



Application of a Risk-  
Adjusted Payment System for  
a Behavioral Health  
Population  
State of Indiana

**2002 National Conference on Mental  
Health Statistics - Washington D.C.**

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May 30, 2002

**M E R C E R**

Human Resource Consulting



# Agenda

## *Hoosier Assurance Plan (HAP)*

- Introduction
- Background
- Data Preparation
- Identification and Formation of Risk-Adjusted Groups
- Case Rate Allocation Methodology



## Background

### *Hoosier Assurance Plan (HAP)*

- Date of Implementation: 01/01/1995
- Waiver Type: Non-waivers
- Geographic Coverage: Statewide
- Program Type: Non-Medicaid Program
- Program Approach: Carve-out
- Primary Contractors: CMHC, SA providers
- Primary Contractor Payments: Case Rate
- Total Enrolled: 61,723 as of July 2001
- Population: TANF, SSI, Uninsured, Underinsured
- Services: Inpatient, Outpatient, Rehabilitation, Crisis/Emergency, Detoxification (SA), Methadone (SA)



## Background

### *Case Rates*

- Case rates are used to purchase services from providers
- In general, the lower the level of functioning, the higher the case rate
- Functioning level based on assessment scale scores and other factors
- Case rates first developed in 1998
- Case rates in place for services related to mental illness and chronic addiction



## Background

### *Groups to be Reviewed*

- Serious Mental Illness (SMI)
- Chronic Addiction (CA)
- Dual Diagnosis (MH & CA)
- State Operated Facilities (SOF)
- Pregnant, or with Dependent Children, and Addicted (SWD)
- Deaf (Hard of Hearing) with MI and CA (DMI, DCA)
- Gamblers (GAM)



## Background

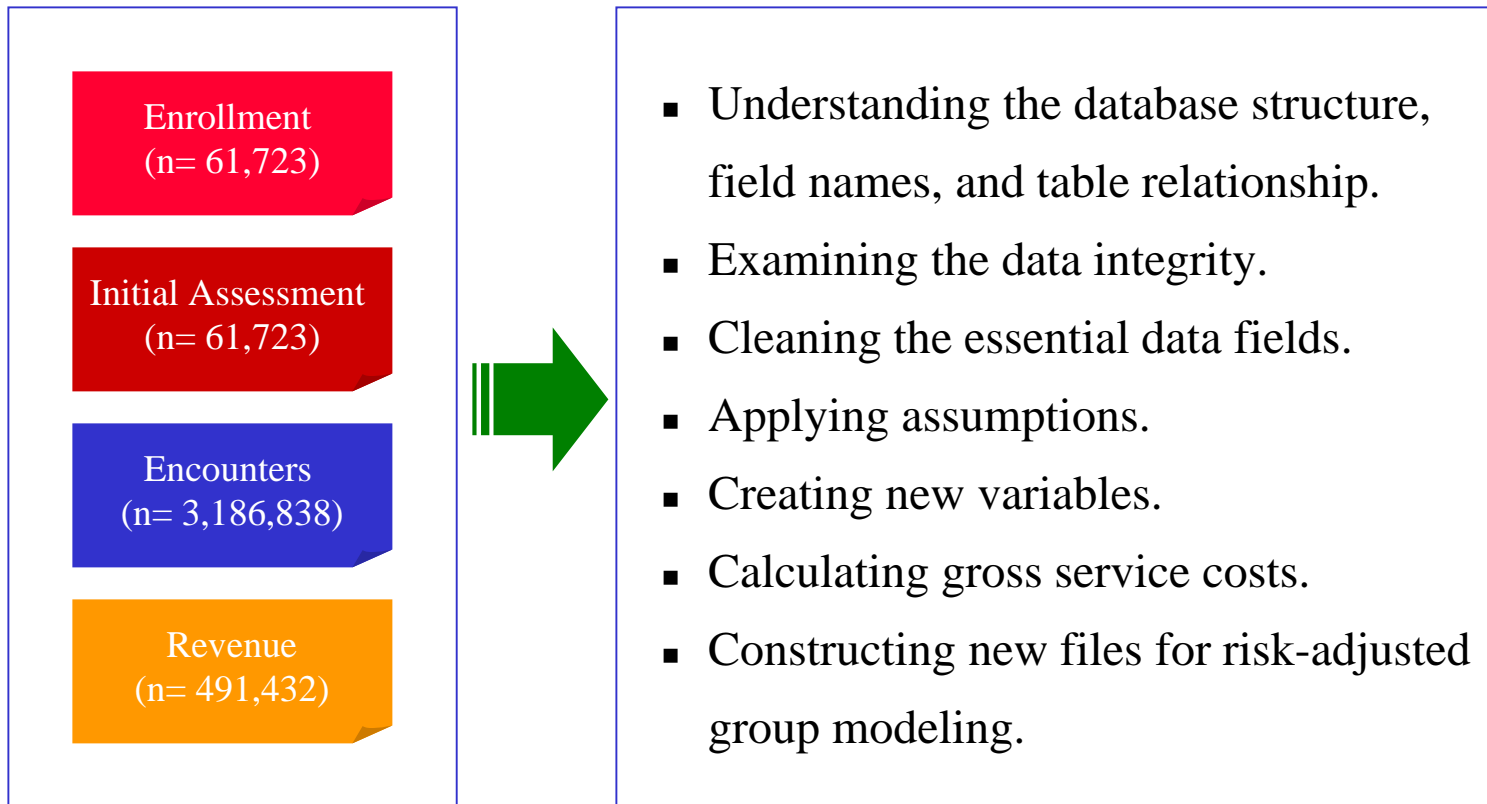
### *Overall Approaches*

- Mercer updating case rates in two phases
  - Rates for adults to be developed in FY 2002
  - Rates for children to be developed in FY 2003
- Two steps
  - Review and refine risk adjustment groups
  - Develop case rates respective to each risk adjustment groups



# Data Preparation

*FY2001 CSDS - HAP Adults*



# Formation of Risk Adjusted Group

## *Guiding Principles*

- Guiding Principles
- Our Strategies
- Our Methodology of Identifying Persons with Co-Occurring Disorder
- HAP Risk Factors





# Formation of Risk Adjusted Group

## *Guiding Principles*

- Ease of administration (DMH and Provider Network)
- Distribution of recipients by cost groups
  - (small high cost groups and large low cost groups)
- Relationship of gross cost and level of functioning
  - (low functioning clients should have a higher cost than those who are higher functioning)
- Maximizing the gross cost between groups to avoid inappropriate migration
- Use of multiple sub-scales on functional assessment to avoid inappropriate migration
- Revised risk adjustment groups should represent a significant improvement to warrant implementation



# Risk Factors

## *Literature Review*

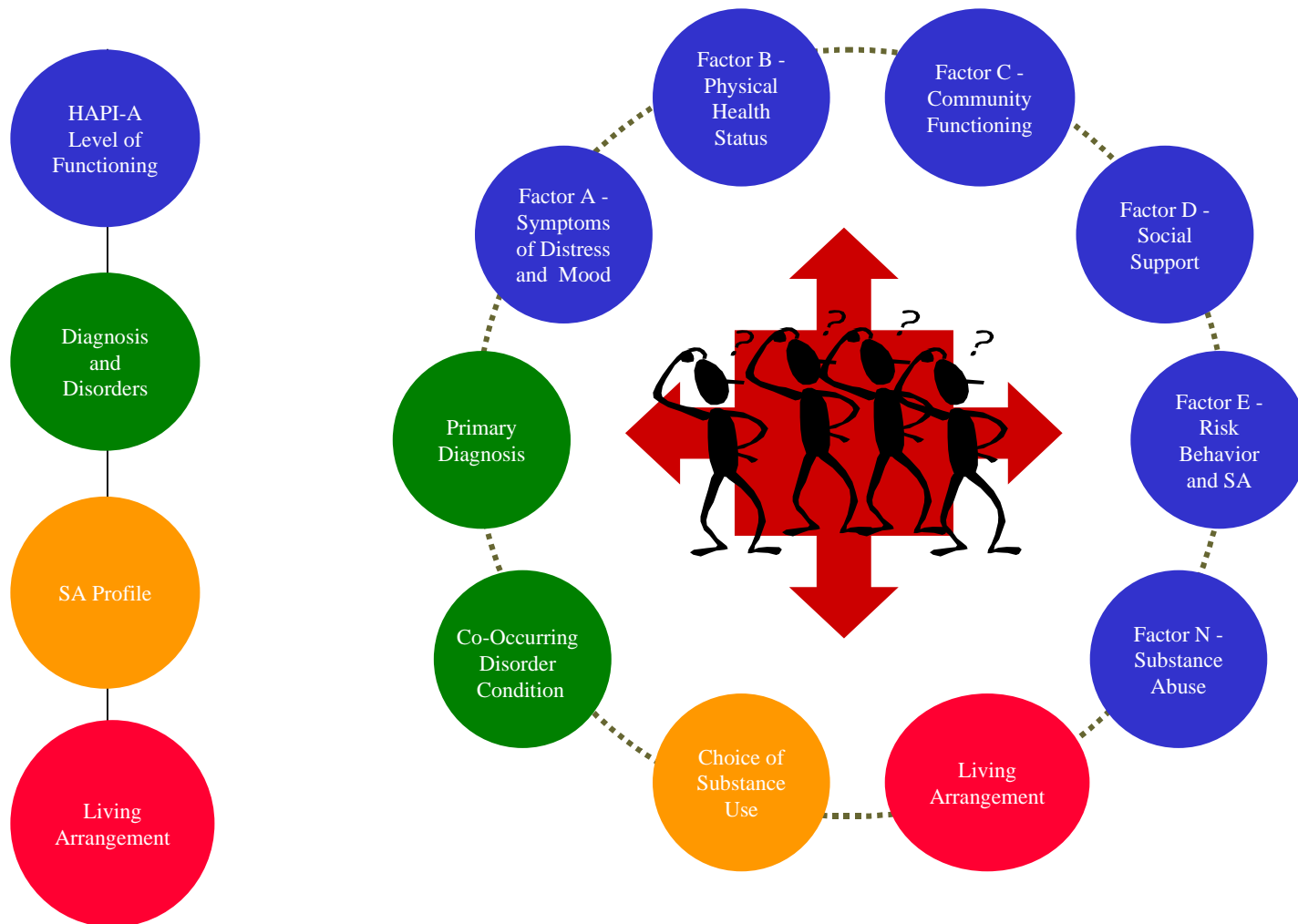
**Mercer conducted a literature review of risk factors that impact service utilization, non-utilization, and treatment recovery for dually diagnosed adults, children with serious emotional disturbance and substance abuse issues, state hospital populations, and welfare-to-work recipients**

Risk Domain	Risk Factor
<b>Demographics</b>	<ul style="list-style-type: none"> <li>▪ Age Group</li> <li>▪ Gender</li> <li>▪ Ethnicity</li> <li>▪ Marital Status</li> </ul>
<b>Socioeconomic Status</b>	<ul style="list-style-type: none"> <li>▪ Poverty</li> </ul>
<b>Clinical Status</b>	<ul style="list-style-type: none"> <li>▪ Impaired Functioning as measured by the HAPI-A</li> <li>▪ Impaired Functioning as measured by the HAPI-C</li> <li>▪ Diagnosis</li> <li>▪ Comorbidity</li> <li>▪ Prior Hospitalization History</li> <li>▪ Prior Abuse and Neglect History</li> </ul>
<b>Other Factors</b>	<ul style="list-style-type: none"> <li>▪ Geographic Location</li> <li>▪ Use of Medication</li> <li>▪ Prior Service Experience</li> <li>▪ Intensity of Prior Treatment</li> <li>▪ Referral Sources</li> </ul>



# HAP Specific Risk Factors

## *Key Characteristics*





# Co-Occurring Disorder Indicator

## *Our Methods*

**Co-Occurring Disorder Indicator** (a 5-character data field)

**MI Primary** = 295.xx to 298.xx

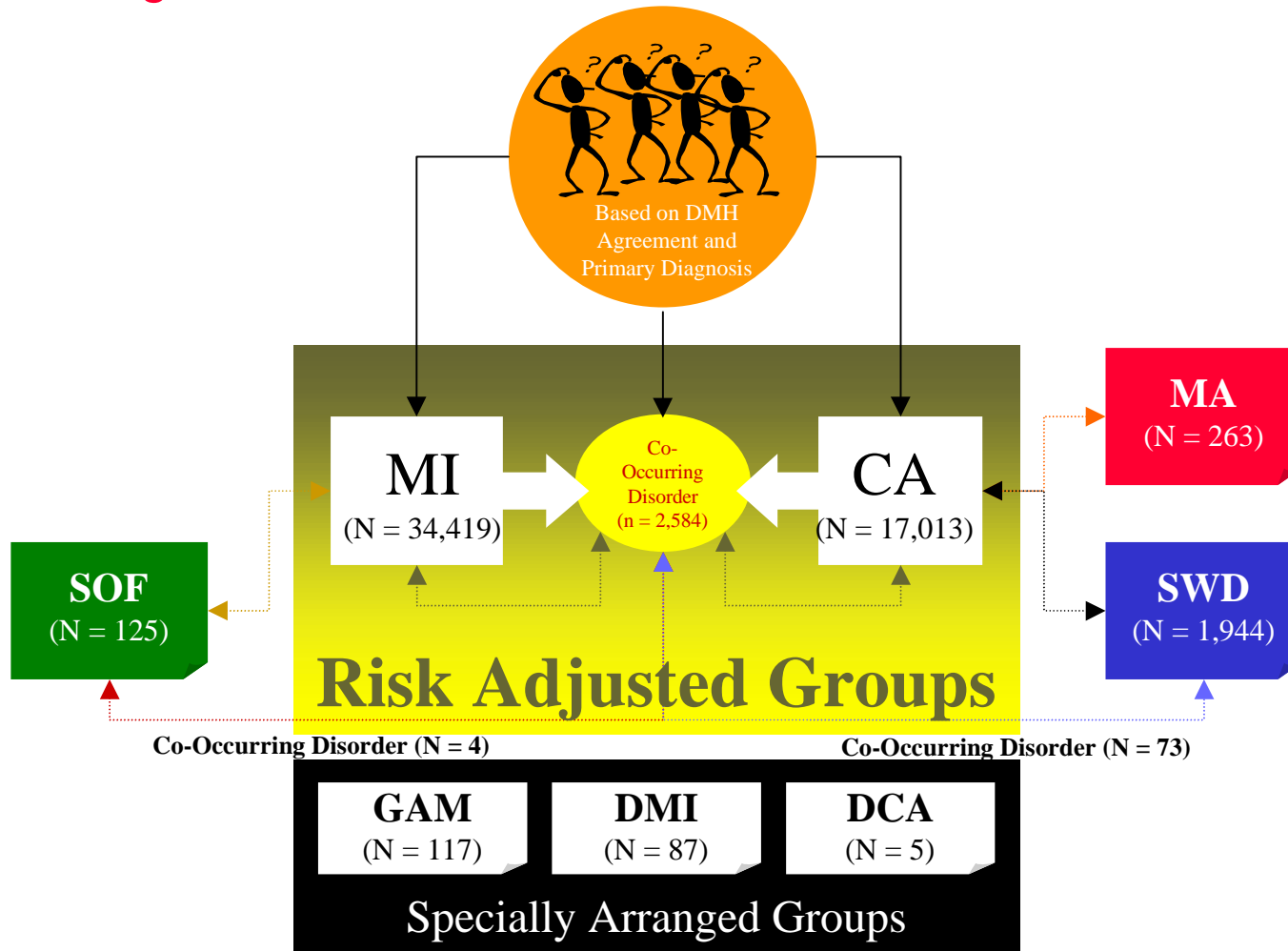
**CA Primary** = 303.xx to 305.xx (except 305.10 or 305.90) or 291.xx or 292.xx

- 1. Primary Diagnosis (Dx1):** If Dx1 = MI Primary , coded as "S", if Dx1 = CA Primary, coded as "C", else "N"
- 2. Secondary Diagnosis (Dx2):** If Dx2 = MI Primary , coded as "S", if Dx2 = CA Primary, coded as "C", else "N"
- 3. Substance (primary, secondary or tertiary):** If primary, secondary or tertiary substance = 1 (None) or 99 (Unknown), coded as "Y", else "N"
- 4. Primary Substance Abuse Treatment Episodes:** If SA Tx. Episodes = 0 or 9 (Unknown), code as "Y", else "N"
- 5. Substance Abuse Encounter Utilization:** If CPT = H0004 ... H0020, H0220, H0230, H0180, 80101, 80100 code as "Y", else "N"



# Identification of Risk Adjusted Groups

## *Our Strategies*





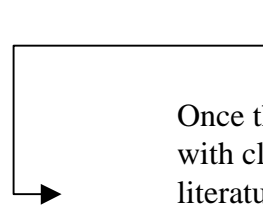
# Risk Adjustment Modeling

## *Our Analytic Approach*

### Statistical Approach

- Factor analysis of the assessment instrument subscales to determine what subscales are associated for each population.
- A series of regression analyses to form the groups.

**Factor analyses**, each population was divided into several exhaustive and non-duplicative random samples. Parallel factor analyses were conducted on the samples and factors that appear consistently across the samples were used to characterize the level of functioning for that population. Based on these analyses, one or two sets of subscales were identified for each group and a unit weighted score for the factor created.

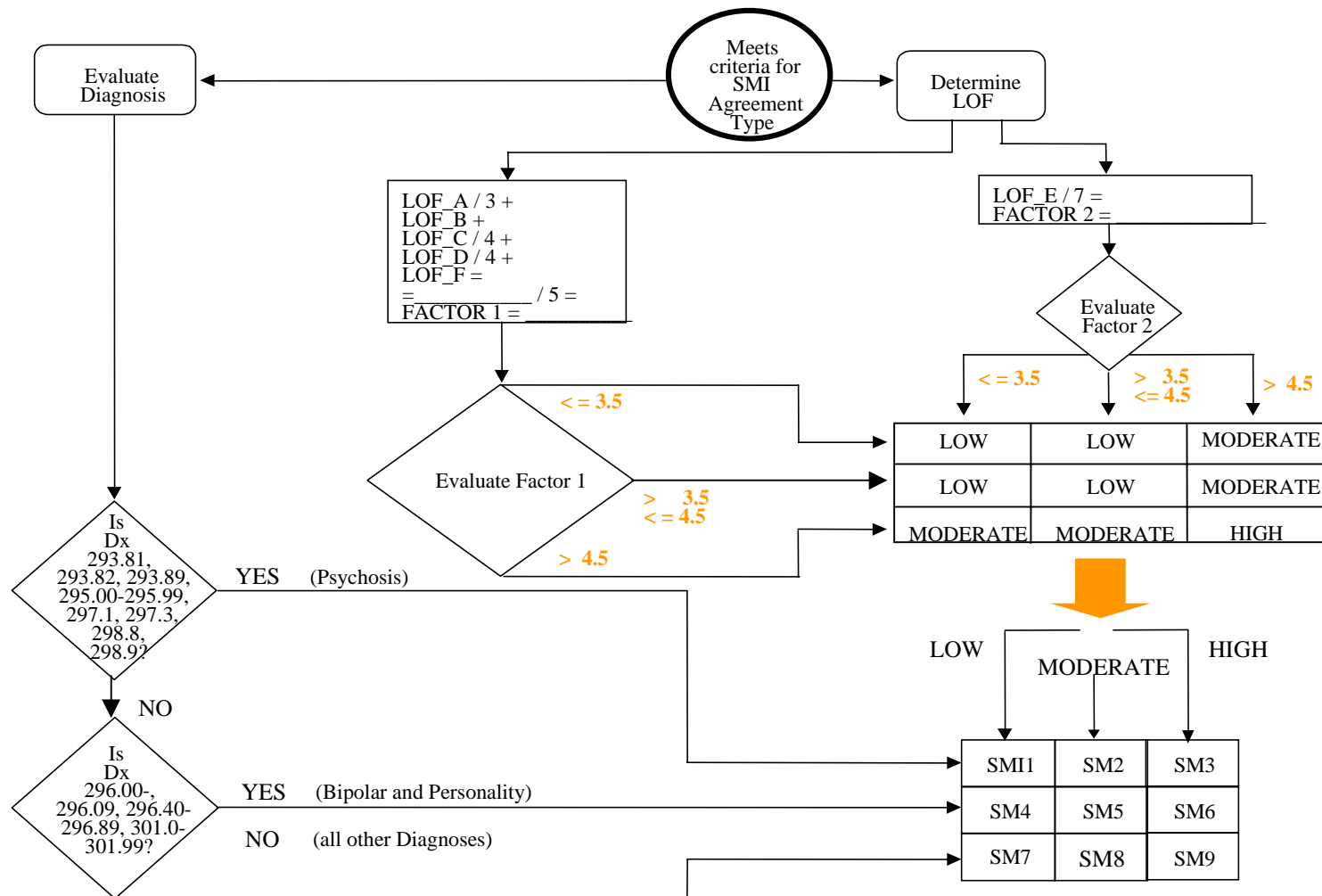


Once the level of functioning scores are established, they were entered, along with clinical, socioeconomic, and demographic variables identified in the literature review, into **regressions** predicting gross cost. These analyses were used as a screening technique to identify the factors which were most related to cost. Risk-adjusted groups were based on the regression results.



# Risk Level Flow Chart

## Original MI Risk Group (1998 Model)





## Formation of Risk Adjusted Group

### *Key Findings*

- Do the original MI risk adjusted groups require modifications?
- Should SOF be included in the MI category?
- Should individuals with co-occurring disorders be included in the MI category?



## Formation of Risk Adjusted Group

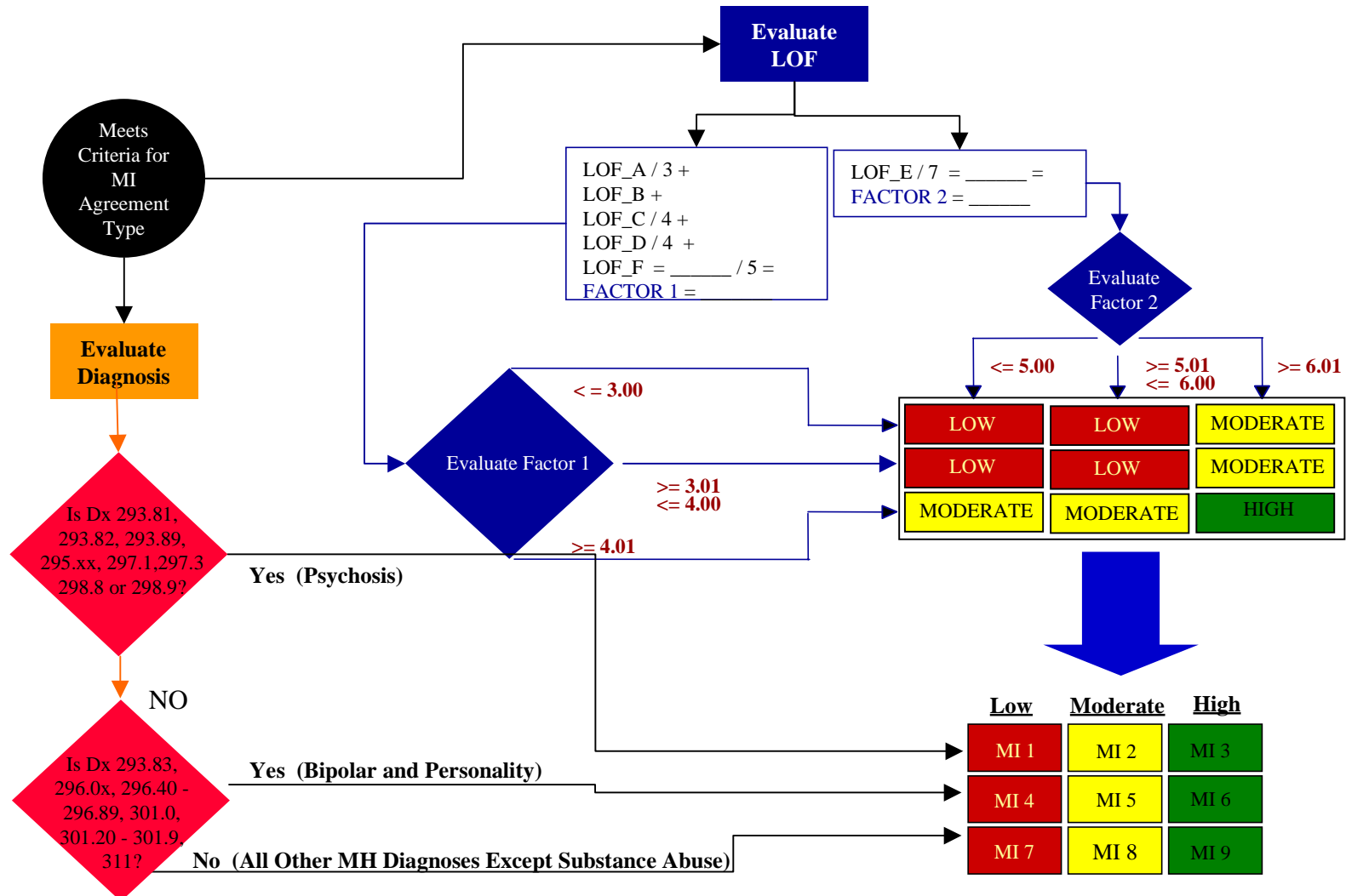
### *Key Findings*

- The number of low functioning clients has decreased, so very few fall into the group with the highest rate
- It is possible to change the cutoffs used in assigning levels of functioning



# Risk Level Flow Chart

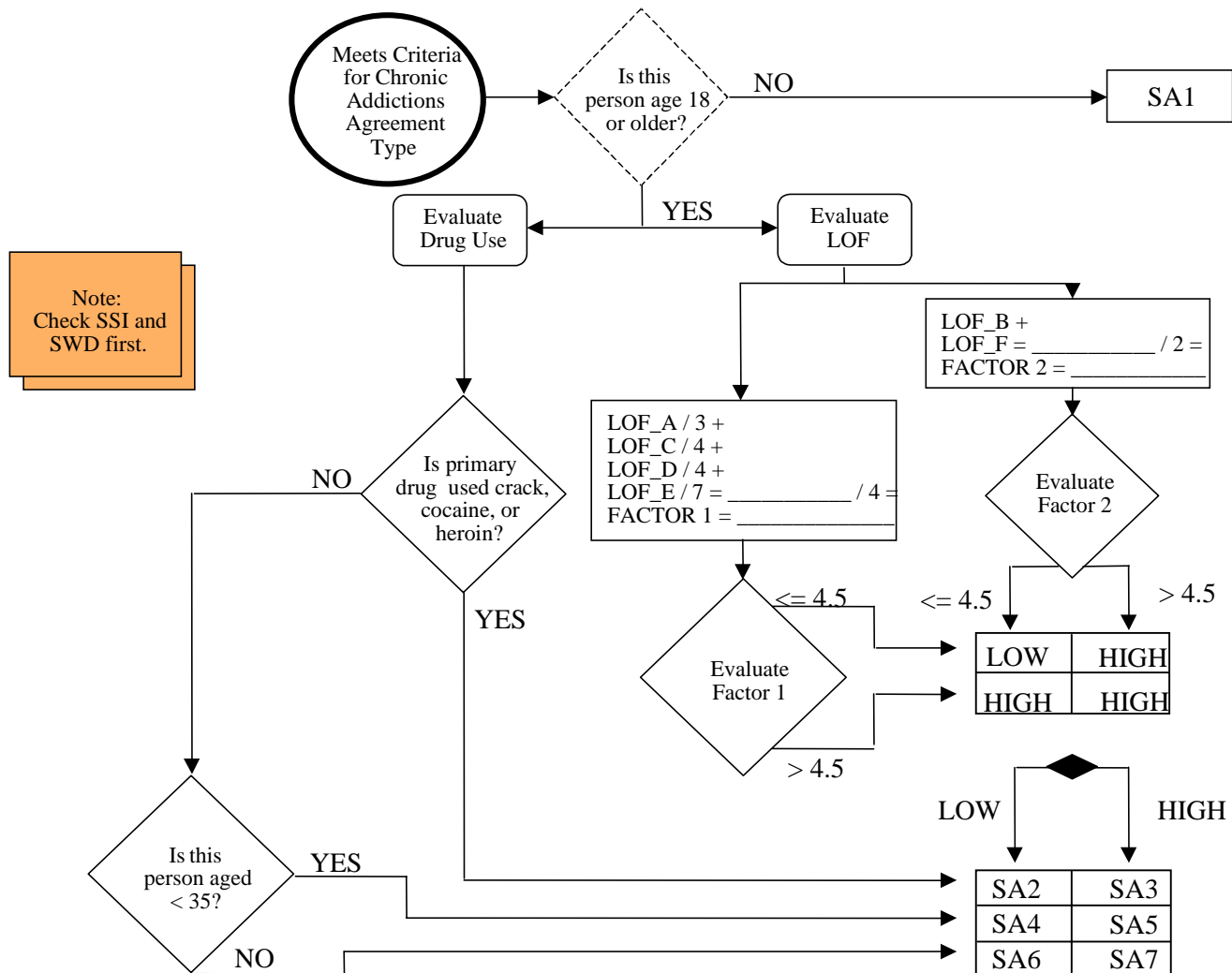
## Mental Illness (Proposed 2003 Model)





# Risk Level Flow Chart

## Original CA Risk Groups (1998 Model)





## Formation of Risk Adjusted Group

### *Key Findings*

- Do the original CA risk adjusted groups require modifications?
- Should SWD be included in the CA category?
- Should MA be included in the CA category?
- Should individuals with co-occurring disorders be included in the CA category?



## Formation of Risk Adjusted Group

### *Key Findings*

- The main problem with the CA risk groups is that low functioning client groups all have the same average monthly cost.
- The Crack/Cocaine/Heroin versus Other Drugs, 18 to 34 versus Other Drugs 34,+ no longer differentiates.
- The factor does work for the high functioning clients
- New factor needed



# Formation of Risk Adjusted Group

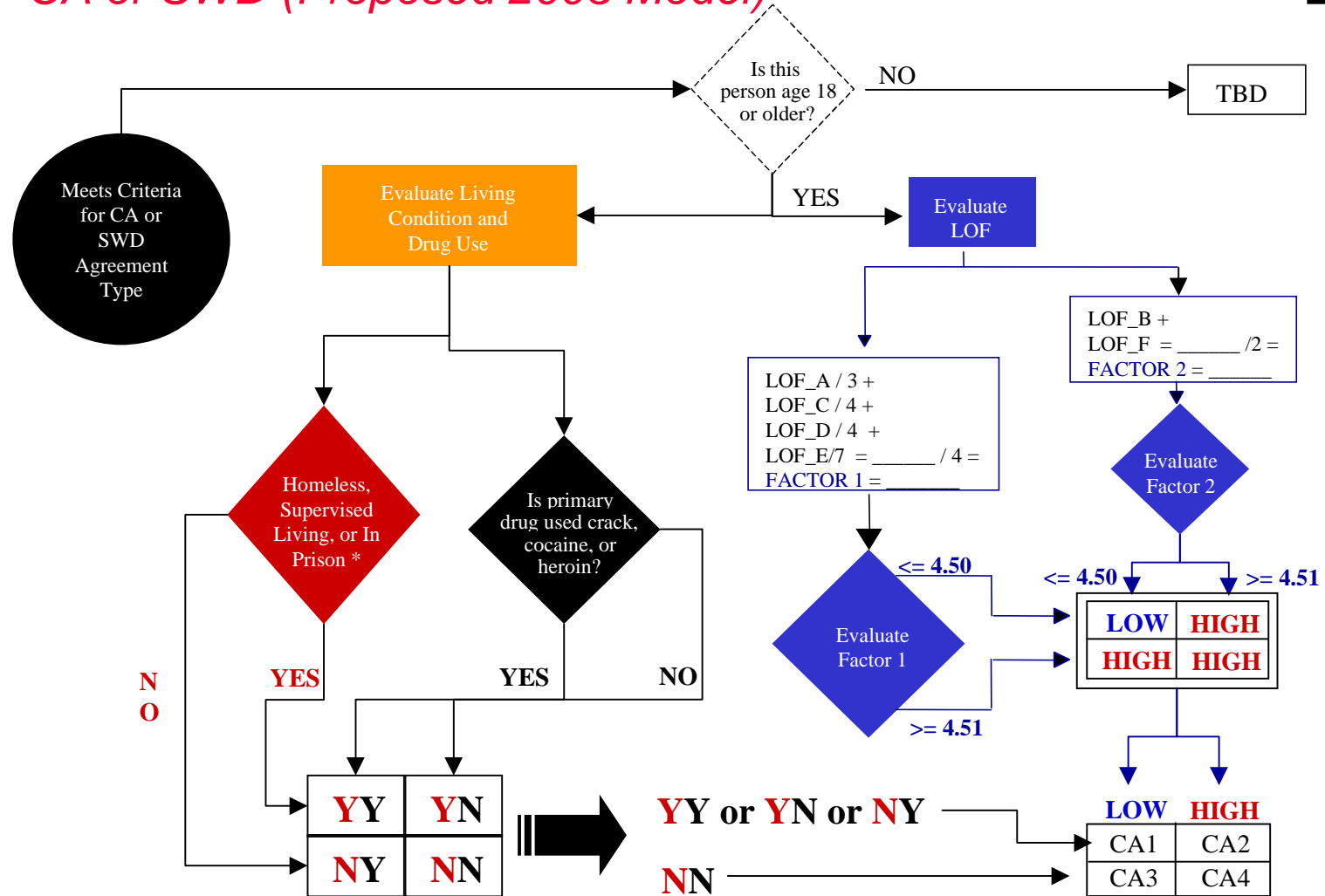
## *Key Findings*

- New CA Factor
  - Two components
    - ◆ Crack/Cocaine/Heroin versus Other Substances
    - ◆ Living Condition (Home Vs. No Home)



# Risk Level Flow Chart

## CA or SWD (Proposed 2003 Model)







# Co-Occurring Disorder Groups

## *Our Definitions*

**Individuals must satisfy the following criteria to be considered as having a co-occurring disorder.**

### **MI Primary (N = 1,795):**

- Dx1 = 295.xx to 298.xx and
- Dx2 = 303.xx to 305.xx (except 305.10 or 305.90) or 291.xx or 292.xx

### **CA Primary (N = 789):**

- Dx1 = 303.xx to 305.xx (except 305.10 or 305.90) or 291.xx or 292.xx and
- Dx2 = 295.xx to 298.xx



# Risk Level Flow Chart

## Co-Occurring Disorders (Proposed 2003 Model)

<sup>1</sup> Individuals must satisfy the following criteria to be considered as having a co-occurring disorder.

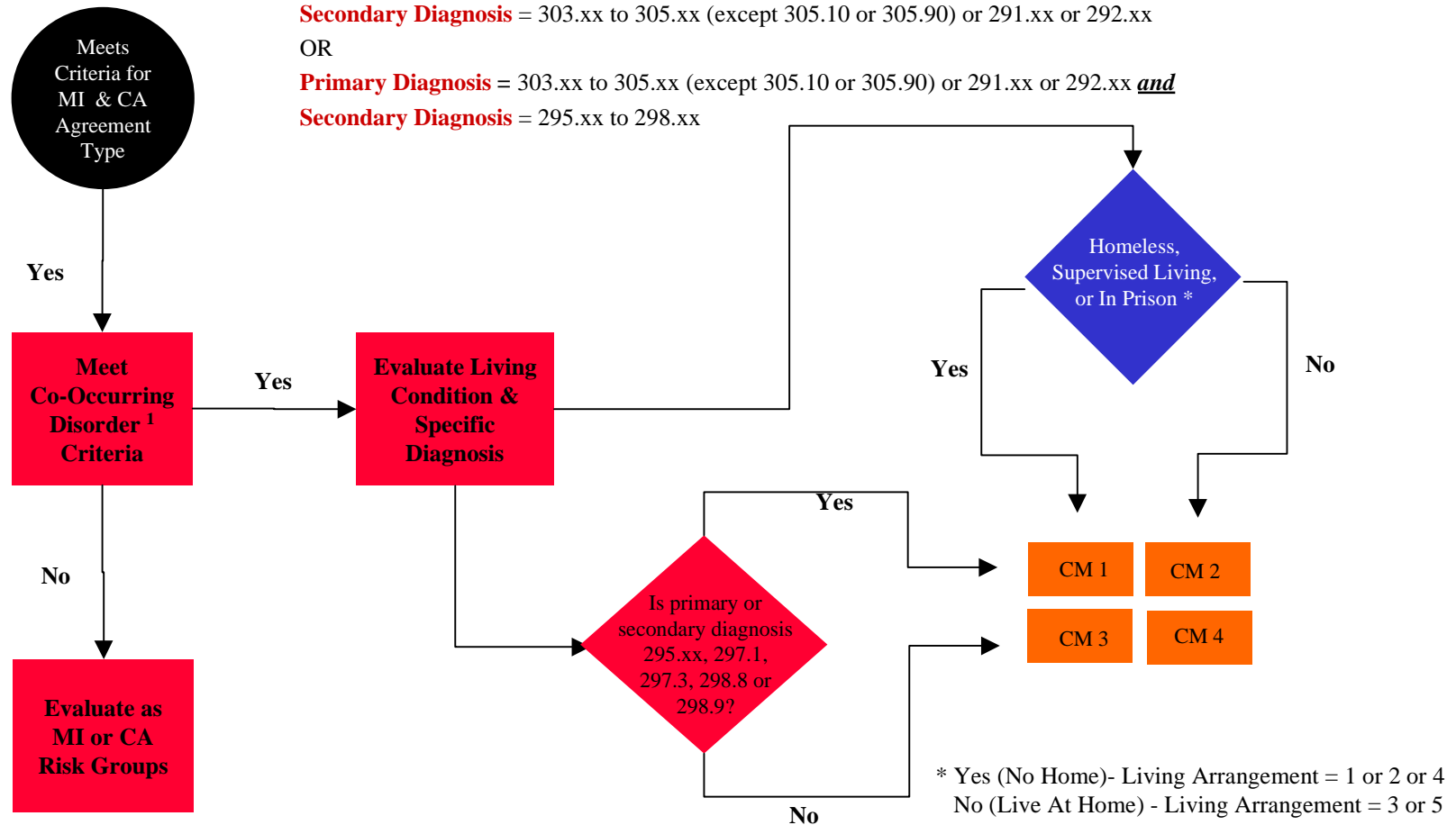
**Primary Diagnosis** = 295.xx to 298.xx **and**

**Secondary Diagnosis** = 303.xx to 305.xx (except 305.10 or 305.90) or 291.xx or 292.xx

OR

**Primary Diagnosis** = 303.xx to 305.xx (except 305.10 or 305.90) or 291.xx or 292.xx **and**

**Secondary Diagnosis** = 295.xx to 298.xx





## Case Rate

### *Methodology*

- Annual net cost = annual gross cost - revenues received from other sources (Medicaid MRO, Medicaid other, Medicare, etc.)
- Adjustment made to remove Federal share of Medicaid MRO dollars
- Base Year Case rate = annual net cost / total number of recipients over FY2001
- Applied an annual utilization and cost trend factor from base year FY2001 to FY2003.