	Mood	Anxiety	Adjustment	Other
Mood (n=96)	51%	4%	33%	12%
Anxiety (n=23)	22%	26%	39%	13%
Adjustment (n=19)	32%	0%	53%	13%
Other (n=26)	23%	0%	27%	50%

Shear MK et al., *Am J Psych* 2000, kappa any bipolar (0.18), any mood (0.33), any anxiety (0.12), any substance (0.29), any eating disorder (0.28). (0-0.20, slight, 0.21-0.40, fair)

Administrative Data Sources

Public payers:

- Medicaid
- Medicare
- Veterans Health Administration/TriCare

Commercial insurance:

- MarketScan (large group plans sponsored by self-insured employers)
- Health Care Cost Institute (a few large insurers)
- IMS Pharmetrics (commercial PPO plans)

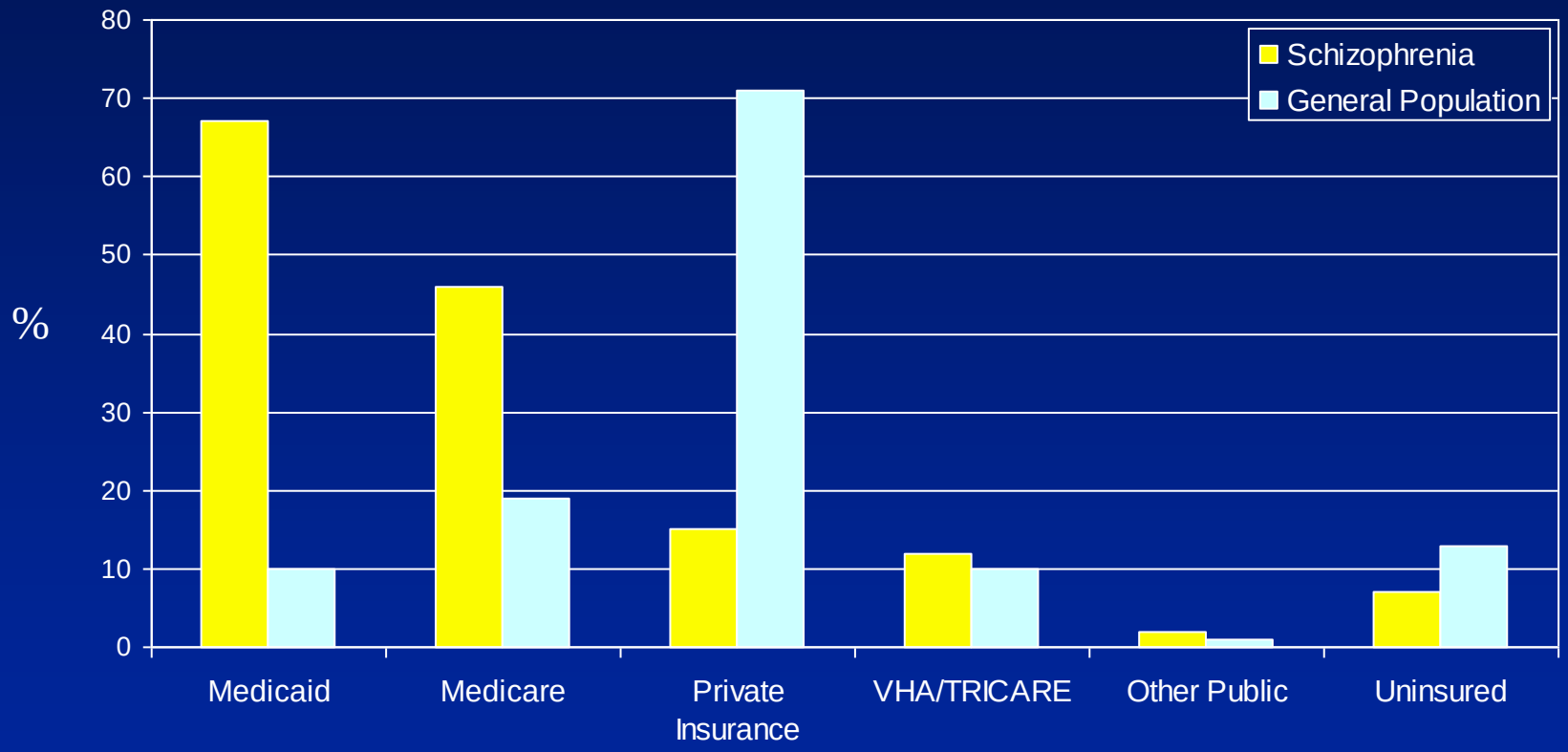
Administrative Data
Medicaid – General Considerations

Medicaid – National data from CMS:

- Largest public funder of mental health services
- 60 million covered individuals
  - Aged (9%), Disabled (15%), Adult (27%), Children (48%)
- All diagnoses – difficult to survey populations (schizophrenia)
- Delays (2011 currently available)
- With permission, can link to other data sources
- Managed care data generally comparable to FFS data

More recent data available directly from individual states (2014)

Health Care Coverage of Schizophrenia



Khaykin et al., *Psych Serv* 2010 (MEPS data- civilian population.)

Adult Medicaid Enrollees and General Population Annual Prevalence Estimates

Disorder	12-Month Prevalence Estimates	
	Medicaid Claims	General Population (NESARC)
Depression	14.6%	5.3%
Bipolar disorder	4.0%	2.8%
Psychotic disorder	5.1%	0.9%*
Anxiety disorder	6.7%	11.1%
Substance use disorder	15.1%	9.4%

Medicaid (Maryland): Thomas MR et al., *Psych Serv* 2005, any diagnosis within groups.

General Population: Hasin DS & Grant BF, *Soc Psych Psychiatr Epidemiol* 2015; NESARC Wave 2

* "Did a doctor or other health professional ever diagnosis you with schizophrenia or psychotic illness or episode?"

Commercial Insurance Administrative Data

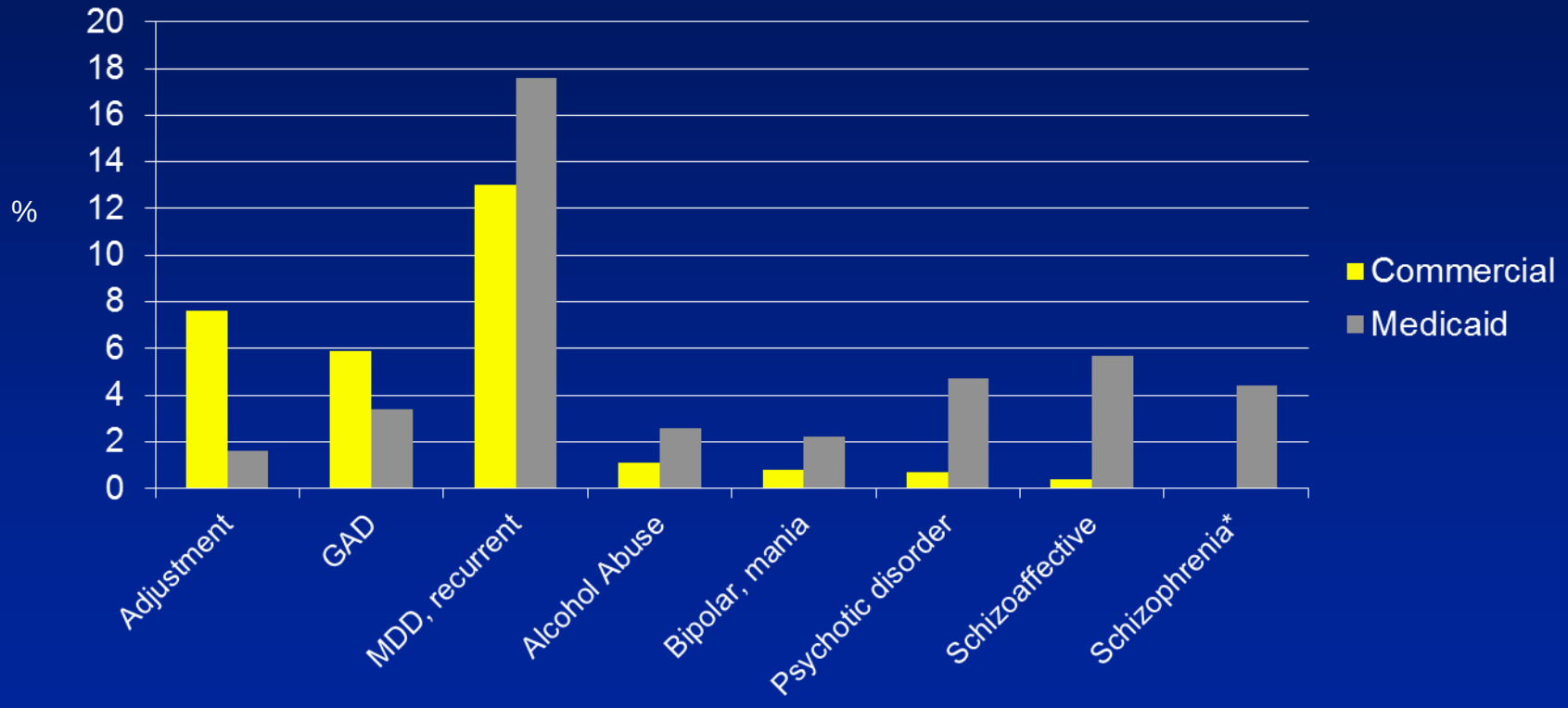
Similarities with administrative data

- No information about untreated/undiagnosed individuals
- Clinical rather than research diagnoses

Specific considerations

- Available with approximately a 1 year delay
- Coverage is not national
- No information regarding race/ethnicity
- More difficult to link to other data sets

Annual Treated Prevalence of Selected Mental Disorders: Commercial Insurance and Medicaid



Rutgers University, data on file, Commercial (MarketScan), Medicaid (MAX)
*schizophrenia, undifferentiated

Administrative Data Summary

Strengths

- No response bias
- Not dependent on respondent recall or stigma
- Coverage of difficult to survey populations (e.g. schizophrenia)
- Large populations permit measurement of rare conditions (e.g. suicide)

Limitations

- No measurement of untreated conditions
- Clinical rather than research diagnoses
- Not representative of general population
- No measures of impairment or symptom severity

Population Surveys
with Mental Disorders Information

Behavioral Health Surveys

National Survey on Drug Use and Health (annual)

National Epidemiologic Survey on Alcohol and Related Conditions (2001-2003, 2004-2005, 2011)

National Comorbidity Survey (1990-1992, 2001-2003)

General Health Surveys

National Health Interview Survey (annual)

Behavioral Risk Factor Surveillance Survey (annual)

National Health and Nutrition Examination Survey (annual)

Medical Expenditure Panel Survey (annual)

National Health Interview Survey (NHIS)

Size: 30,000-45,000 adults/year yielding 100,000 household members

Informant: Individual self-report, in-person household interview

Design: Complex, cross sectional, civilian noninstitutionalized household population

Mental health information:

- K-6 (past 30 days, serious psychological distress)
- Have you ever been told by a doctor or other health professional that you had bipolar disorder? schizophrenia? mania or psychosis? (2007)
- Mental health care or counseling use
- Presence and duration of “mental, emotional, or behavioral problem”
- Frequency, severity, take medication (subsample)
  - “feel depressed”
  - “worried, nervous or anxious items”

Strengths: Continuous data since 1957, response rate (77.6% in 2012), nationally representative

Limitations: Cross sectional, not capture individuals outside of households, no diagnostic measures.

Behavioral Risk Factor Surveillance System (BRFSS)

Size: 450,000 adults/year

Informant: Individual self-report

Design: State-based, telephone survey, state-based weights forced to population

Mental health information (optional state modules)

- PHQ-8 (45 states in 2006 and 2008, 12 in 2010)
- Lifetime diagnosis of anxiety, lifetime diagnosis depression (2006, 2008, 2010)
- K-6 (past 30 days) (2007, 2009) (37 states)
- Mentally unhealthy days in last 30 days (1 item, 50 states) (2007, 2009)
- Treatment related to mental health condition (1 item, 50 states) (2007, 2009)

Strengths: State level estimates, large sample size

Limitations: Few years, based on landlines, not cover populations that use cellular phones before 2011 or without phones, recall bias and social desirability effects, exceedingly low response rates: contacted: median: 11.1% (6.1% - 23.7%), overall completion: 6.4% (2.6%-18.4%) (2012).

National Health & Nutrition Examination Survey (NHANES)

Size: 5,000 adults/year

Informant: Individual self-report, physical health examination, lab testing

Design: Cross sectional, complex sampling, noninstitutionalized population

Mental health information:

- PHQ-9, sleep disorders questionnaire, smoking status, mentally unhealthy days
- Prescribed medications past month.
- Generalized anxiety disorder, panic disorder (1999-2004)*

Strengths: National representative sampling, acceptable response rate (69.5%, 2011-2012), wealth of physical health data

Limitations: Small sample size, limited mental health information, no expert validation of depression (PHQ-9).

*Young adults 20-39 years.

Medical Expenditure Panel Survey (MEPS)

Size: Approximately 14,000 families, 35,000 persons (household component)

Design: Complex, household population, panels followed up to 2 years

Mental health-related variables:

- Conditions (respondent report, verified by provider information)
- Psychotropic medication purchases
- Psychotherapy/counseling visits
- Visits to mental health specialists
- Activity limitations
- *SF-12 Mental Component Summary (Adults self-report)
- *Patient Health Questionnaire-2 (Adults self-report)
- *K-6 (Adults self-report)

Strengths: Nationally representative, continuous, 3 interviews per year.

Limitations: Modest response rate: 56.3% (2012), household informant, except for SF-12, PHQ-2, and K-6 no systematic mental health status information.

Population Surveys
Summary

Strengths

- Representative of general adult population
- Information on untreated individuals
- Annual information permitting trend analysis

Limitations

- Limited coverage of mental disorders or psychological distress
- No information on severe mental disorders
- Limited to household respondents
- Modest to low response pose threat of selection bias

Practice-based Surveys and Data

Provider surveys

- National Ambulatory Medical Care Survey
- National Hospital Ambulatory Medical Care Survey (Outpatient, Emergency Department, Ambulatory Surgery Center)

Institutional administrative data

- Hospital Cost and Utilization Project (Nationwide Inpatient Sample)
- National Hospital Discharge Survey (1965-2010)

National Ambulatory Medical Care Survey

Size: 30,000 visits/year (1993-2010), 76,000 (2012)

Design: Office-based physician visits during sampling week, complex design

Mental health information:

- Mental health reasons for visit
- Clinical diagnoses
- Medications prescribed or monitored
- Psychotherapy/counseling
- Depression regardless of diagnosis (2005-2010, 2012)
- Includes visits to psychiatrists

Strengths: All payers, measures mental illness burden in office-based practice, trend analyses possible.

Limitations: Visits not unduplicated patients, modest to low response rate (60.6%, 2005-2010, 38.4%, 2012), does not capture outpatient care provided in CMHCs, hospital outpatient clinics, substance abuse clinics, and other specialty outpatient settings.

Hospital Cost and Utilization Project
National Inpatient Sample (HCUP NIS)

Size: 8 million discharges from approximately 1,000 hospitals (annually)

Scope: Non-federal, short-term general and other specialty hospitals

Design: 1988-2011 participating states, weighted by ownership, size, teaching status, location, region; 2012 (20% national sample of discharges community hospitals)

Mental health information:

- Discharge diagnoses
- Procedures (e.g., ECT)
- Disease severity measures (based on diagnoses, demographics, LOS)

Strengths: Large sample size, all payers including uninsured, national estimates, analysis of trends.

Limitations: Discharges not unduplicated individuals, limited clinical information, sample does not include psychiatric hospitals or alcoholism/chemical dependency treatment facilities.

Perspectives on Mental Illness Surveillance

Unlike behavioral health surveys, none of the administrative and general survey databases are designed to monitor mental illness in the population.

They have limited coverage of major disorders and psychological distress

Mental illness surveillance should *ideally* include measures of:

- Major disorders (mood, anxiety, substance use, psychotic disorders)
- Impact on function (work, household, family, social)
- Quality of life
- Educational attainment
- Access to health and mental health care
- General health outcomes