Information and Communication Technology for Addiction Surveillance

Examples from the USA

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Associate Director for Economics Research
Division of Epidemiology, Services, and Prevention Research
US National Institute on Drug Abuse

Information & Communication Technology
Per I Sistemi Delle Dipendenze
April 14-15, 2010, Verona, Italy

Addiction Epidemiology in the USA

- Epidemiological data collected since the 1970s
- Useful for
  - Policy
  - Research
  - Information requests (public, media)
  - Monitoring
- Significant investment in old technologies, methods
- Increasing use of information and communications technologies
- Some examples…

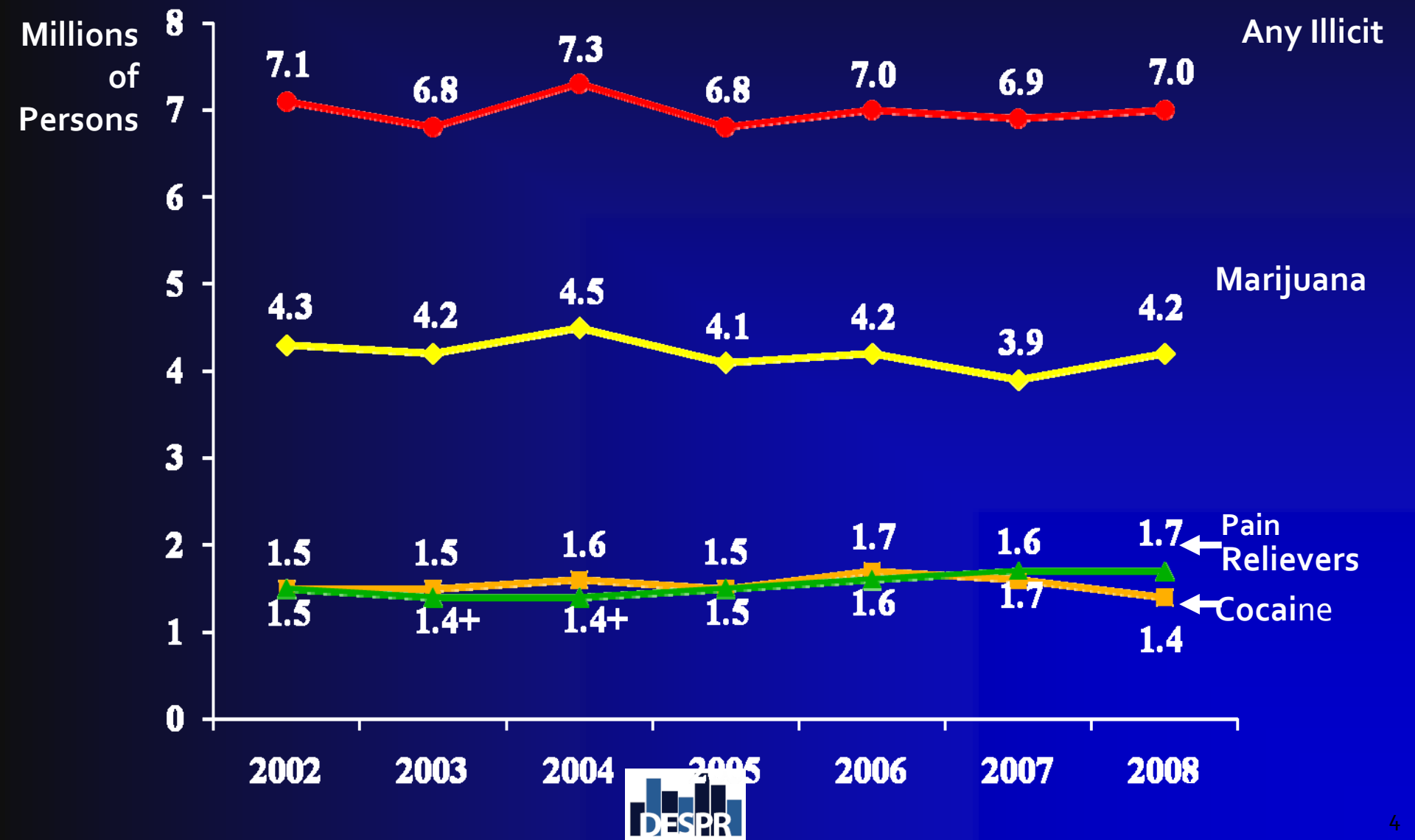
US National Survey on Drug Use and Health (NSDUH)

http://oas.samhsa.gov/nsduh.htm

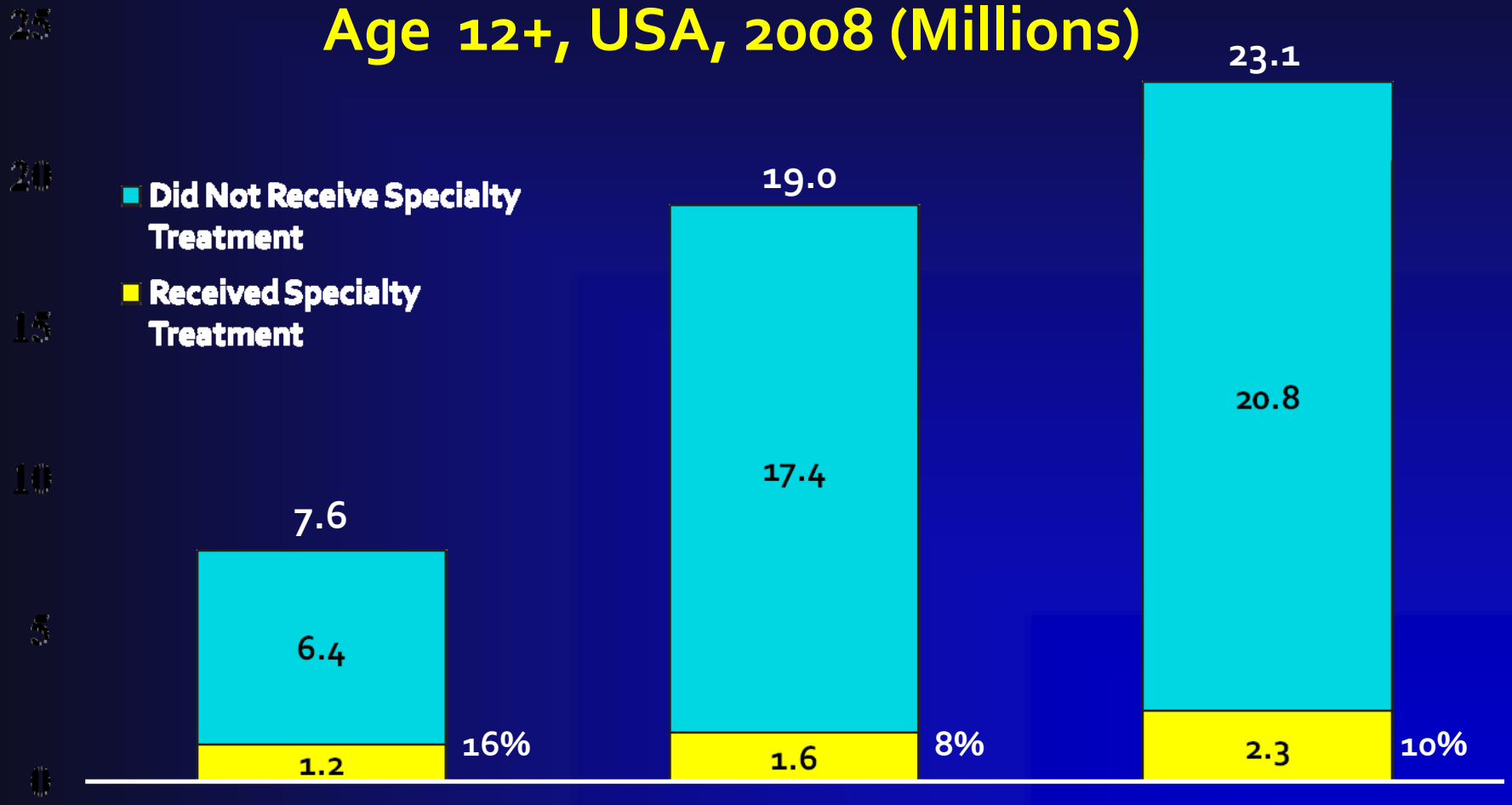
- Substance Abuse and Mental Health Services Administration (SAMHSA)
- Face-to-face interview of the civilian, noninstitutional population age 12+, conducted annually
- Computer-assisted, self-administered
  - Higher rates of risky, illegal activities reported
  - Automated consistency checking, editing
  - Frequent transmission of data
- 68,736 respondents in 2008
- Representative both nationally and at state level

Fig 7.3

NSDUH Findings: Past Year Illicit Drug Dependence/Abuse, Age 12 or Older, USA, 2002-2008



NSDUH Finding: Past Year Need for and Receipt of Specialty Treatment for Illicit Drug or Alcohol Use, Age 12+, USA, 2008 (Millions)



Web-Based IT for Presenting NSDUH (and Other) Data



http://www.nationaloutcomemeasures.samhsa.gov/

DESPR

State Data Expand All | Collapse All

+ Mental Health Services

+ Substance Abuse Treatment

+ Substance Abuse Prevention

+ Substance Abuse Prevention and Treatment (SAPT) Block Grant Funding

State Substance Abuse Program Descriptions

State Mental Health Program Descriptions (PDF - 969 KB)

+ Sample Epidemiological Profiles

State Data

This portion of the web site contains information to supplement the National Outcome Measures (NOMs).

The left-hand panel lists the major sections within State Data.

- **Mental Health Services**, **Substance Abuse Treatment**, and **Substance Abuse Prevention**—Contain charts with trend data, State maps, and substate maps. Expand the entries to see all of the topics covered.
- **Substance Abuse Prevention and Treatment (SAPT) Block Grant Funding**—Contains trend data on block grant funding for substance abuse treatment and rehabilitation, tuberculosis services, primary prevention, HIV early intervention services, administration, and services to pregnant women and women with dependent children.
- **State Substance Abuse and Mental Health Program Descriptions**—These two sets of descriptions include summaries of programs in each State. The descriptions include expenditures, State performance measures, and State indicators. The mental health program description link is to a PDF document, and opens to the appendix containing the summaries, while the substance abuse prevention/treatment link opens to an index page with links to the individual State program descriptions.
- **Epidemiological Profiles**—These profiles identify substance related problems across state/community, high risk/target populations/subgroups for the key problems identified, and data limitations/issues. They were developed by individual State Epidemiological Outcomes Workgroups that were funded through the Center for Substance Abuse Prevention (CSAP). Follow the links to the left to various States' and Territories' websites to see examples of these profiles.

Sources of data include SAMHSA national-level datasets; the SAMHSA Formula and Discretionary

State Data Expand All | Collapse All

+ Mental Health Services

- Substance Abuse Treatment
  + Trends
  + State Maps
  - Substate Maps
    Needing But Not Receiving Treatment

+ Substance Abuse Prevention

+ Substance Abuse Prevention and Treatment (SAPT) Block Grant Funding

State Substance Abuse Program Descriptions

State Mental Health Program Descriptions (PDF - 969 KB)

+ Sample Epidemiological Profiles

Font Size A A A Printer-Friendly

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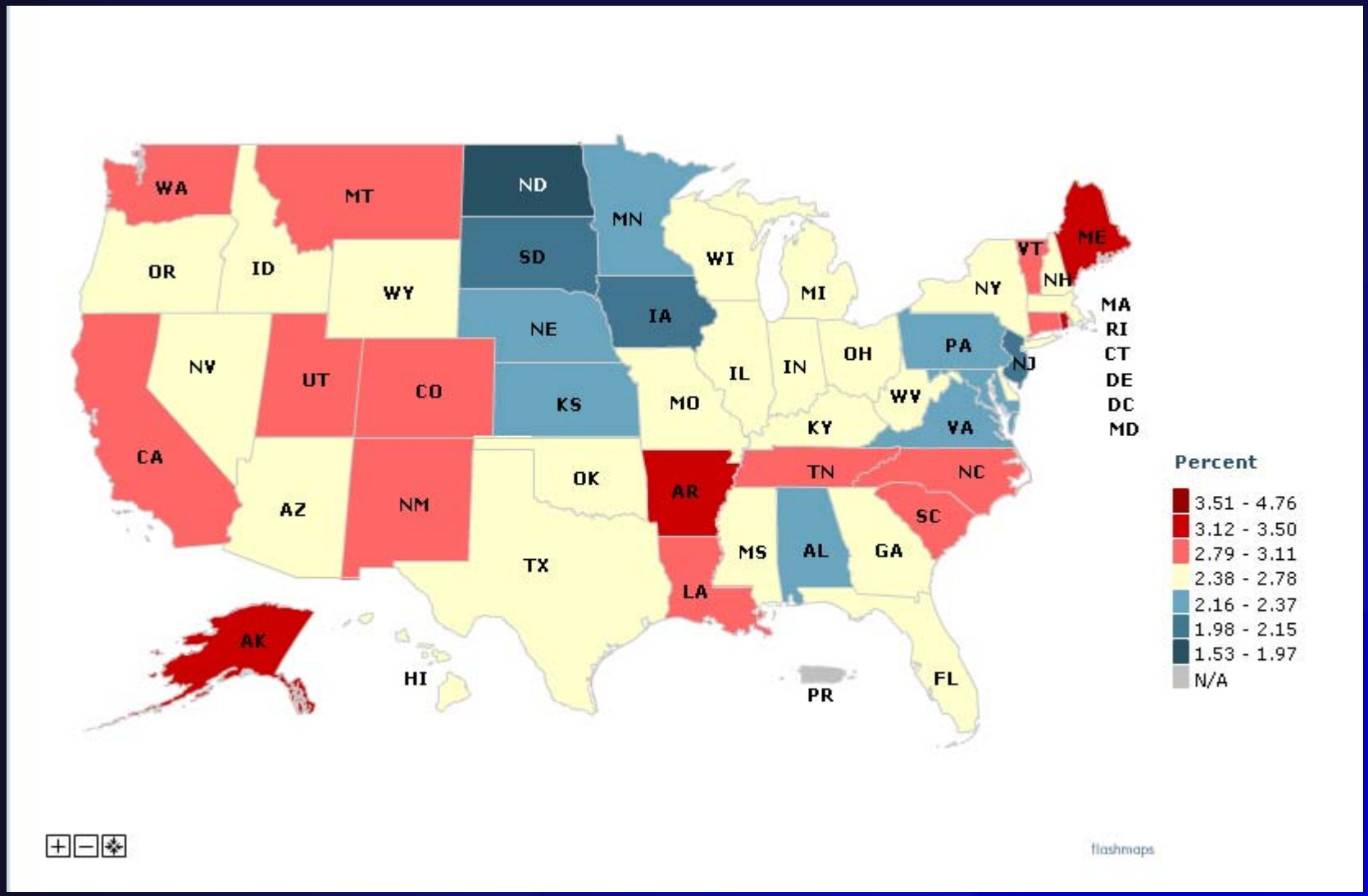
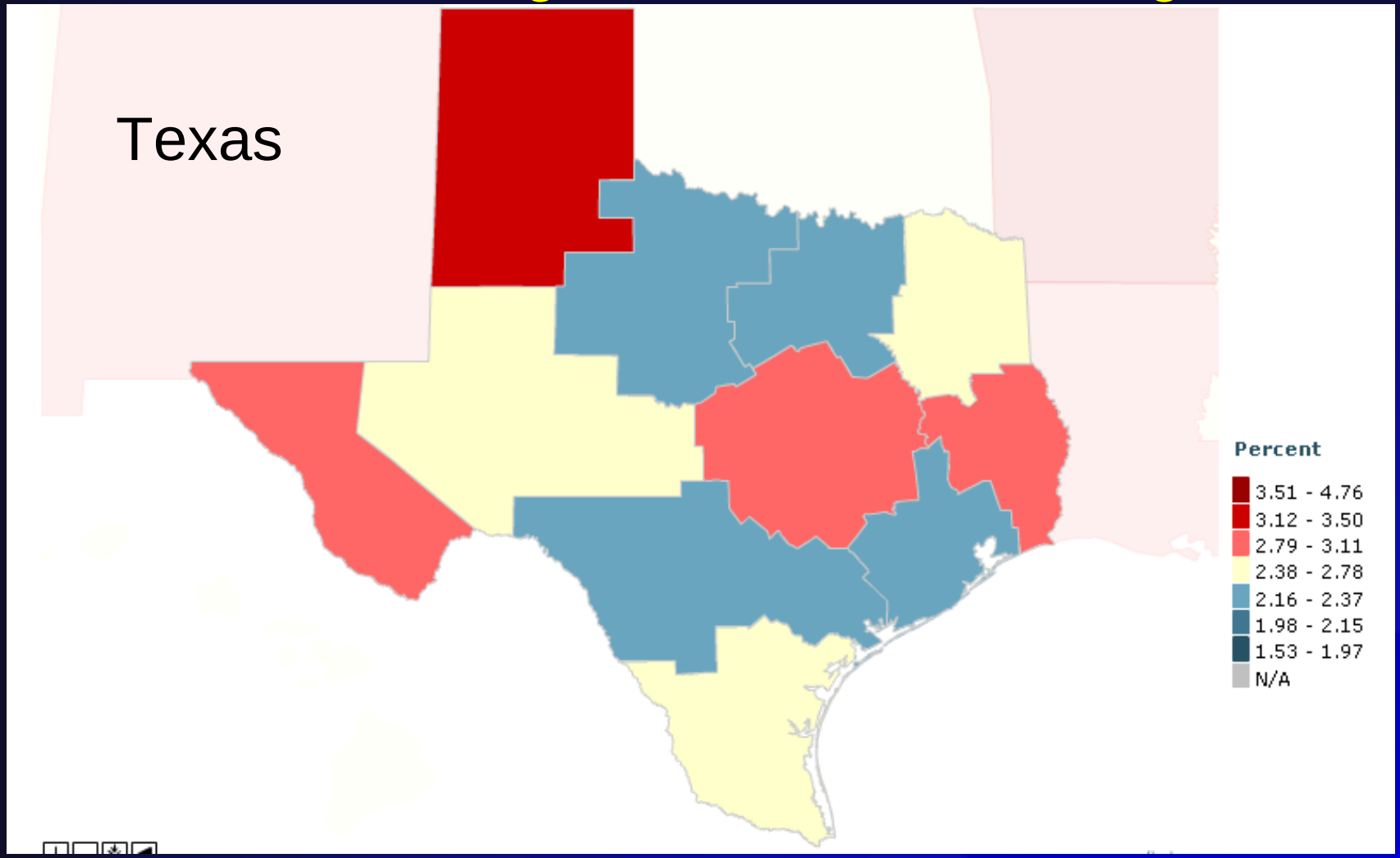
DESPR

Percent of Population Age 12+ Needing but Not Receiving Treatment for illicit Drug Use



Percentage of the Population Age 12+ Needing But Not Receiving Treatment for Illicit Drug Use



Another Example: SAMHSA's Treatment Episode Data Set (TEDS)

http://oas.samhsa.gov/dasis.htm#teds2

- Compilation of admissions and discharge data from state systems
- Characteristics of individuals in treatment
- Publicly-monitored treatment programs
- ~2,000,000 admissions from 10,000+ facilities annually
- Current incarnation from 1992-present

Web-Based IT for Analyzing Data

http://www.icpsr.umich.edu/SAMHDA/



Description & Citation | Browse Documentation | Download Data | Analyze & Subset | Related Literature

Description & Citation--Study No. 25221

- Bibliographic Description
- Scope of Study
- Methodology
- Access and Availability

Bibliographic Description

ICPSR Study No.: 25221

Persistent URL: http://dx.doi.org/10.3886/ICPSR25221

Title: Treatment Episode Data Set -- Admissions (TEDS-A) -- Concatenated, 1992 to Present

Alternate

Online Analysis Using SDA

The online analysis system allows you to run both simple and complex analyses, recode and compute new variables, and subset variables or cases for downloading. The software powering the system, named Survey Documentation and Analysis (SDA), was developed by the Computer-assisted Survey Methods Program (CSM) at the University of California, Berkeley.

Click on the link(s) below to begin using SDA.

- Treatment Episode Data Set -- Admissions (TEDS-A) -- Concatenated, 1992 to Present

Online Analysis Using Quick Tables

Quick Tables allows you to produce analytic tables by choosing from among pre-selected high-interest variables available in drop-down menus. The software powering the system, named Survey Documentation and Analysis (SDA), was developed by the Computer-assisted Survey Methods Program (CSM) at the University of California, Berkeley.

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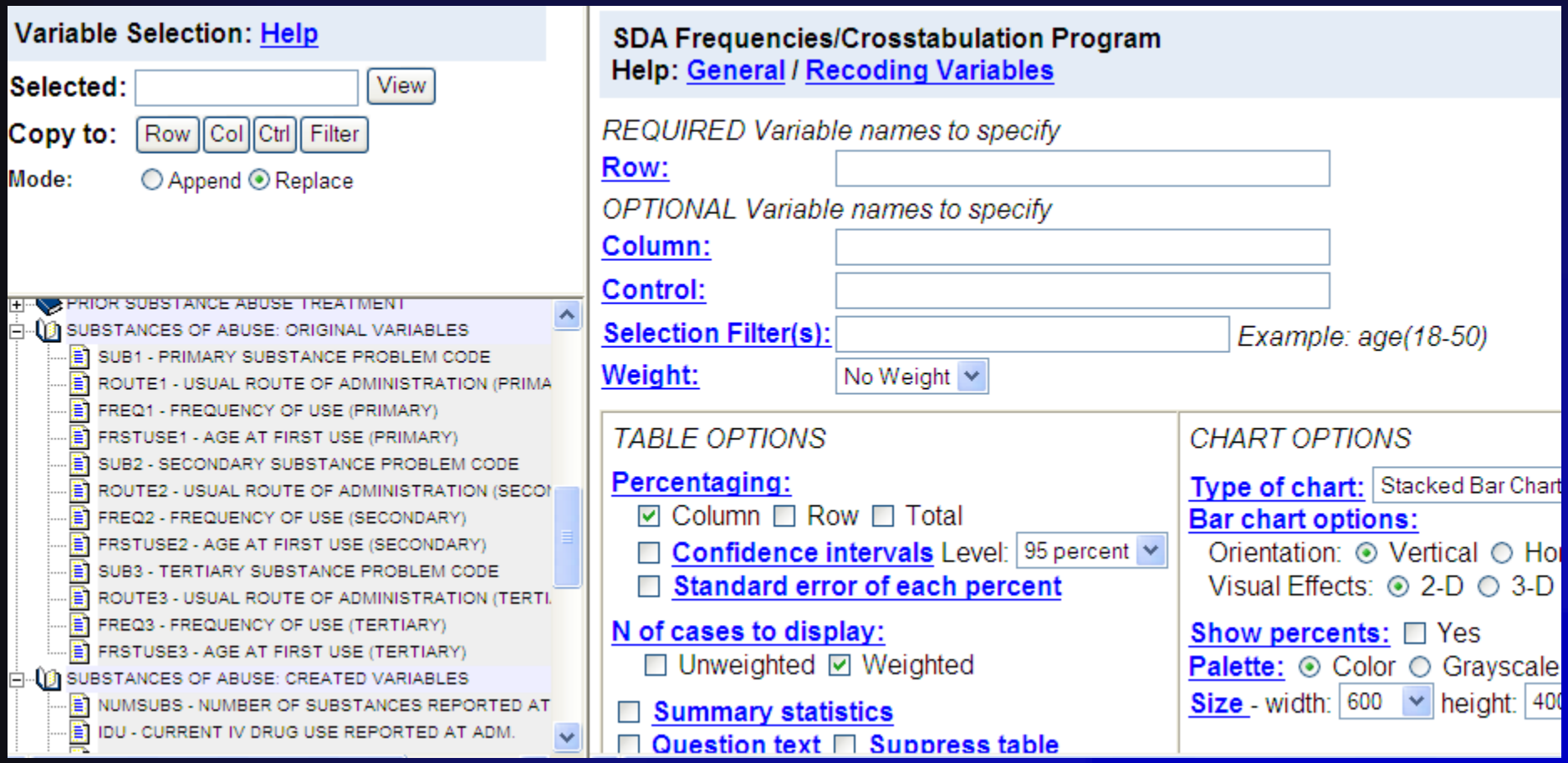
Variable Selection: Help
Selected:
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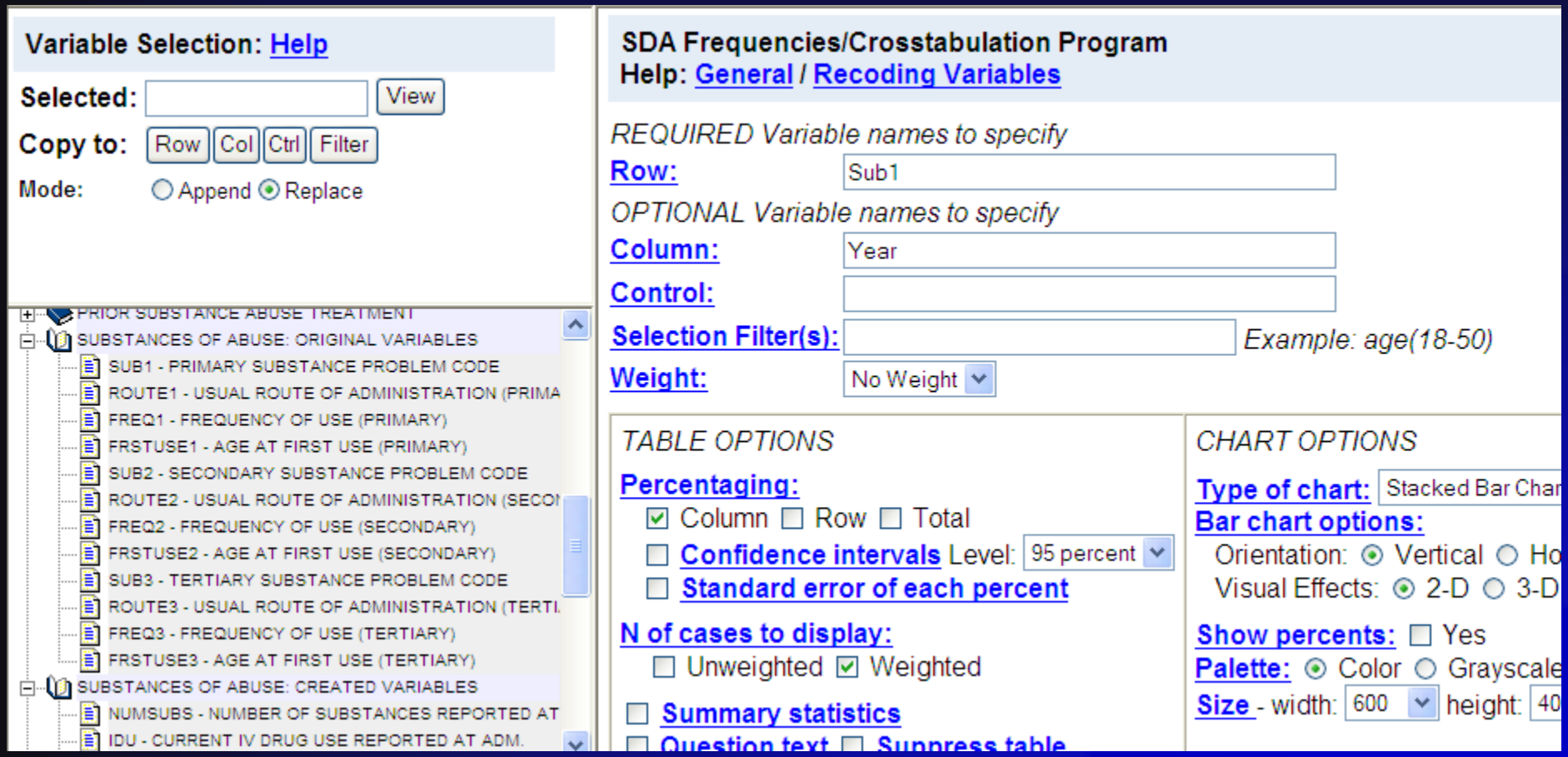
Mode:
Append
Replace
PRIOR SUBSTANCE ABUSE TREATMENT
SUBSTANCES OF ABUSE: ORIGINAL VARIABLES
SUB1 - PRIMARY SUBSTANCE PROBLEM CODE
ROUTE1 - USUAL ROUTE OF ADMINISTRATION (PRIMA
FREQ1 - FREQUENCY OF USE (PRIMARY)
FRSTUSE1 - AGE AT FIRST USE (PRIMARY)
SUB2 - SECONDARY SUBSTANCE PROBLEM CODE
ROUTE2 - USUAL ROUTE OF ADMINISTRATION (SECO
FREQ2 - FREQUENCY OF USE (SECONDARY)
FRSTUSE2 - AGE AT FIRST USE (SECONDARY)
SUB3 - TERTIARY SUBSTANCE PROBLEM CODE
ROUTE3 - USUAL ROUTE OF ADMINISTRATION (TERTI
FREQ3 - FREQUENCY OF USE (TERTIARY)
FRSTUSE3 - AGE AT FIRST USE (TERTIARY)
SUBSTANCES OF ABUSE: CREATED VARIABLES
NUMSUBS - NUMBER OF SUBSTANCES REPORTED AT
IDU - CURRENT IV DRUG USE REPORTED AT ADM.
SDA Frequencies/Crosstabulation Program
Help: General / Recoding Variables
REQUIRED Variable names to specify
Row:
OPTIONAL Variable names to specify
Column:
Control:
Selection Filter(s):
Example: age(18-50)
Weight:
No Weight
TABLE OPTIONS
Percentaging:
Column
Row
Total
Confidence intervals
Level:
95 percent
Standard error of each percent
N of cases to display:
Unweighted
Weighted
Summary statistics
Question text
Suppress table
CHART OPTIONS
Type of chart:
Stacked Bar Chart
Bar chart options:
Orientation:
Vertical
Visual Effects:
2-D
3-D
Show percents:
Yes
Palette:
Color
Grayscale
Size - width:
600
height:


Variable Selection: Help
Selected:
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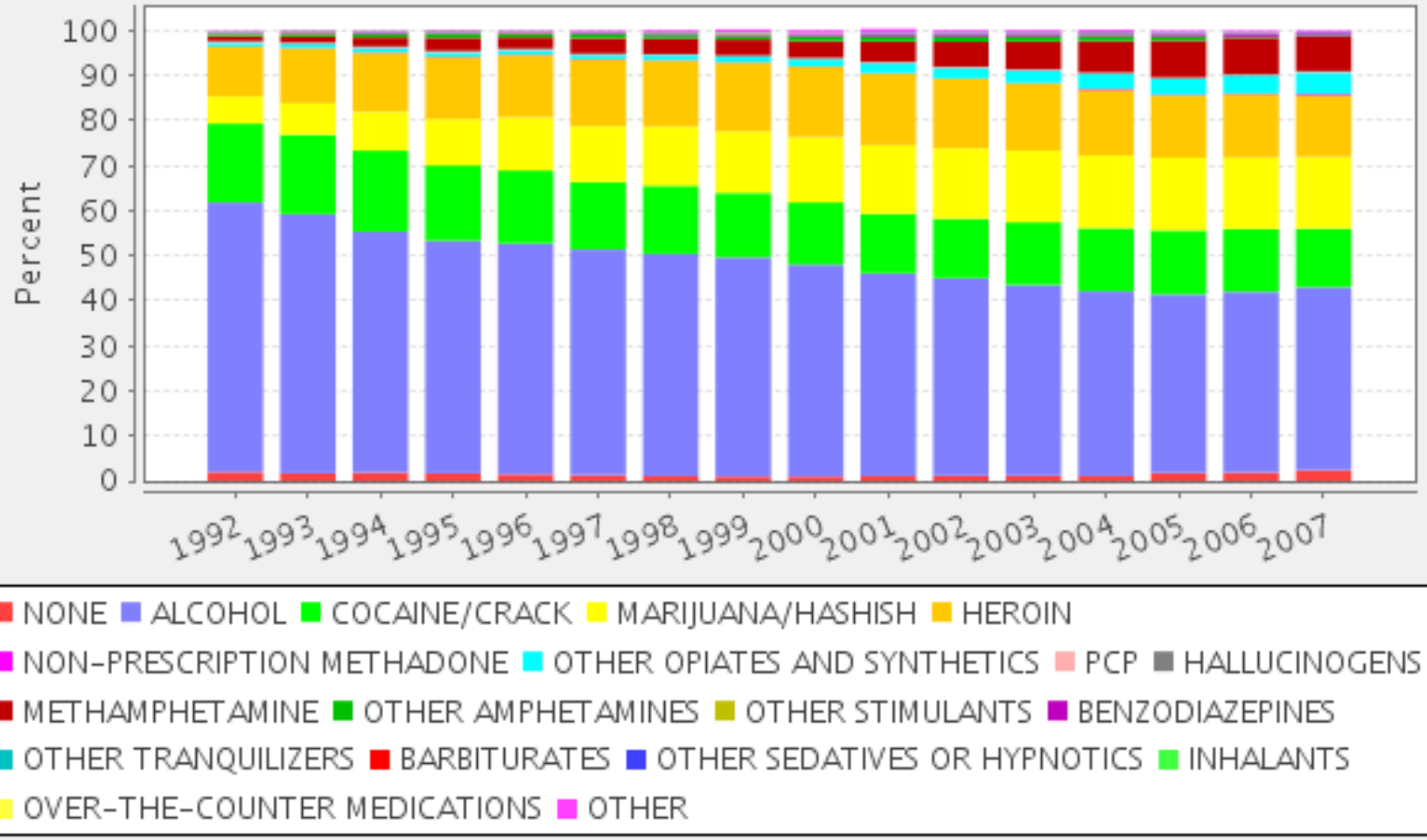
Selection Filter(s):
Example: age(18-50)
Weight:
No Weight
TABLE OPTIONS
Percentaging:
Column
Row
Total
Confidence intervals
Level:
95 percent
Standard error of each percent
N of cases to display:
Unweighted
Weighted
Summary statistics
CHART OPTIONS
Type of chart:
Stacked Bar Char
Bar chart options:
Orientation:
Vertical
Visual Effects:
2-D
3-D
Show percents:
Yes
Palette:
Color
Grayscale
Size - width:
600
height:
40

PRIMARY SUBSTANCE PROBLEM CODE BY YEAR OF ADMISSION



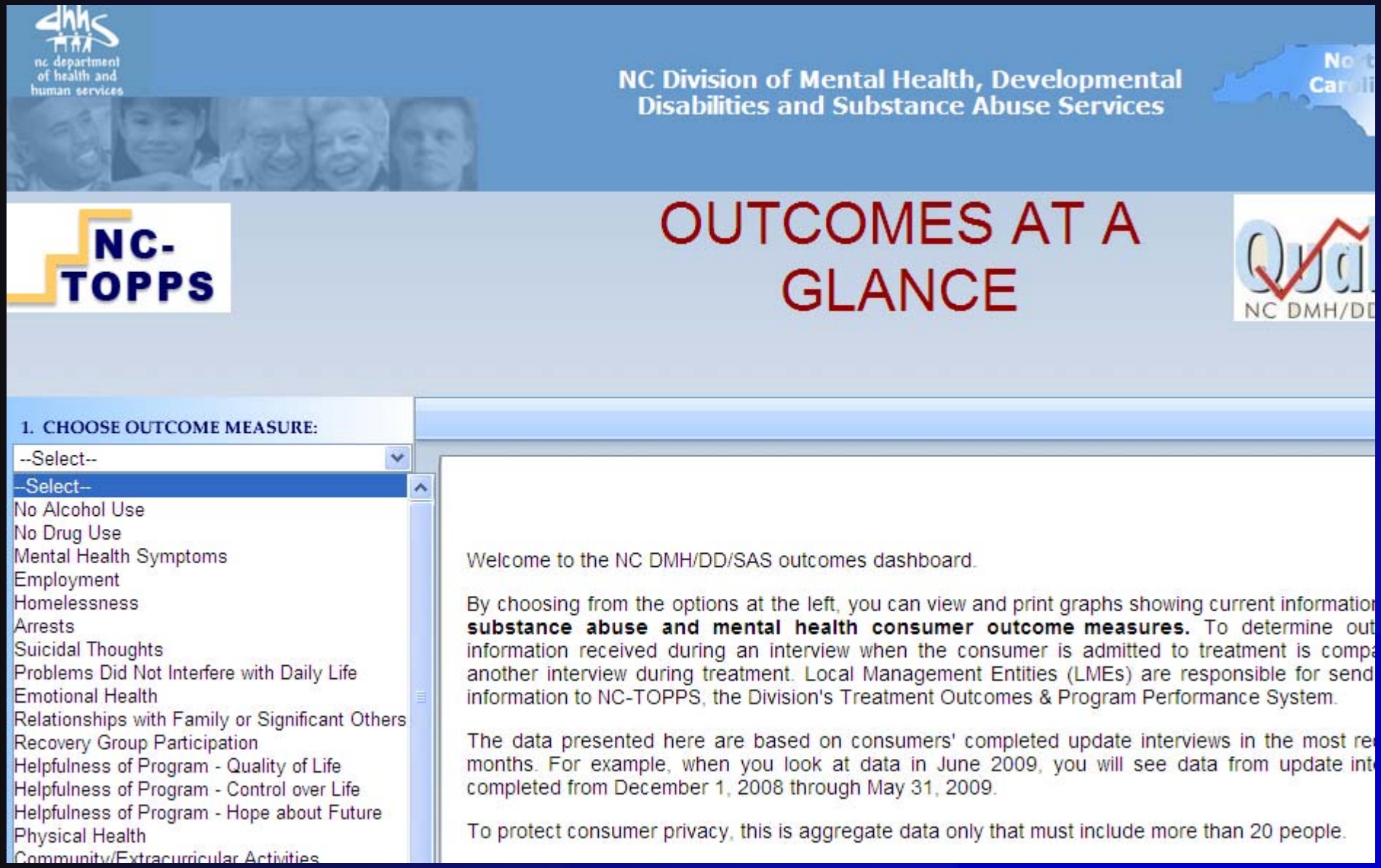
IT to Provide Information to Providers

- As close to real time data as possible
- Simple, clean user interface
- Several levels of access
- Example from North Carolina

Example: NC Treatment Outcomes and Program Performance System

http://nctopps.ncdmh.net/dashboard/

- Initially funded by SAMHSA
- Providers interview clients at intake, 3, 6, and 12 months, and at episode completion
- Substance use, suicidal thoughts, helpfulness of program, etc.
- Providers submit data and see results via the Web
- Dashboard (LME/Regional Authority Level)


nc department of health and human services
NC Division of Mental Health, Developmental Disabilities and Substance Abuse Services
NC-TOPPS
OUTCOMES AT A GLANCE
NC DMH/DD
1. CHOOSE OUTCOME MEASURE:
--Select--
--Select--
No Alcohol Use
No Drug Use
Mental Health Symptoms
Employment
Homelessness
Arrests
Suicidal Thoughts
Problems Did Not Interfere with Daily Life
Emotional Health
Relationships with Family or Significant Others
Recovery Group Participation
Helpfulness of Program - Quality of Life
Helpfulness of Program - Control over Life
Helpfulness of Program - Hope about Future
Physical Health
Community/Extracurricular Activities
Welcome to the NC DMH/DD/SAS outcomes dashboard.
By choosing from the options at the left, you can view and print graphs showing current information
substance abuse and mental health consumer outcome measures. To determine out
information received during an interview when the consumer is admitted to treatment is compa
another interview during treatment. Local Management Entities (LMEs) are responsible for send
information to NC-TOPPS, the Division's Treatment Outcomes & Program Performance System.
The data presented here are based on consumers' completed update interviews in the most re
months. For example, when you look at data in June 2009, you will see data from update int
completed from December 1, 2008 through May 31, 2009.
To protect consumer privacy, this is aggregate data only that must include more than 20 people.

DESPR

2. CHOOSE POPULATION:

☐ State ☑ LME

3. CHOOSE UP TO 5 LMEs:

Alamance-Caswell
Albemarle
Beacon Ctr
CenterPoint
Crossroads
Cumberland

add remove

Durham
OPC

4. CHOOSE CONSUMER GROUP:

- ○ Adult Mental Health
- ◉ Adult Substance Abuse
- ○ Adolescent Mental Health
- ○ Adolescent Substance Abuse
- ○ Child Mental Health

5. CHOOSE CHART TYPE:

◉ Column ○ Bar

☐ Show as 3D

☑ Show Value

SUBMIT RESET

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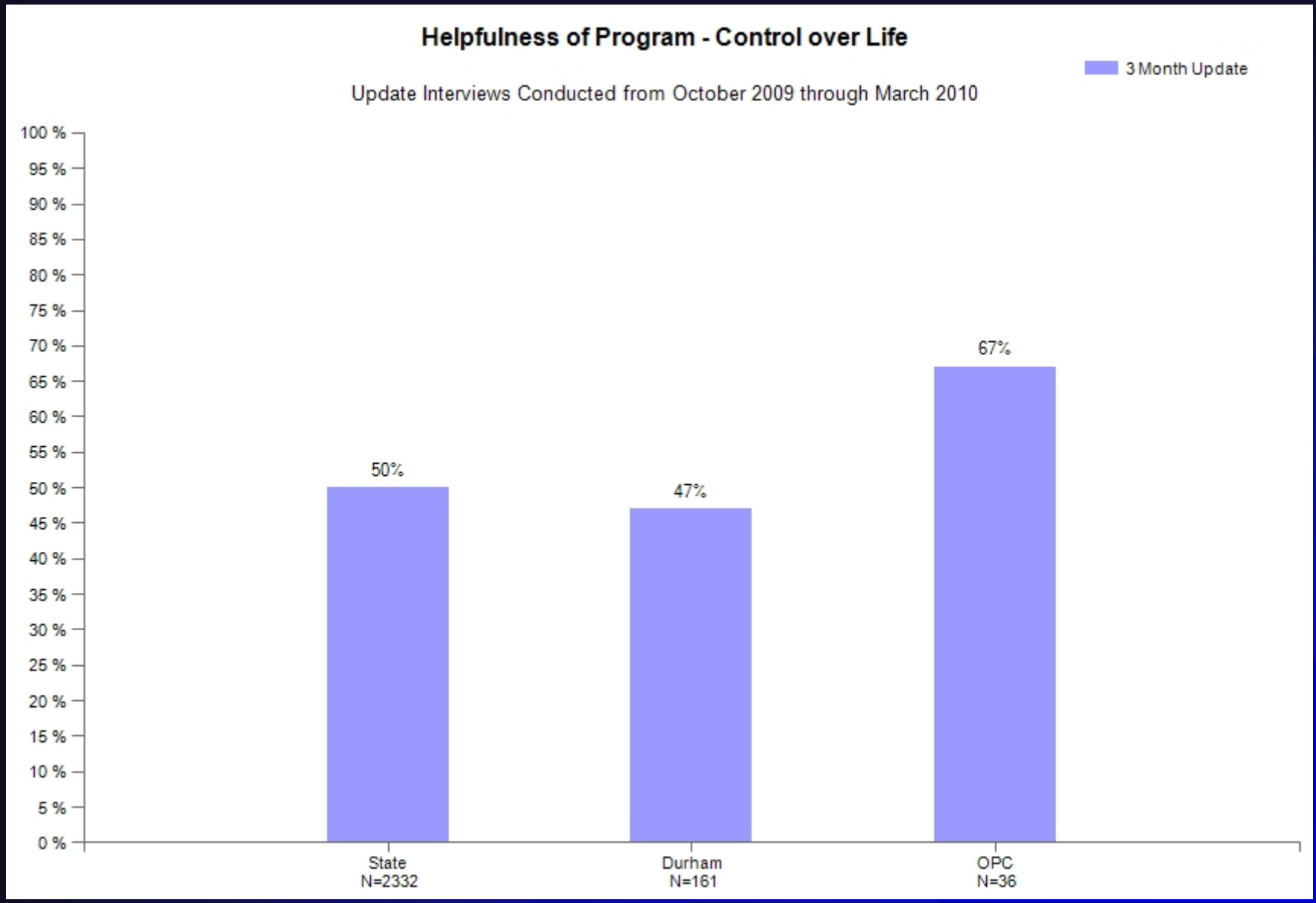
Helpfulness of Program - Control over Life
3 Month Update
Update Interviews Conducted from October 2009 through March 2010
100 %
95 %
90 %
85 %
80 %
75 %
70 %
65 %
60 %
55 %
50 %
45 %
40 %
35 %
30 %
25 %
20 %
15 %
10 %
5 %
0 %
50%
47%
67%
State
N=2332
Durham
N=161
OPC
N=36

Prevalence of Past Year Drug Use Among 12th Graders 2009

Drug	Prev.	Drug	Prev.
Alcohol	66.2	MDMA (Ecstasy)	4.3
Marijuana/Hashish	32.8	Cocaine (any form)	3.4
Vicodin*	9.7	Inhalants	3.4
Amphetamines*	6.6	Cocaine Powder	3.0
Tranquilizers*	6.3	Ritalin*	2.1
Cough Medicine*	5.9	LSD	1.9
Salvia	5.7	Provigil*	1.8
Adderall*	5.4	Ketamine	1.7
Sedatives*	5.2	Steroids	1.5
OxyContin*	4.9	Crack	1.3
Hallucinogens	4.7	Methamphetamine	1.2

* Nonmedical use



Source: Monitoring the Future

Research Projects: Diversion

- Monitor recreational users of pharmaceutical analgesics as they discuss use/abuse in internet chat rooms
- Computer algorithms to search for suspicious patterns of patient/prescriber/prescription/pharmacy combinations in proprietary marketing research databases

Areas for Improvement

- Old technology = old data
- Data quality
  - Survey response rates: 74% of selected persons completed NSDUH interview
  - Incomplete, inaccurate, inconsistent coding (e.g. DSM diagnosis is missing on most TEDS records)
- Thoughtful use of data

Thank You!



NIDA NATIONAL INSTITUTE ON DRUG ABUSE
The Science of Drug Abuse & Addiction

www.drugabuse.gov

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