Tradeoffs of Different Data Collection Designs and Other Methodological Considerations in Measuring Recovery

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Presentation to the National Academies of Sciences, Engineering, and Medicine Workshop on Integrating New Measures of Recovery from Substance Use or Mental Disorders into SAMHSA's Data Collection Program, Washington, DC, February 24, 2016. The presentation reports on treatment and research funded by the National Institute on Drug Abuse (NIDA) grants no. R37-DA11323 and R01-DA015523 to Drs. Dennis & Christy Scott. The opinions are those of the authors and do not reflect official positions of the sponsors or government. Available by contacting Michael Dennis at 448 Wylie Drive, Normal, IL 61761, phone: (309) 451-7801, fax: (309) 451-7765, e-mail: mdennis@chestnut.org.

Presentation Goals

- Identify and illustrate some of the common data collection designs/strategies/issues for measuring recovery
- Review the strengths and limits of SAMHSA's current data collection design for measuring recovery
- Illustrate how the common data collection designs could help SAMHSA to better measure recovery
- Show how multi-morbidity is common and impacts rates of remission, service utilization and costs

COMMON DATA COLLECTION STRATEGIES

Some Common Data Collections Strategies

Strategy	Questions they address	Pros	Cons
1. Duration Question	1a. Prevalence of various durations 1b. Change in facets of recovery over duration	Low burden	Potential recall bias
2. Multiple Intervals or Recency	2a. Prevalence of problems in different periods 2b. Prevalence of remission (lifetime but not past year).	Clear remission; Moderate burden	Pot. recall bias; Limited number of combinations
3. Event History	3a. Prevalence of various durations 3b. Change in facets 3c. Number/patterns of episodes 3d. Trajectories and trends	Can be summarized multiple ways	Pot. recall bias; Burden rises rapidly with number of dimensions
4. Repeated Measures	4a. Examine pattern of change within individuals 4b. Evaluate predictors of transition	Low recall bias;	Logistically more difficult

Two other cross-cutting issues are:

- The role of multi-morbidity and quality of life
- The impact on above on service utilization and costs

SAMHSA'S CURRENT DATA COLLECTION DESIGN FOR MEASURING RECOVERY

Strengths and Limits of SAMHSA's Current Strategy

- National Survey on Drug Use and Health (NSDUH) focuses on:
  - Very large cross-section sample by state planning districts
  - Prevalence, recency and frequency of substance use
  - Past year substance use disorder (SUD) symptoms by substance
  - Some symptoms of mood disorders
  - Prior diagnosis related to mood or anxiety
  - 7 measures of past year service utilization (arrest, substance use outpatient/ residential, mental health outpatient/ hospital, physical health emergency department/ hospital)
- Some of the key things the NSDUH lacks:
  - Duration of abstinence, multiple time periods, event history, or repeated measures for SUD or Other Mental Disorders (OMD)
  - Measures of OMD related to internalizing (anxiety, trauma, suicide) or externalizing (attention, hyperactivity, gambling, impulse control) to calculate prevalence of condition or remission
  - Multi-morbidity and Quality of Life (QOL)
  - Detailed service utilization and cost

Strengths & Limits of SAMHSA's Current Strategy (continued)

- CSAT Government Performance and Results Act (GPRA) measure focuses on:
  - Intake, 6 months, and discharge (records only) on patients served by grants
  - Past month detailed days of substance use by substance and days of mental health problems by symptoms
  - Past month days of service utilization on 12 areas self-reported (substance use, mental health, and physical health outpatient, inpatient, and emergency department; days of medication; arrest, incarceration) and for treatment episode from record in over 40 areas
  - Lifetime trauma symptom screener
  - Past 30 day social connectedness

- CMHS GPRA measure focuses on:
  - Intake, 6 months, and discharge (records only) on patients served by grants
  - Past month likert measures of functioning, substance use, depression and trauma symptoms, perception of care, social connectedness
  - Yes/no on 20 types of service utilization during the treatment episode

Strengths & Limits of SAMHSA's Current Strategy (continued)

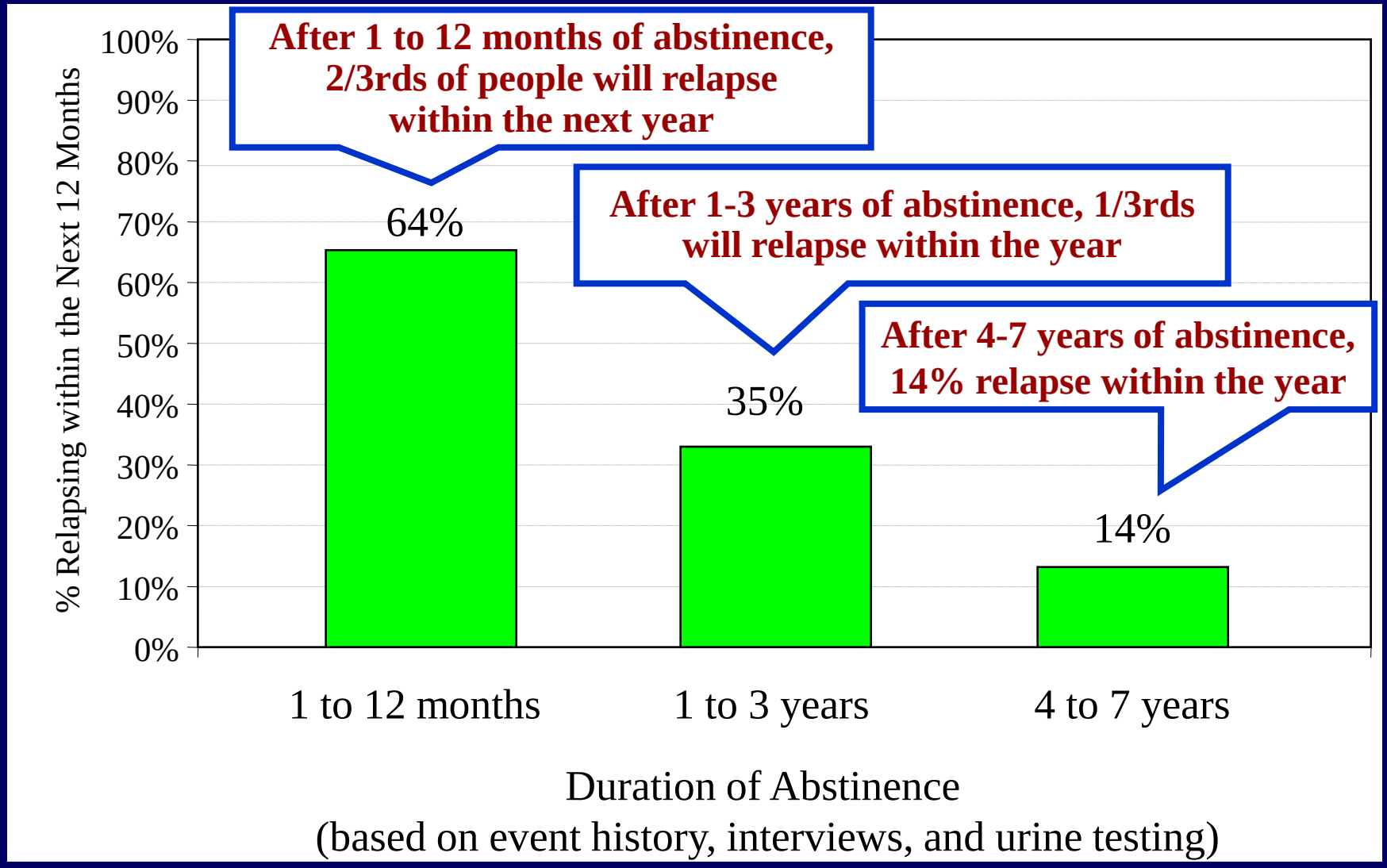
- Some key limits:
  - No formal measure of SUD or most OMD prevalence, multi-morbidity, or quality of life
  - No lifetime, recency, duration or event history to allow estimation of severity or remission
  - No measure (diagnosis or days) related to externalizing OMD (e.g., ADHD, CD) that are the most common for youth and still very common for young adults
  - No published psychometrics, map onto existing literature, linkage to each others or NSDUH norms
  - Both measures lack 6-month self-reported measures of utilization to cover the time of services provided and thus limit their utility for representing what is received or its costs (typically the most in the first 3 months that are missed) and their records measure miss what was received from others
  - CSAT measure is long (to the point of often limiting the use of other measures) and has many redundant items
  - CMHS measure has likert and yes/no items that may have difficulty measuring change and/or estimating service utilization/costs

1. DURATION

1a. Prevalence of various durations

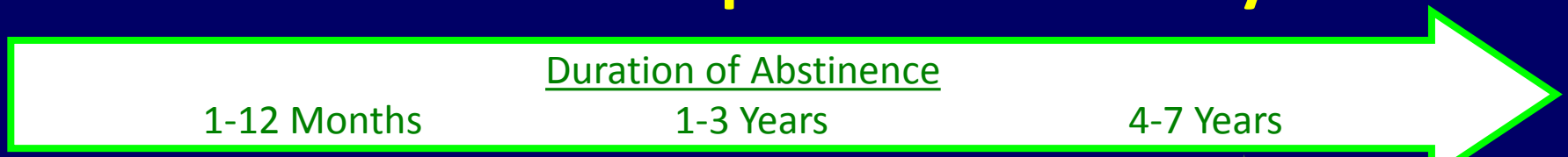
1b. Change in facets of recovery over duration

Illustration of How the Duration of Abstinence Predicts the Risk of Relapse in the Next Year



Source: Dennis, Foss, & Scott (2007Dennis, M. L., Foss, M. A., & Scott, C. K. (2007). An eight-year perspective on the relationship between the duration of abstinence and other aspects of recovery. Evaluation Review, 31(6), 585-612.)

Illustration of How the Duration of Abstinence is Related to Other Aspects of Recovery



- More clean and sober friends
- Less illegal activity and incarceration
- Less homelessness, violence, and victimization
- Less use by others at home, work, and by social peers

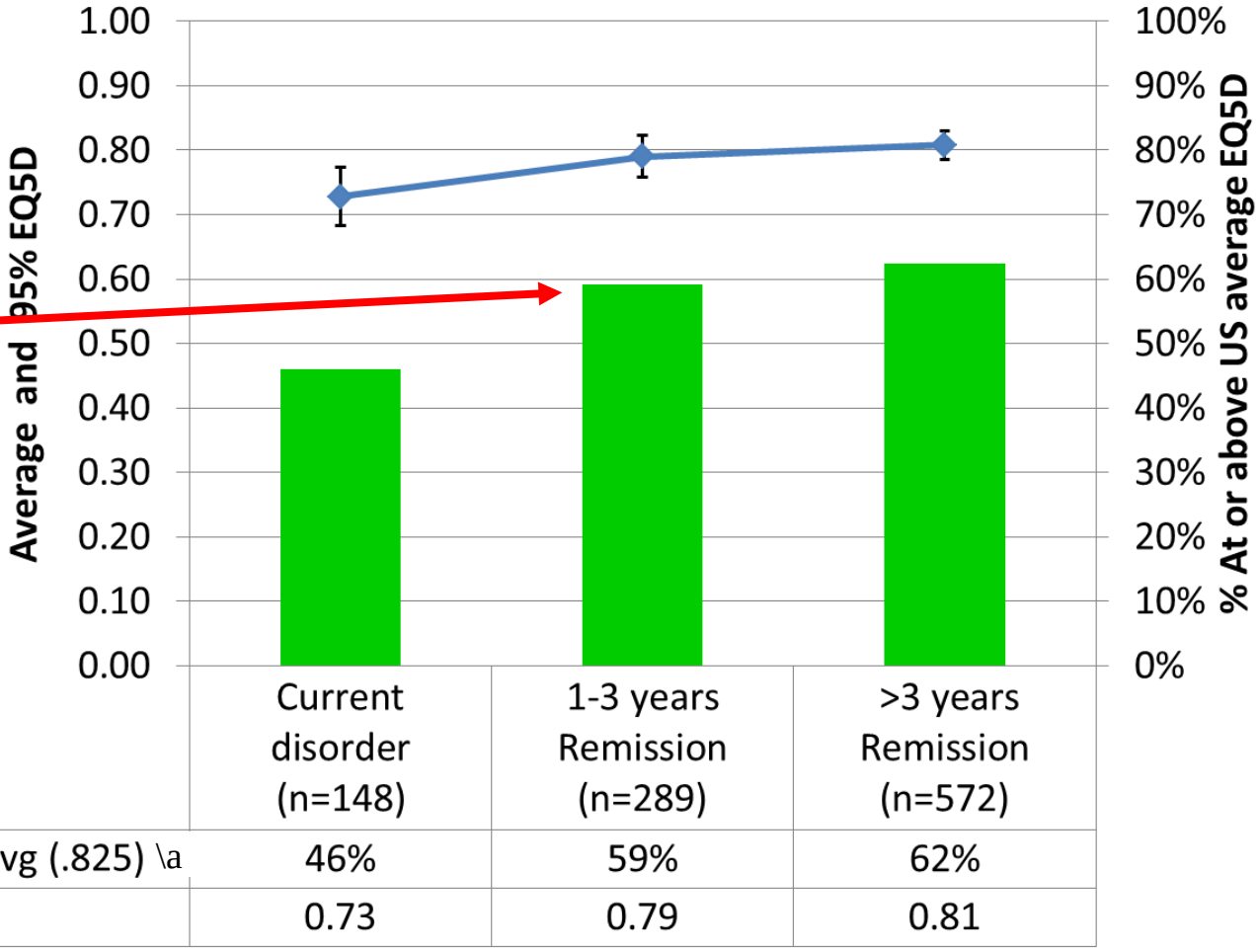
- Virtual elimination of illegal activity and illegal income
- Better housing and living situations
- Increasing employment and income

- More social and spiritual support
- Better mental health
- Housing and living situations continue to improve
- Dramatic rise in employment and income
- Dramatic drop in people living below the poverty line

Source: Dennis, Foss, & Scott (2007De
relationship between the duration of ab

Duration of "SUD Remission" is Related to Improved Quality of Life

The duration of remission works the same way – here compared to quality of life as continuous measures or endpoints



\a Odds Ratio (OR) relative to current disorder significant for 1-3 years remission (OR=1.71, p<.05) and >3 years in remission (OR=1.95, P<.05)

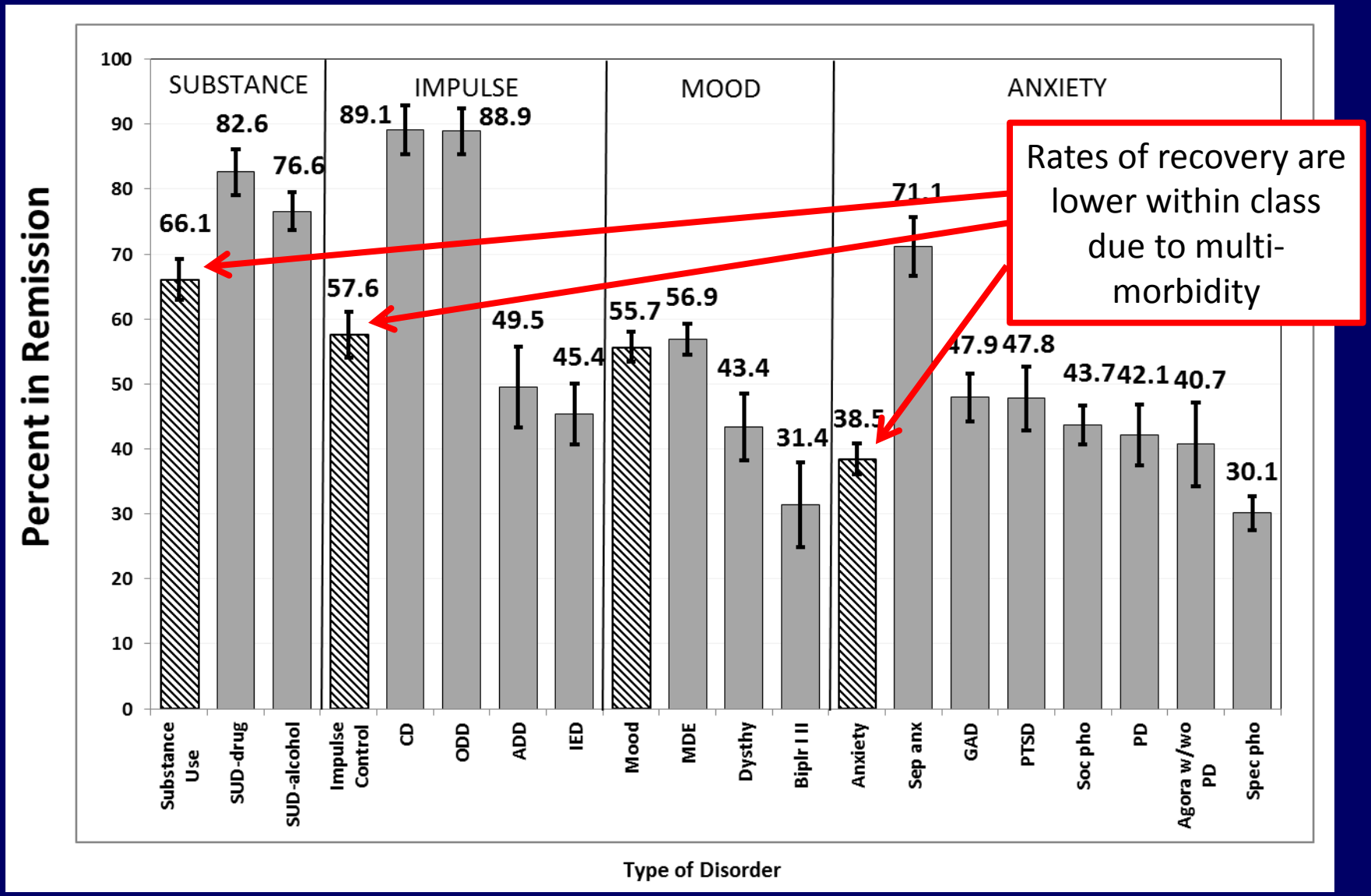
\b Significantly different by group, F(2,1006) = 5.01, p <.01.

2. MULTIPLE INTERVALS OR RECENCY

2a. Prevalence of problems in different periods

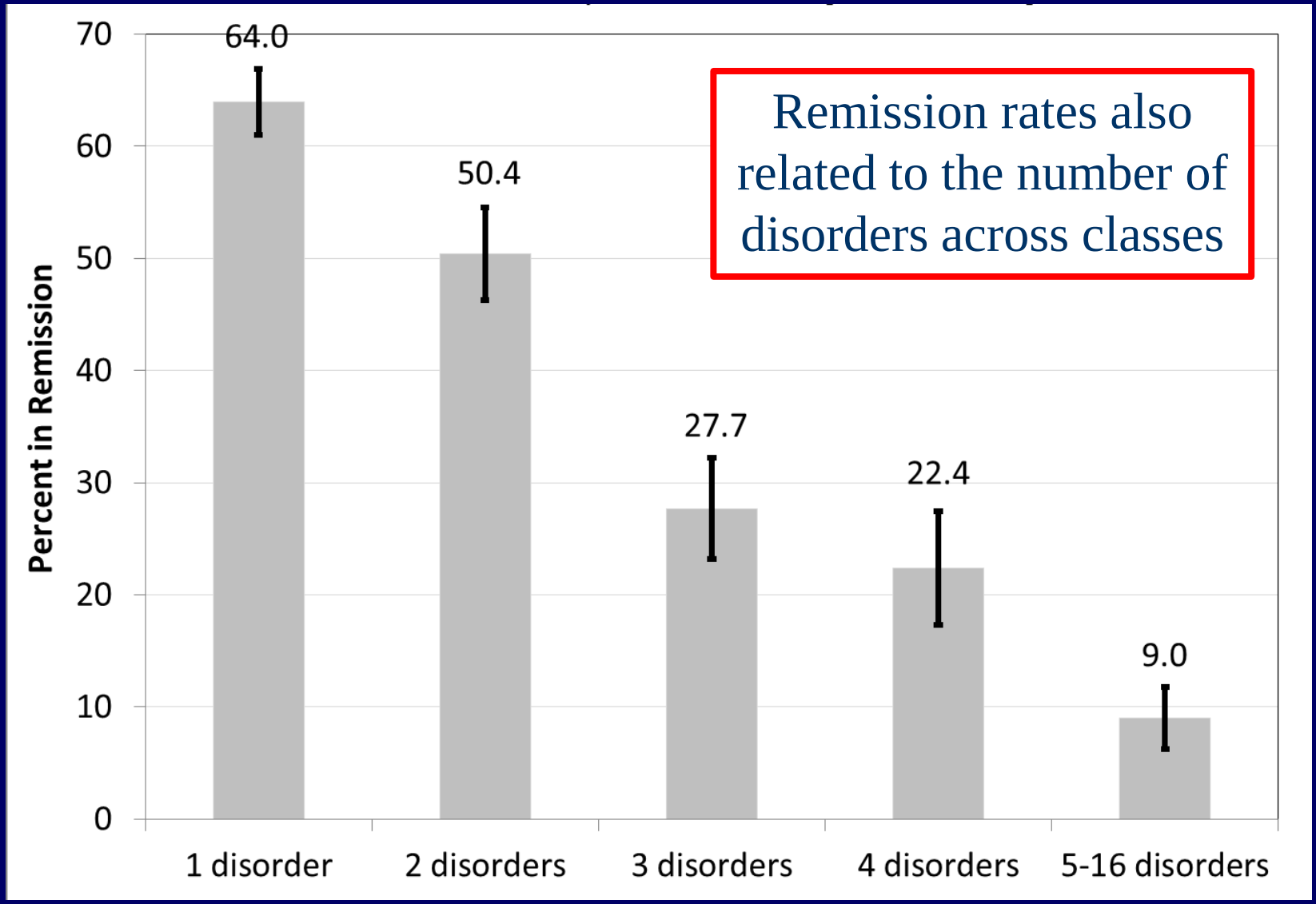
2b. Prevalence of remission (lifetime but not past year).

Remission Rates by Diagnostic Class and Diagnosis



Source: Dennis et al., (under review) The prevalence and rate of remission from DSM-IV substance use and other mental disorders in the National Comorbidity Survey Replication. Normal, IL: Chestnut Health Systems.

Remission Rate of Individuals by Number of Their Co-Occurring Substance/Mental Health Disorders



Source: Dennis et al., (under review) The prevalence and rate of remission from DSM-IV substance use and other mental disorders in the National Comorbidity Survey Replication. Normal, IL: Chestnut Health Systems.

3. EVENT HISTORY

3a. Prevalence of various durations

3b. Change in facets

3c. Number/patterns of episodes

3d. Trajectories and trends

Event History Measures

- Can be frequency or quantity of use or problems by date on a calendar like a timeline follow-back / form 90
- Can also capture start and end dates for episodes of abstinence, treatment, incarceration or other things in more of a log format
- Can then be used to approximate repeated measures by summarizing across multiple combinations of time periods – e.g., rates per week or year

<u>Key Limits include:</u>

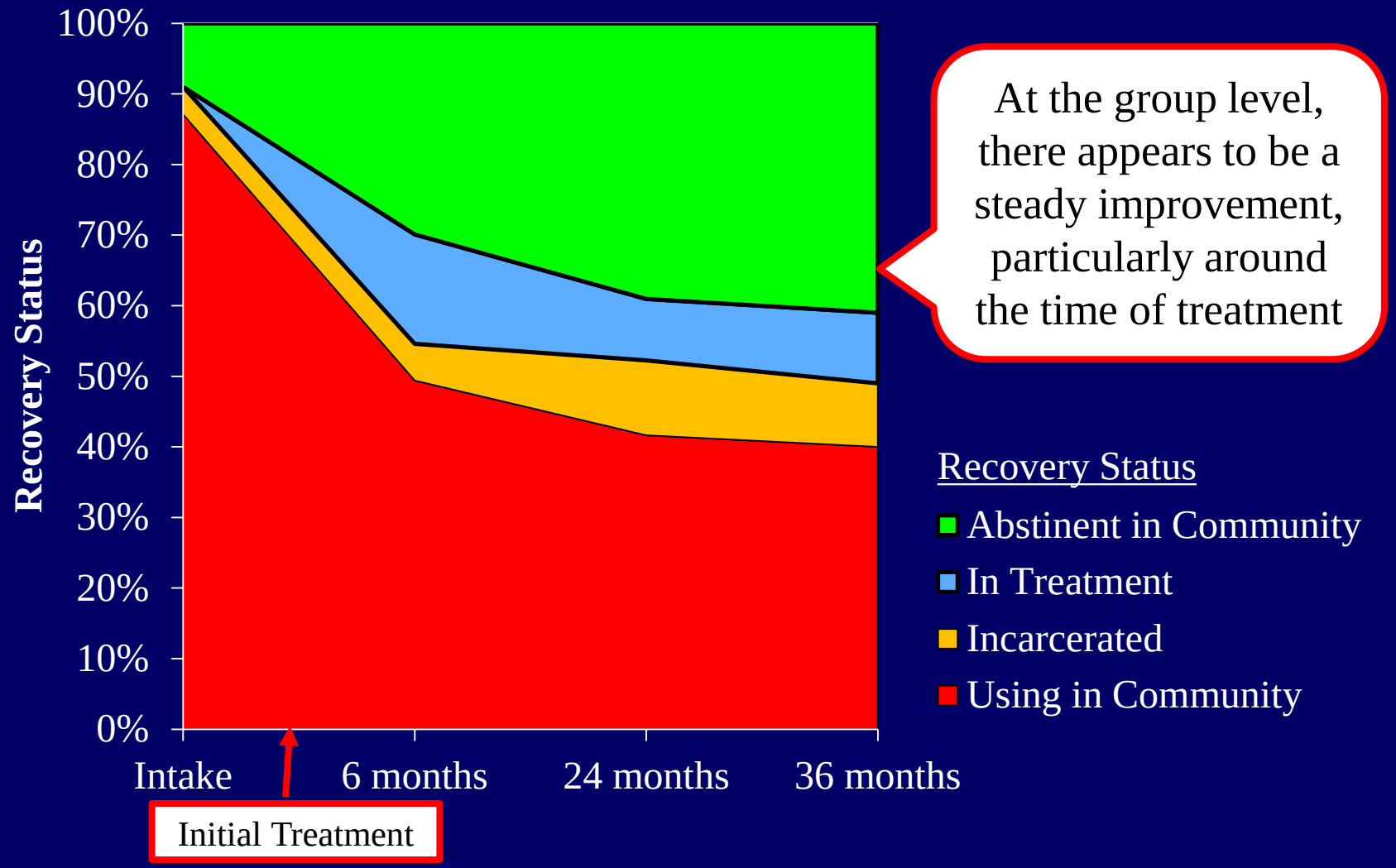
- They are typically time consuming to collect so the more dimensions you measure the longer they take.
- Can be difficult to have the right temporal order. Timing of predictors unless they are also collected with event history

4. REPEATED MEAURES

4a. Examine pattern of change within individuals

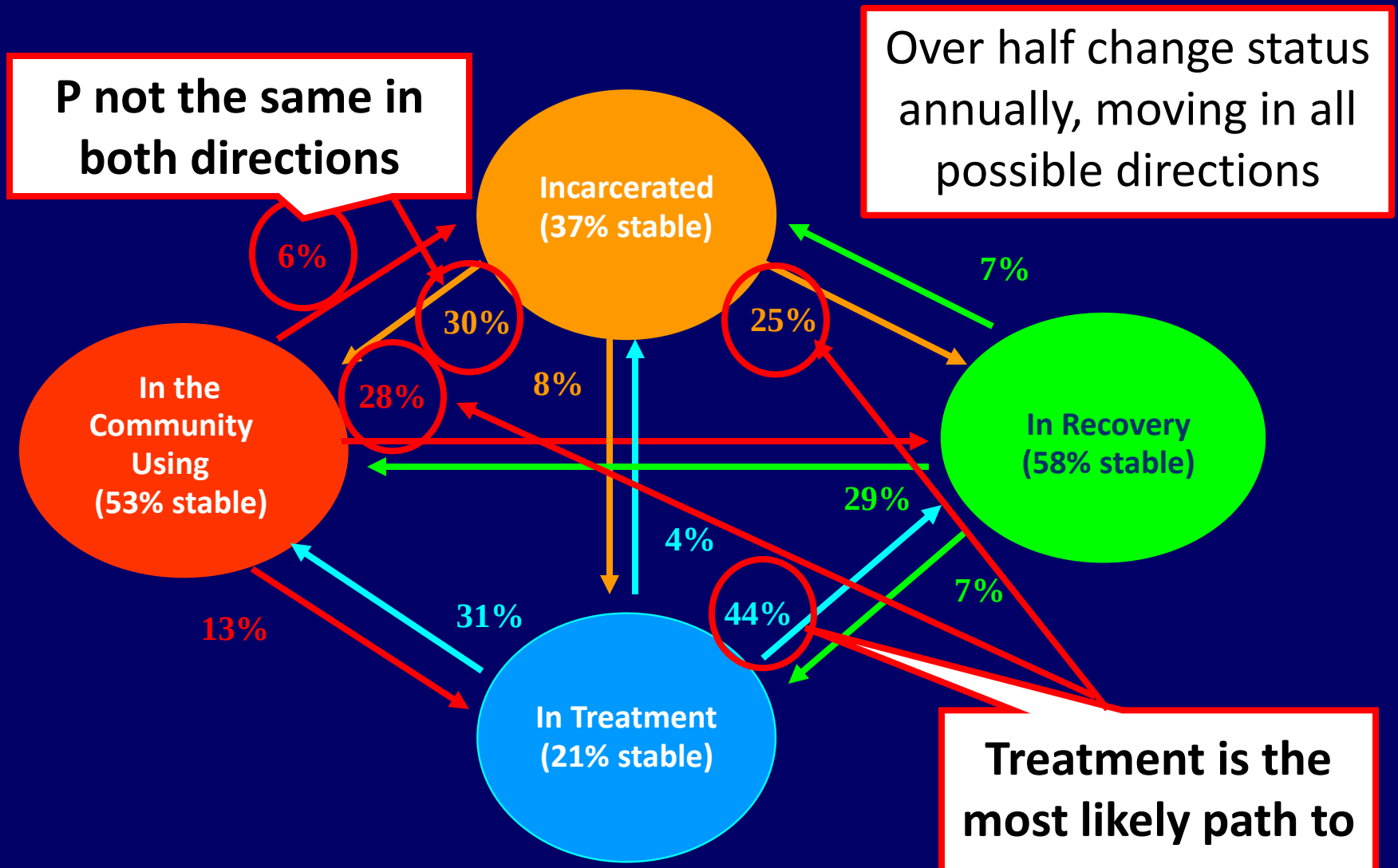
4b. Evaluate predictors of transition

There is an Ecological Fallacy When Understanding Change at the Cohort Level



Source: Scott, C. K., Foss, M. A., & Dennis, M. L. (2005). Pathways in the relapse—treatment—recovery cycle over 3 years. Journal of Substance Abuse Treatment, 28(2), S63-S72.

There is Actually a Complex Course of Relapse, Incarceration, Treatment, and Recovery at the Individual Level



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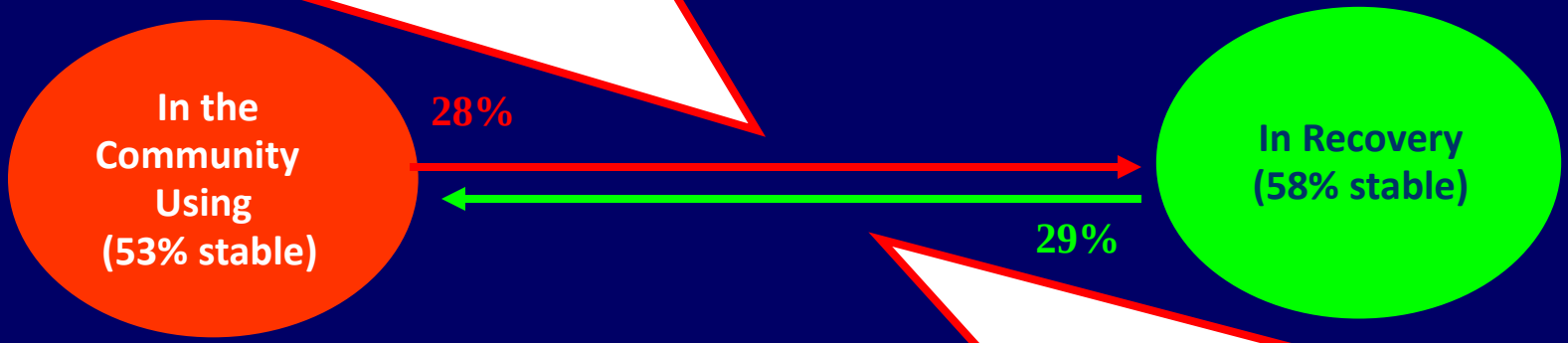
Probability of Transitioning from Using to Abstinence

- mental distress (0.88)
- ASI legal composite (0.84)
+ older at first use (1.12)
+ homelessness (1.27)
+ # of sober friend (1.23)
+ per 8 weeks in treatment (1.14)



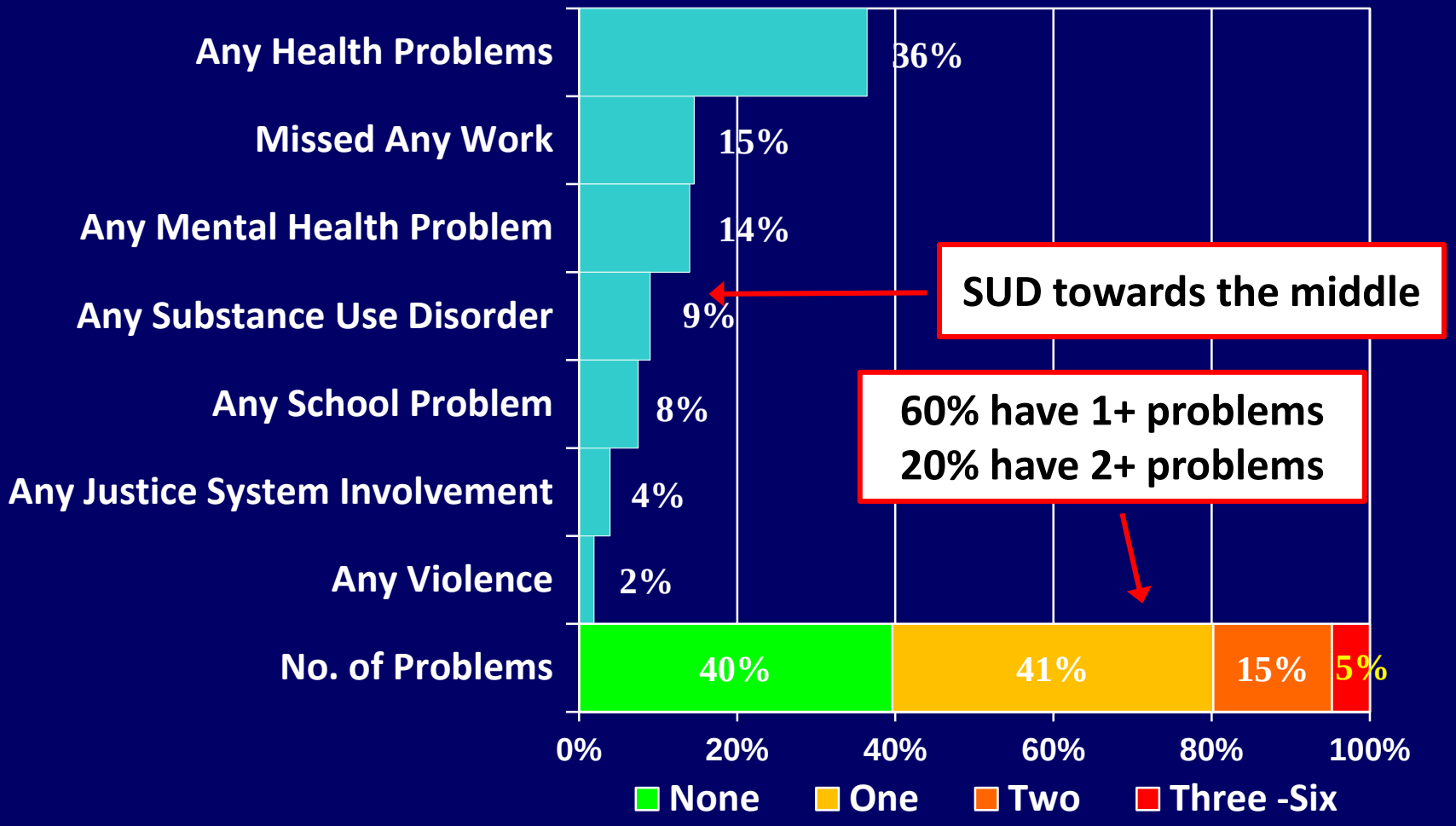
Probability of Sustaining Abstinence

- times in treatment (0.83)
- homelessness (0.61)
- number of arrests (0.89)
+ female (1.72)
+ ASI legal composite (1.19)
+ # of sober friend (1.22)
+ per 77 self help sessions (1.82)

Source: Scott, C. K., Foss, M. A., & Dennis, M. L. (2005). Pathways in the relapse—treatment—recovery cycle over 3 years. Journal of Substance Abuse Treatment, 28(2), S63-S72.

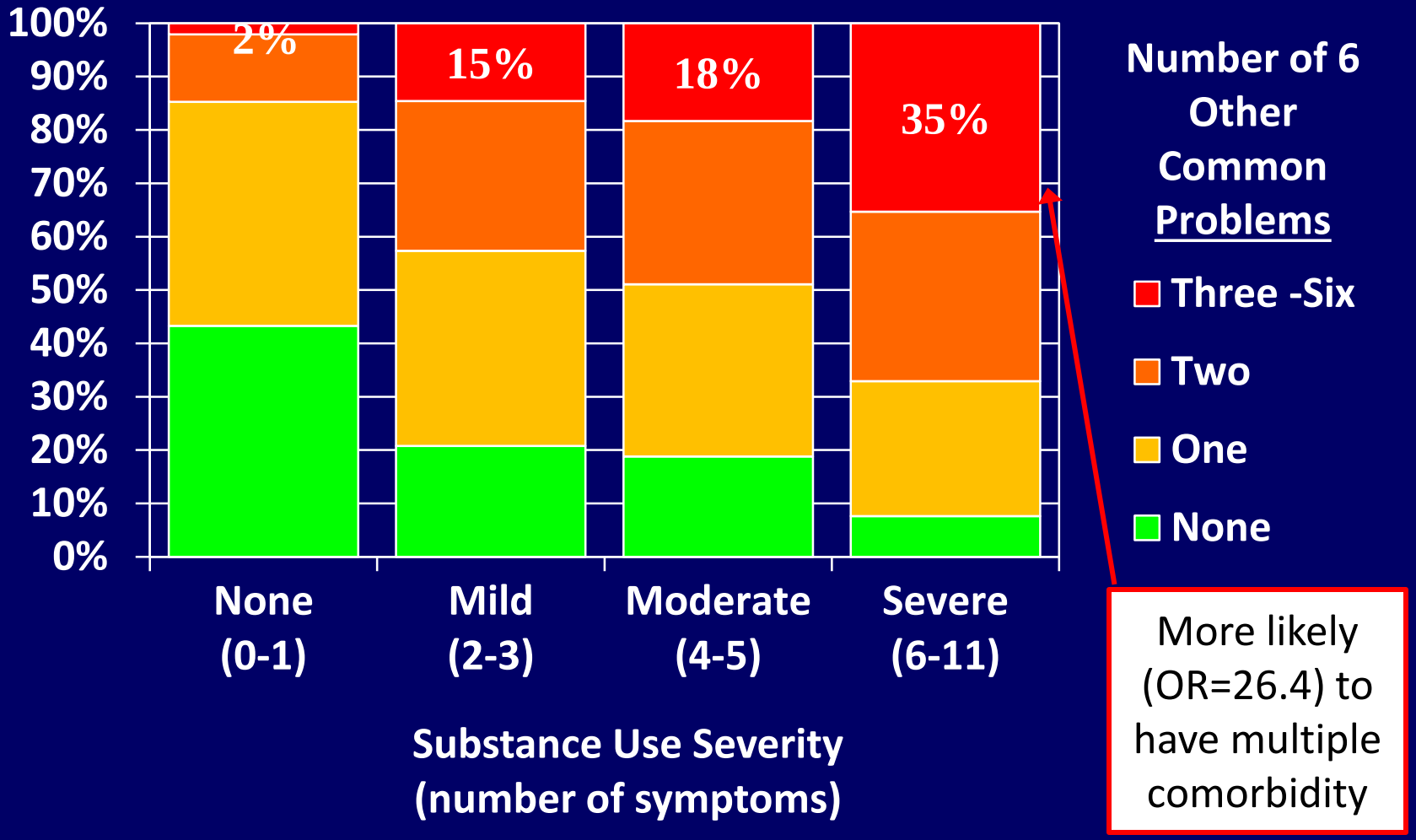
ACCOUNTING FOR THE EFFECTS OF MULTI-MORBIDITY , SERVICE UTILIZATION AND COSTS TO AVOID MODEL SPECIFICATION ERRORS

Prevalence of Six Common Past Year Problems in the NSDUH



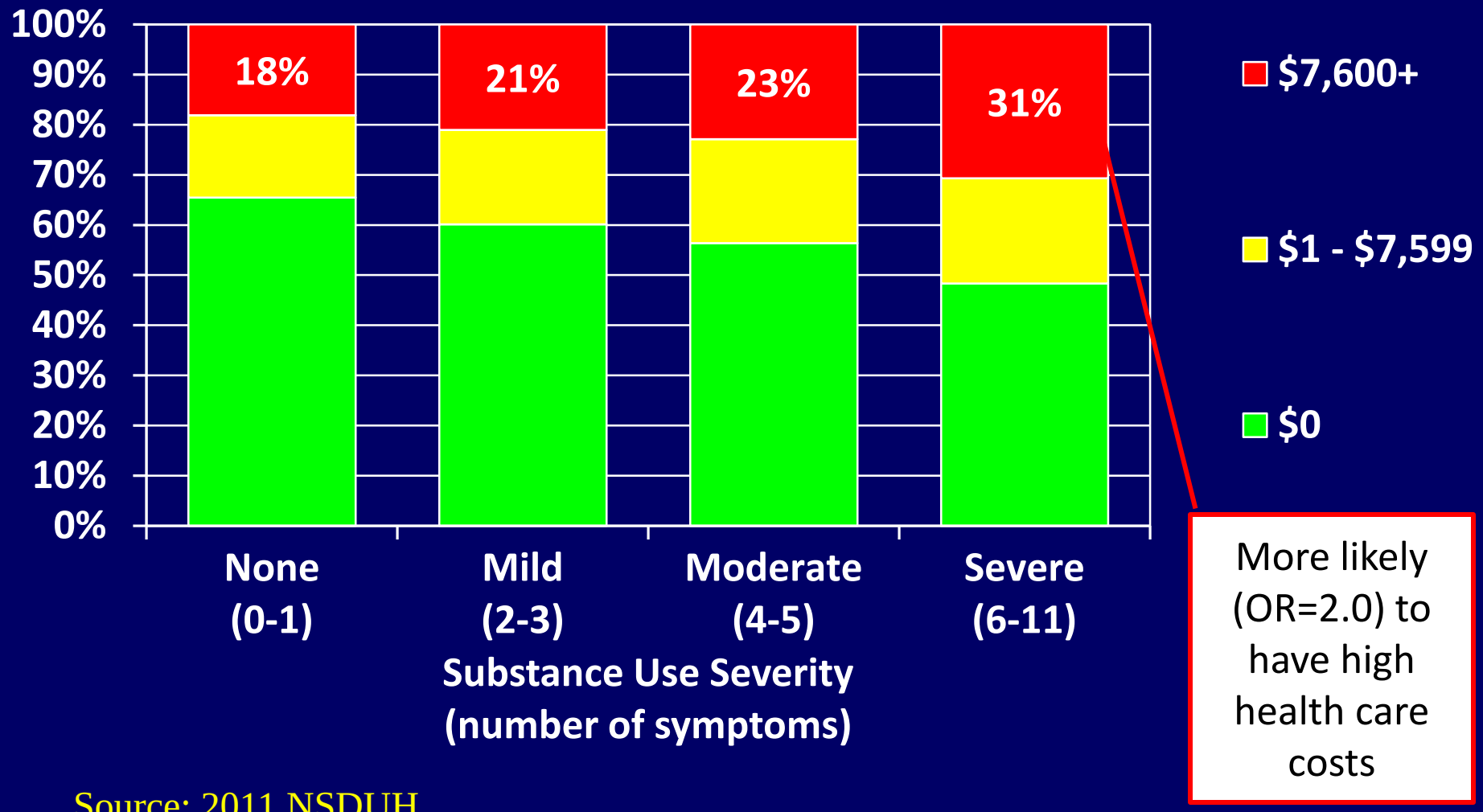
Source: 2011 NSDUH

SUD Severity is Strongly Related to Multi-Morbidity



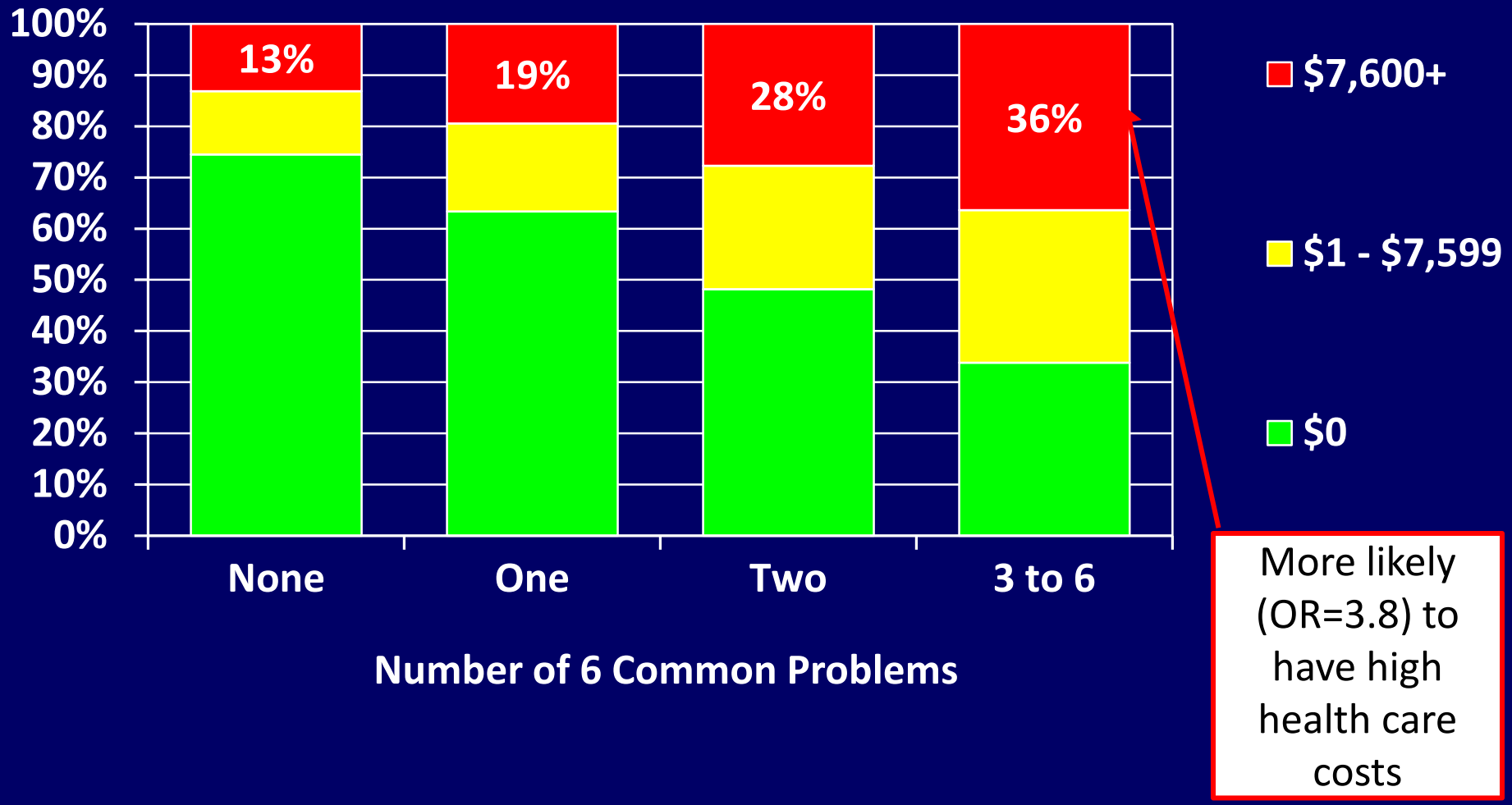
Source: 2011 NSDUH

SUD Severity is Also Related to Health Care Utilization Costs (2012$)



Source: 2011 NSDUH

Comorbidity Even More Related to Health Care Utilization Costs (2012$)



Source: 2011 NSDUH

Service Utilization and Cost

- Mental health research has consistently shown that multi-morbidity (3+ diagnoses) is the norm among those who present to treatment and the primary distinction between who gets services or not
- While program evaluation and even clinical trials comparing evidenced based practices often have similar clinical outcomes – their cost and cost outcomes are typically significantly different
- NIH common data workgroup (www.phenx.org) recommended a common set of 15 measures of service utilization (from the GAIN) and quality of life (from EQ5D) that already have extensive norms and that economist have already valued

CONCLUSION

Key Take Away Messages

- Recovery is a process where it is important to understand how long it lasts and how facets change over time
- Measuring remission (lifetime but not past year) is feasible but requires at least two periods , recency or repeated measures
- Because people cycle through multiple periods of using, incarceration, treatment and recovery, it is important to examine change within person and the predictors of transition.
- Multiple morbidity is common and impacts the rates remission, service utilization and cost- suggesting it is important to measure and understand.
- It would be useful if NSDUH and GPRA better supported program evaluation – suggesting the need for more integration, norms and cross validation.

Recommendations

- On a subset oversampling those with disorders/likely to show to services, add a longitudinal component to the NSDUH
  - Only if not viable, collect event history data
- Create national norms from NSDUH (including relative to change), examine construct /predictive validity, and compare to other measures so that it can support program evaluation
- Have a subset of common measures in the NSDUH and two GPRA measures so that the above benefits the later
- Add/expand Phenx recommended or similar measures of:
  - Duration of abstinence
  - Recency of symptoms for SUD, internalizing and externalizing disorders to allow estimation of remission
  - Quality of life
  - Service utilization