The Co-occurring Matrix for Mental and Addictions Disorders

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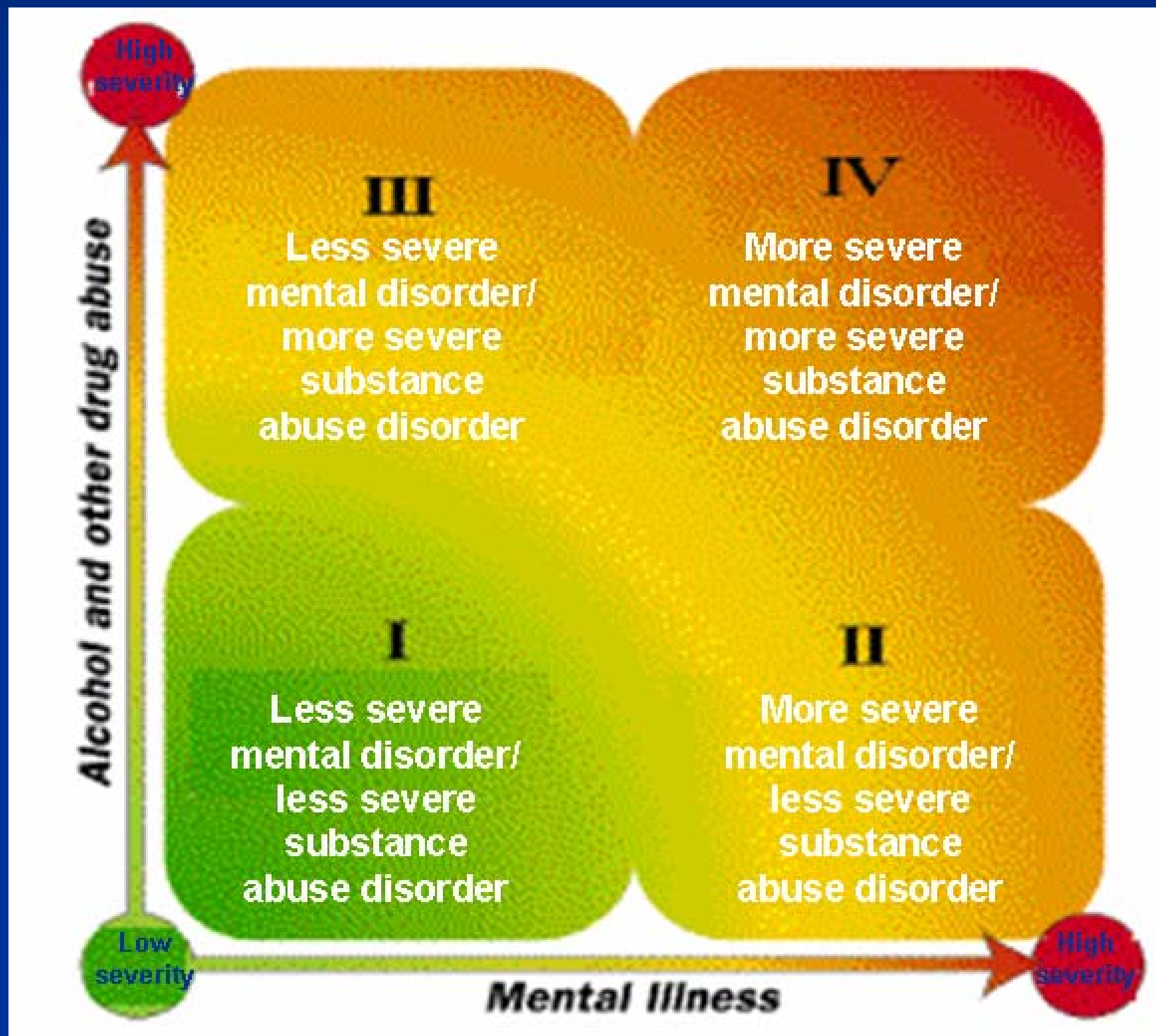
Why was the Co-occurring Matrix developed?

- Most early "dual disorder" research dealt only with those with Severe and Persistent Mental Illnesses in MHC's
- A method and graphic was needed to describe other populations in MH and Addictions settings
- The "Matrix" is simple and relates two Illnesses/Systems…
  - Mental Health vs Addictions
  - At two severities ….Low vs High
- Creates Chi Square combinations LL, LH, HL, and HH
  - But do the "severities" mean Illness Severity, or Service Need?

Adopted by various states and national organizations

- First published as a model by Ries ’93
- May have spread or been independently developed in Connecticut, New York, others
- Adopted as state model by New York ’95
- Adopted by State Directors: NASADAD/NASMHPD, June ’98 as national model for co-occurring disorders treatment

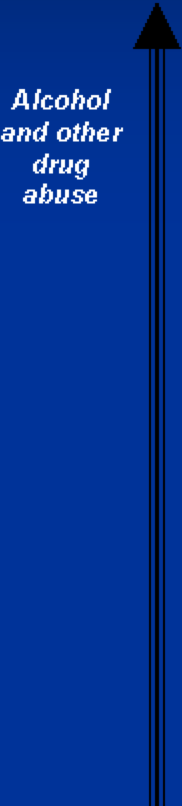
The Four Quadrant Framework for Co-Occurring Disorders



A four-quadrant conceptual framework to guide systems integration and resource allocation in treating individuals with co-occurring disorders (NASMHPD,NASADAD, 1998; NY State; Ries, 1993; SAMHSA Report to Congress, 2002)

Not intended to be used to classify individuals (SAMHSA, 2002), but . . .

High Severity



III
Less severe mental disorder/ more severe substance abuse disorder
Locus of care: Substance abuse system

IV
More severe mental disorder/ more severe Substance abuse disorder
Locus of care: State hospitals, jails/prisons, emergency rooms, etc.

I
Less severe mental disorder/ Less severe substance abuse disorder
Locus of care: Primary health care settings

II
More severe mental disorder/ less severe substance abuse disorder
Locus of care: Mental health system

High Severity

Mental Illness

ASAM PPC 2 R
Patient Placement Model

- Addiction
  - Addiction Only
  - Addiction based dual capable
  - Addiction based dual enhanced

- Mental Health
  - MH only
  - MH based dual capable
  - MH based dual enhanced

There are 6 ASAM dimensions

ASAM PPC 2 R Adaptation …R RIES

Add Only	Add Cap	Add Enhan	Full COD	MH Enhan	MH Cap	MH Only

Other “Systems” Axes

- Medical
- Recovery Environment
- HIV
- Criminal Justice
- Homeless
- Developmental/Retardation
- Illegal Alien

Other Dual Disorder Patient subtypes

- **Wallen M '89 ………………SMI, PD, Sub Ind, Others**
- **Ries '93 ………………Beginning Low High matrix**
- **Lehman A et al '94 ………………SMI, Non SMI, Sub Ind, PD**
- **Dixon L et al '97 ………………Prim/Secondary Psych**
- **Zimberg 99 ………………Sub Ind, Longer term etc**

Though designed as a “Services” schematic:

- Practitioners want clinical LH definitions for dispositional purposes.
- Agencies want clinical LH definitions so they can characterize their mix of pts, design programs to match
- States want LH definitions so they could compare different mixes of pts in agencies, regions, counties etc
- Feds want to compare states

However NO Co-occurring Matrix published data exists

- About its use as a “Systems” tool or concept
- About its use as a “Clinical” tool
- L/H definitions are conceptual and have not been operationalized for either Systems or Patient cases… ie hard to research

But there are some pilot studies:

- Gabriel R et al ’04
- Ries R et al ‘04

Project SPIRIT: Seeking Pathways Into Receiving Integrated Treatment

Client Outcomes From a Local CSAT-Funded Study of Co-Occurring Disorders Treatment

RMC Research Corporation
Portland, Oregon

Principal Investigator: Roy M. Gabriel, Ph.D.

Project Director: Kelly Brown Vander Ley, Ph.D.

Outcome Analyst: Jennifer Lembach

Data Collection Coordinator: Gillian Leichtling

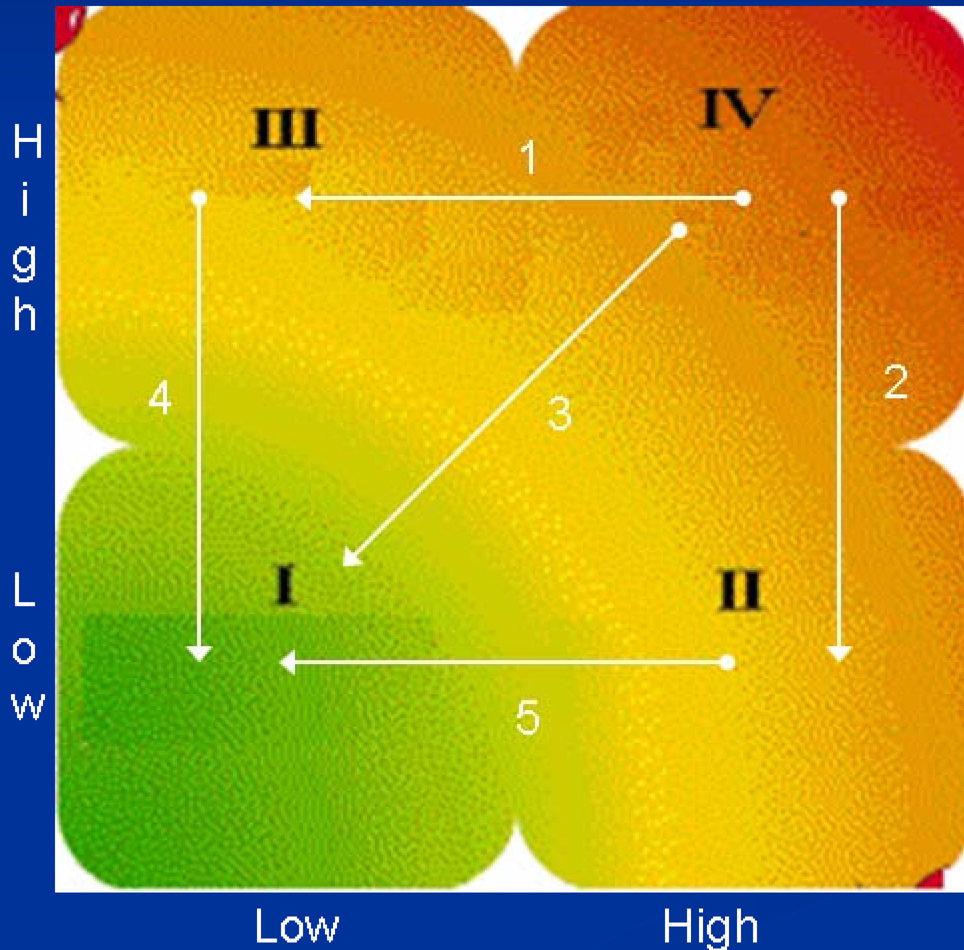
A Presentation at the Northwest Regional Substance Abuse Director's Institute in "Lessons on Integrating Substance Abuse and Mental Health." Kah-Nee-Ta, Oregon, April 26-28, 2004

Mental Health/Substance Abuse Severity Quadrants

		Mental Health Severity	
		Low	**High**
Substance Abuse Severity	**High**	QIII $n = 40$	QIV $n = 80$
	Low	QI $n = 84$	QII $n = 39$

- Study participants classified into 4 mutually exclusive groups, defined by high or low severity on mental health and substance abuse disorders
- Because mental health and substance abuse are highly correlated, the low-low and high-high categories are the largest
- Gabriel R unpub ‘04

Looking for Change Over Time in SA and/or MH Severity: Movement from One Quadrant to Another
(Gabriel R unpub 04)



1. **Reduction in MH severity, but not SA severity.**
2. **Reduction in SA severity, but not MH severity.**
3. **Reduction in both MH & SA severity.**
4. **Reduction in SA severity, maintaining low MH severity.**
5. **Reduction in MH severity, maintaining low SA severity.**

Findings (Gabriel R unpub 04)

Changes Six-months post-Treatment Entry[1]

- In all, much positive movement
  - Of 159 clients (65% of sample) who were in the high severity condition in one or both domains:
    - 77% reduced to low severity in one or both
    - 57% moved to the "Low/Low" classification
- What about the "SA masking MH problems" hypothesis?
  - Not supported in these data
    - Of 40 clients classified as Low MH, High SA severity, only 1 of 23 showed an increase in MH severity coupled with a decrease in SA severity

[1] Vander Ley, Lembach, Gabriel & Lewis; APHA, 2003

Relative vs Benchmarked Definitions of Low and High Severity

- Low MH in an acute psych ER might be HIGH MH in an addictions outpt clinic
- Low Addiction in a Methadone program might be High addiction in a primary care clinic
- Need for well described benchmarks

But what really classifies a "case" as Low or High

- Mental Illness
  - Diagnosis?
  - Persistency?
  - Disability?
- Alcohol/Drug
  - Use and Abuse
  - Dependence
  - Chronicity/Disability

Acute vs Longer term problems:

- Many Substance Induced Psychoses or Suicide attempts will ACUTELY require the highest level of care (Quad 4)
  - Often resolve in hours to days, now the case is Quad 3

- Stress or Medication non-compliance may acutely cause
  - a Low stable condition to become a High Unstable mental condition
  - (eg. stable depression to psychotic depression), Quad 1 to 2 or 4

- How to classify a severe alcoholic with 1day, vs 1 week, vs 1 mo, vs 1 yr vs 1 decade sobriety

Therefore the need to consider Acute vs Longer term definition

Conclusions re the Co-occurring Matrix:

- Confusion about whether this is only a conceptual model vs whether it can or should be operationalized
  - As a systems of care model or tool
  - As a patient classification model or tool
- Problems with Acute vs Longer term classification of Services need or Pt type
- Problems with Substance induced psychiatric disorders
- Problems with Benchmarked vs Relative definitions of Low/High Severities

Why Operationalize LH categories

- Clinicians and agencies could match pt to treatment
- Pt change in status with Treatment
- Categorizing agencies by pt type
- Comparing across agencies, programs, counties, states etc

If one were going to "Operationalze" ….what would be some ground rules?

- Ability to categorize Low vs High severities
- Easy, short, not requiring New data or scales
- Use of elements often gathered in clinical interviews
- Based on concepts or methods already validated
- Use of data elements already in many systems, so post hoc analyses possible
- Others?

Rating Addiction Severity:

Methods: Attending rate illness severities across 30 items on all admits and discharges, as part of standard clinical note… R Ries 2001..

- Substance rating=
  - 0 = no substance use problems
  - 1,2 = substance use has led to only minor/infreq problems such as moodiness etc
  - 3,4 = qualifies for Substance Abuse with problems, but not dependence
  - 5,6 = qualifies for dependence with compulsive use, consequences, and loss of control

Rating MH Severity: GLOBAL ASSESSMENT OF FUNCTIONING (GAF) SCALE

Consider psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness. Do not include impairment in functioning due to physical (or environmental) limitations.

CODE	**(Note: Use intermediate codes when appropriate, e.g., 45, 68, 72.)**
100 – 91	**Superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities. No symptoms.**
90 – 81	**Absent or minimal symptoms** (e.g., mild anxiety before an exam), **good functioning in all areas, interested and involved in a wide range of activities, socially effective, generally satisfied with life, no more than everyday problems or concerns** (e.g., an occasional argument with family members.
80 – 71	**If symptoms are present, they are transient and expectable reactions to psychosocial stressors** (e.g., difficulty concentrating after family argument); **no more than slight impairment in social, occupational, or school functioning** (e.g., temporarily falling behind in schoolwork).

GLOBAL ASSESSMENT OF FUNCTIONING (GAF) SCALE

70–61 **Some mild symptoms** (e.g., depressed mood and mild insomnia) **OR some difficulty in social, occupational, or school functioning** (e.g., occasional truancy, or theft within the household), **but generally functioning pretty well, has some meaningful interpersonal relationships.**

60–51 **Moderate symptoms** (e.g., flat affect and circumstantial speech, occasional panic attacks) **OR moderate difficulty in social, occupational, or school functioning** (e.g., few friends, conflicts with peers or co-workers).

50–41 **Serious symptoms** (e.g., suicidal ideations, severe obsessional rituals, frequent shoplifting) **OR any serious impairment in social, occupational, or school functioning** (e.g., no friends, unable to keep a job).

40–31 **Some impairment in reality testing or communication** (e.g., speech is at times illogical, obscure, or irrelevant) **OR major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood** (e.g., depressed man avoids friends, neglects family, and is unable to work; child frequently beats up younger children, is defiant at home, and is failing at school).

30–21 **Behavior is considerably influenced by delusions or hallucinations OR serious impairment in communication or judgment** (e.g., sometimes incoherent, acts grossly inappropriately, suicidal preoccupation) **OR inability to function in almost all areas** (e.g., stays in bed all day; no job, home, or friends).

GLOBAL ASSESSMENT OF FUNCTIONING (GAF) SCALE

20 – 11	**Some danger of hurting self or others** (e.g., suicide attempts without clear expectation of death; frequently violent; manic excitement) **OR occasionally fails to maintain minimal personal hygiene** (e.g., smears feces) **OR gross impairment in communication** (e.g., largely incoherent or mute).
10 – 1	**Persistent danger of severely hurting self or others** (e.g., recurrent violence) **OR persistent inability to maintain minimal personal hygiene OR serious suicidal act with clear expectation of death.**
0	Inadequate information.

More detailed MH Severity: The "K6"….Kessler 2003

- In last month how often were you:

	1	2	3	4	5
	none	little	some	most	all of time

  - Nervous
  - Hopeless
  - Restless
  - Depressed
  - Everything is an Effort
  - Feeling worthless

Score > 13 = correlates with top 10% in Mental severity

Proposed 4 Box Research model:

- **Low** MI = GAF> 50
- **High** Addict = Dep

- **High** MI= GAF< 50
- **High** Addict= Dep

- **Low** MI = GAF > 50
- **Low** Addict = No Dep

- **High** MI= GAF < 50
- **Low** Addict = No Dep

Research Study: Developing the Co-occurring Matrix Screening Tool: CMaST: CSAT funded*

- Based in urban ER
- Rated with Co-occurring Matrix Screening Tool

  (CMaST) at ER visit,
- Other detailed Research data also gathered (validation)
- CMaST =
  - MH Rating : GAF< 50 vs GAF _> 50
  - Addiction Rating: Use/Abuse vs Dependence
- 3 month follow-up for both CMaST, other data for validation, and services received

* thanks to Wesley Clark, Jane Taylor, and Jim Herrel

Thank you….

- Questions?
- Suggestions?
- Observations?
- Concerns?