

Colorado Mental Health Services' Population-in-Need Project

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Perspective of the State Mental Health Authority
Administrator and Planner Perspectives

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The Report is available online at:

<http://www.cdhs.state.co.us/ohr/mhs/PIN%20Report/home.html>

Initiation of the Colorado PIN Project

- the Administrator

Historically -

**§Reliance on Social Indicator Model to predict
“Population in Need”**

© **Factors included in model – Poverty,
Divorce rate, Suicide rate, Unemployment, Crime
rate**

© **Predicted prevalence by county**



Initiation of the Colorado PIN Project

- the Administrator

Historically

§Frequent, regular updates

© Recognized as crude, but best available
within available resources

§Uses – I do data . . .

Let's ask the Planner!

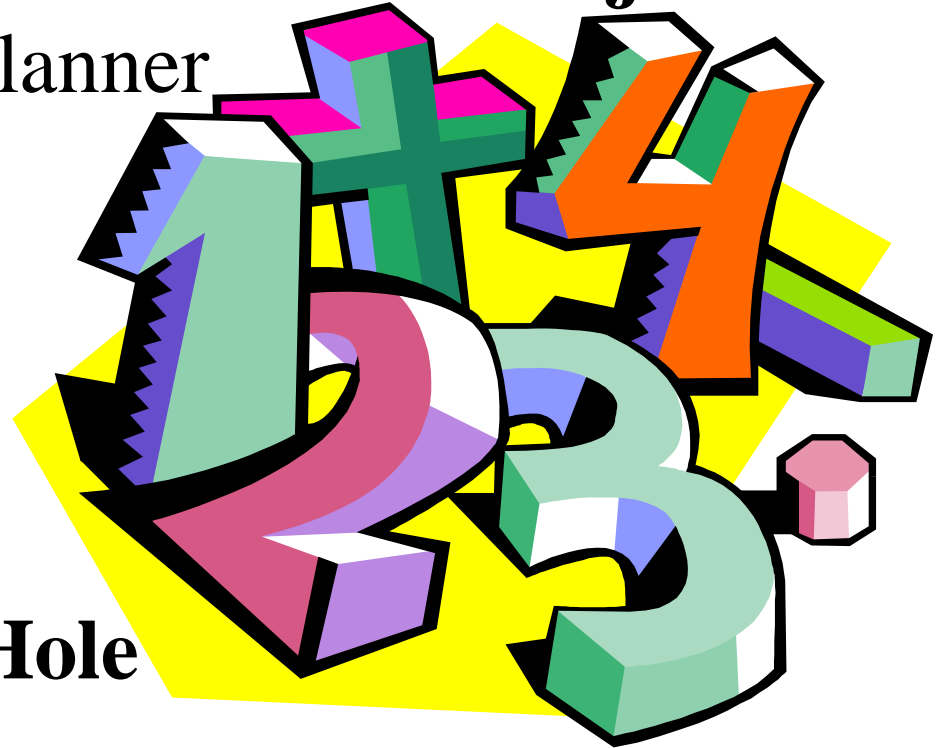


Initiation of the Colorado PIN Project

- the Planner

Related History:

- **Advocating for Dollars**
- **Message of Unmet Need**
- **Big Numbers – Endless Hole**
- **Out-Dated Numbers**
- **Wait List Survey Quarterly since 1995**

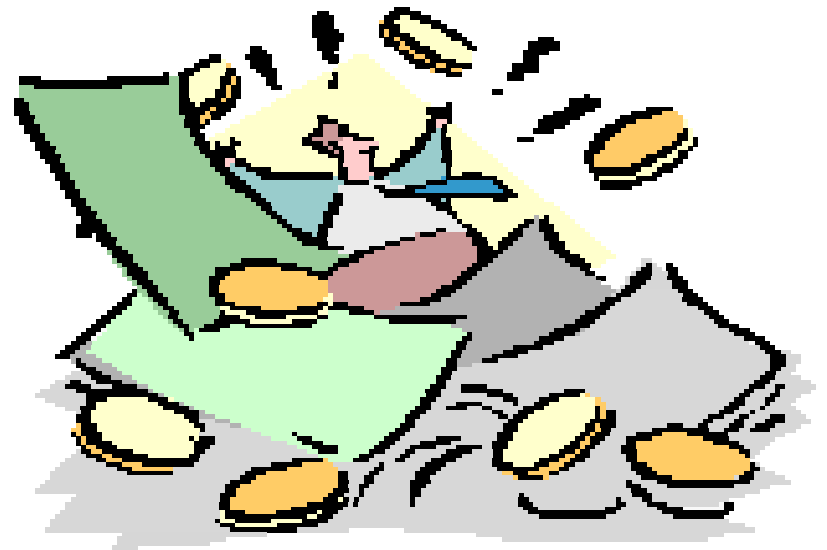


Initiation of the Colorado PIN Project

- the Planner

Flashpoint –

- ✓ State Auditor Support**
- ✓ Legislature mandates project for \$ allocation to service providers**
- ✓ Legislature provides funding through decision item in 2000**



Defining the Goal of the Colorado PIN Project - the Administrator



Considerations –

- **Anticipated Utility of Results – Demonstration of existing need**
- **Specific Uses: Historical uses, plus stronger platform from which to advocate with improved methodology; evaluation & research; education**
- **Clear definitions**
- **Data Available**



To estimate Colorado Population-in-Need of Public Mental Health Services...



We have a conundrum . . .

Who has “unmet need?” A person who:

- ❖ **Has a diagnosable mental illness and receives no MH services?, or**
- ❖ **Has SED/SMI and receives no MH services?, or**
- ❖ **Has a diagnosable mental illness and receives inadequate services?, or**
- ❖ **Has SED/SMI and receives inadequate services?**

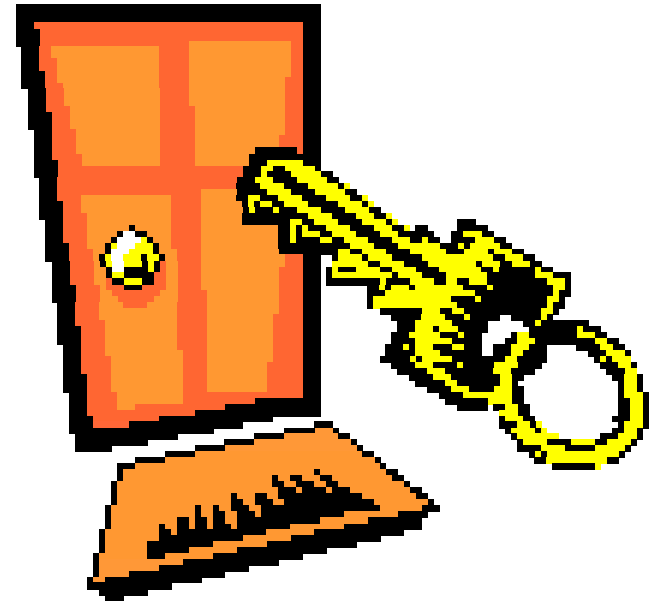
I.e., What aspect of need are we going to measure?

Measuring Sectors of “Need”:

What we did in the Colorado PIN

	Not Receiving Any Services	Receiving non-MHS Publicly Funded Services	Receiving Public MH Services	Receiving quality MHS Services in Sufficient Quantity
Any MH Diagnosis	Not Included	Not Included	Included	Not Included
Diagnosis of SED or SMI	Included	Included	Included	Not Included

**Defining the Goal of the
Colorado PIN Project
- the Planner**



Considerations –

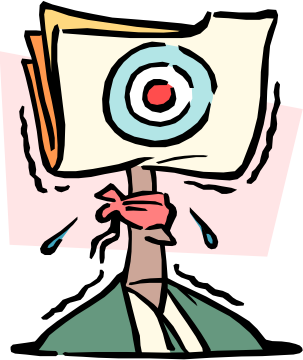
Anticipated Utility of Results

Specific Uses - Front Door Access

Provide Focus – Multi-Year Goal

Use Power of Common Voice

Prioritization: Regions, Populations, etc.



Anticipating the Consequences of the Colorado PIN Project - the Administrator

A Consideration in defining the goal and scope of the project

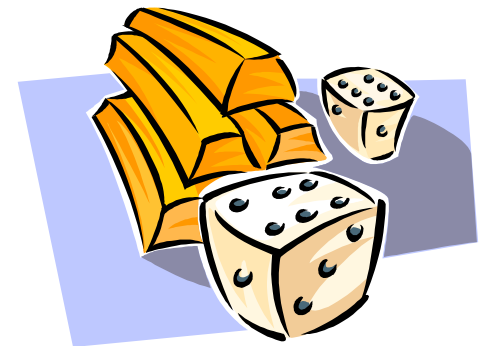
- Which questions need most to be answered by this project? “Maximum utility”
- What populations do we need to specify in estimating prevalence, I.e., who is in need? (aka needing to put the cart before the horse) – ages, income, race? “Prevalence”
- Who is using public services; who would use public services? “Utilization”

Anticipating the Consequences of the Colorado PIN Project - the Administrator

A Consideration in defining the goal and scope of the project

- What is the impact of identifying persons using more than one publicly funded system?**

- What are the implications of quantifying something called “unmet need?”**



“It’s what we call a massive data-base tally. Gladney, J.A.K. I punch in your name, the substance [you were exposed to], the exposure time and then I tap into your computer history. Your genetics, your personals, your medicals, your psychologicals, your police-and-hospitals. It comes back with [bracketed numbers with] pulsing stars. This doesn’t mean anything is going to happen to you as such, at least not today or tomorrow. It just means you are the sum total of your data. No man escapes that.”

- Don DeLillo, *White Noise*

Anticipating the Consequences of the Colorado PIN Project - the Administrator



Resistance

to Methodology “the best defense is a good offense”

! Have clear definitions and justifications!

to Results “the best defense is a good offense”

!Be clear about the uses!

to Interpretation “the best defense is a good offense”

!Frame the tale you will be telling!

Anticipating the Consequences of the Colorado PIN Project

- the Planner

Policy Implications

- Implication of methodological assumptions
- Interaction with other driving forces
- Demand for services
 - Waiting lists
 - Other available resources
 - Urban / rural considerations



Deciding on Approach to Project



- the Administrator

How? Given the definition of “need” for the project, how should it be approached for max validity

Who? Who is the population of interest

When? What time frames should be used for the project; what is available

With What? What should the approach be





Deciding on Approach to the Colorado PIN Project - the Planner

Value of an Expert

Considerations

Anticipated uses

- Planning activities
 - Local targets
 - Performance targets
- Formula for resource distribution
- Basis for inpatient bed allocation
- Support for budget initiatives



Operationally Define Terms in the Colorado PIN Project - the Administrator

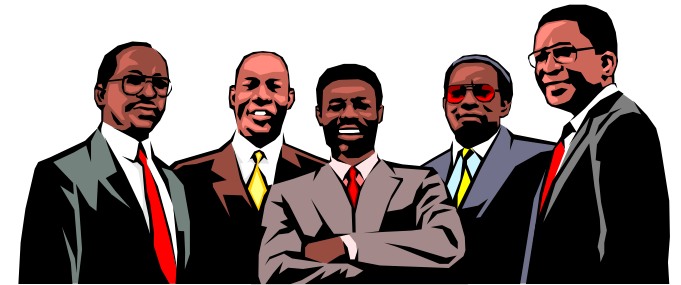


E.g., Who will be “measured” that we will call the Population in Need?

What population?

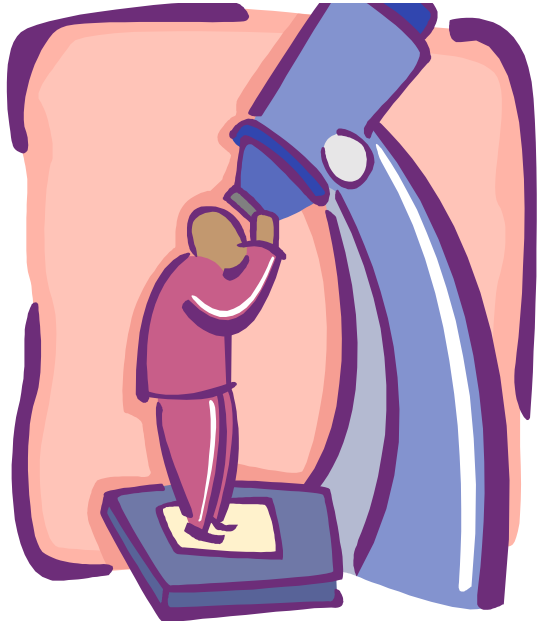
Who has need?

Who has need that is met?



What other sectors can be considered as meeting some aspect of need?





Operationally Define Terms
in the Colorado PIN Project
- the Planner

What will Population in Need really measure?

What do we mean by “unmet” need

What do we mean by “need”?



Building the Model for “Need” and “Met” in the Colorado PIN Project - the Administrator

#Methodology

#Prevalence Estimation = Need

#System Usage = Met

#Integrity

#Recognize operational limitations of model

#Tracking

#Close monitoring of process

#Decision points

#what sectors, what prevalences



Steps in Indirect Estimation

ONE: Analysis of survey data rates for demographic cells

Divide survey sample from direct estimation technique (National Comorbidity Survey) into optimal set of demographic cells, defined by factors that are predictors of psychiatric disorders using multivariate analyses.

Model factors: AGE, SEX, RACE, MARITAL, EDUCATION, POVERTY, RESIDENCE



Steps in Indirect Estimation

TWO: Determine cell-specific rates of disorder for each cell

Cross-tabulation of all the demographic variables with the specified diagnostic Variables produces crude rates of disorders for each of the study cells

THREE: Use survey regression estimates for cells

Logistic regression was used to analyze the distribution of rates among the 480 cells defined by the study factors. Used to examine the strength and significance of demographic predictors and to generate estimates of the “true” prevalence for each of the cells.

FOUR: Estimate local population structure (county and statewide) for demographic cells from census projections

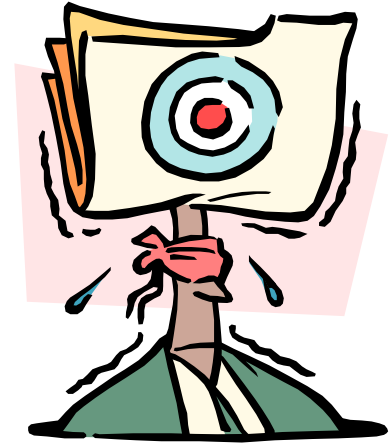
Combined four U.S. Census data sets to construct the demographic matrix.

Date sets used:

STF1a (Age x Sex x Race, Hispanic)
STF3a (Socioeconomic Characteristics)
Public Use Microdata Sample (PUMS) aka
Census Long Form (5% sample)
Census projections for age, sex, and race



Steps in Indirect Estimation



FIVE: Apply rates from survey to each population cell

The smoothed risks (of disorder) from the logistic regression analysis are multiplied by the corresponding cells of the demographic matrix

SIX: Combine cell counts for total estimates of prevalence

SEVEN: Rates for aggregated demographic subgroups and for a specific area

The estimated number of cases divided by the total population in the subgroup

Estimated Prevalence of SED/SMI Using Indirect Estimation

Service Area	Age Group					Total
	0-11	12-17	18-20	21-64	65+	
Adams	3,323	1,195	804	6,694	842	12,858
Arapahoe/D	2,582	989	541	5,149	746	10,007
Aurora	2,502	905	707	4,770	459	9,343
MHC	1,692	784	1,598	4,891	605	9,570
Centennial	1,159	564	353	2,401	490	4,967
State	37,382	15,815	14,625	88,079	12,977	168,878



Estimated Number of Unique Individuals who Use Human Services Systems in FY

PROBABILISTIC POPULATION ESTIMATION (PPE)

Uses universal identifiers with probabilistic determination to estimate the number of unique persons in a data set

Original data set is aggregated into a data set that is aggregated into a data set that consists of gender/year-of-birth records

Total number of people represented in the complete data set and the confidence intervals are obtained by combining results of every birth year by gender cohort in the original data set

Birthdate/gender combinations have expected distributions defined by likelihood of occurrence; if a particular combination occurs in a data set with a greater frequency than would be expected in an independent, random sample of individuals, we can conclude that there is duplication in the data set.

PPE Overview

Integrates demographic information in database

Applies probability theory to approximate the number of duplicated persons in a data set to ultimately arrive at unique persons served across systems

With measure reflecting only that people did or did not receive any services, caution in interpretation is warranted I.e, There is no measure of effectiveness

Data Sources Included

MENTAL HEALTH

Community Services, Capitated – CCAR

33,315 records

Community Services, Non-capitated – CCAR

45,831 records

Inpatient Services, Medicaid FFS

729 records

Inpatient Services, NonMedicaid

2339 records

Medicaid FFS: Community and Inpatient Services

62,900 records



Data Sources Included

CHILD WELFARE

57,223 records

DIVISION OF YOUTH CORRECTIONS

18,786 records

EDUCATION (SIED)

7983 records

MRDD

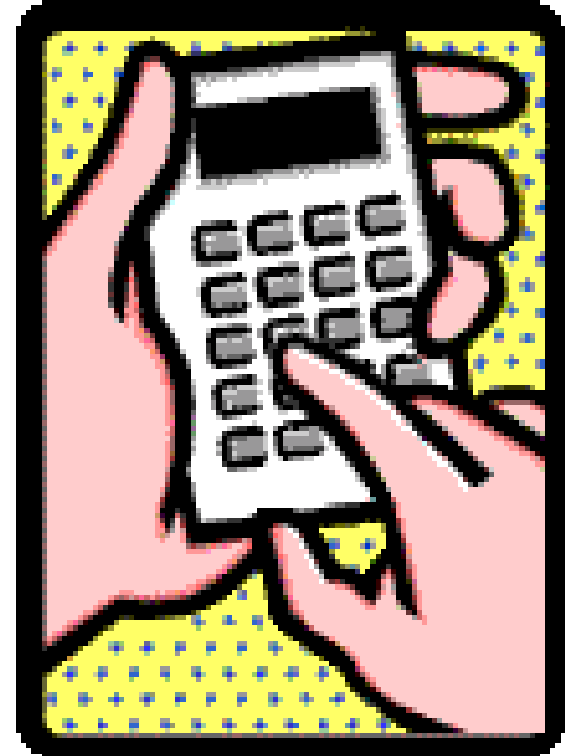
14,256 records

ADAD

44,400 records

VA

9,823 records



Other Sector Utilization: Under Age 21

	Mental Health	Child Welfare	Youth Corrections	Special Education	DDS	Alcohol and Drug
Total Served	27,987	50,260	9,632	8,447	6,588	5,229
Overlap MH and sector		10,372	2,344	2,855	626	720
# Subtracted from Need Estimate	27,987	12,565	2,312	8,447	454	2,614

Other Sector Utilization: Age 21 +

	Mental Health	DDS	Alcohol and Drug	Veterans Administration
Total Served	49,151	7,264	29,554	9,823
Overlap MH		1,258	2,958	238
Number subtracted from Need	49,151	508	8,866	9,823

Building the Model for “Need” and “Met” in the Colorado PIN Project - the Planner

How do we arrive at the numbers that are applicable for planning needs?

Who/What are we going to count for assessing need for services?

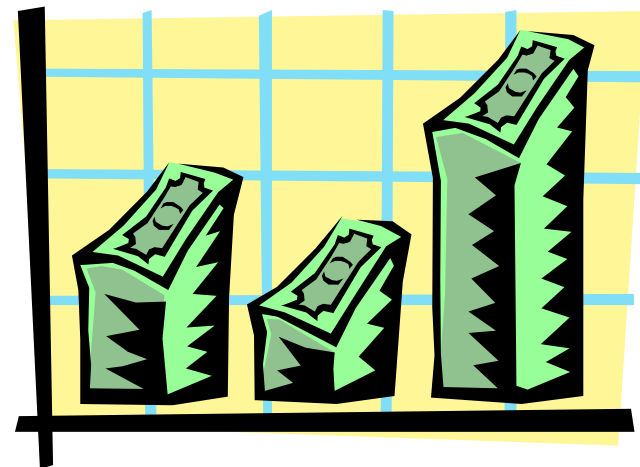
Who/What are we going to count for determining how many of those in need have need met?

How will the approach and results mesh with other related information we have?

Buy In for the Results of the Colorado PIN Project - the Administrator

Share with People - Involve them in process

- **having a say at decision points along the way**
- **participation in dissemination and explanation of results**



Buy In for the Results of the Colorado PIN Project - the Planner

Who Needs to Know?

What Do They Need to Know?

How Do We Share the Information?

Current Uses of the Results of the Colorado PIN Project - the Administrator

- Prevalence – by demographics**
- Validation of other results**
- Planning and Advocacy**

Current Uses of the Results of the Colorado PIN Project

- the Planner

**Verify previous claims for persons needing
services**

Prioritize funding

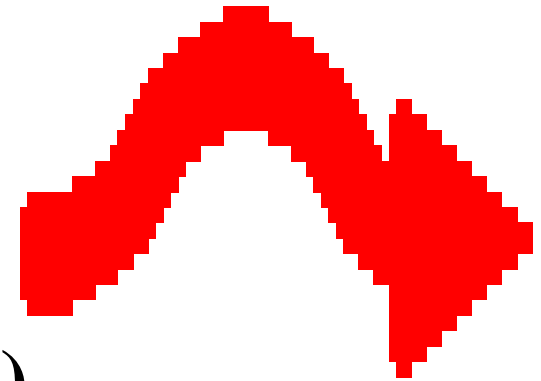
Allocating \$

Contracting



Lessons Learned from the Colorado PIN Project - the Administrator

- **Refined Methodology**



- **Datasets used (expand, refine)**

- **Incorporate cultural factors**



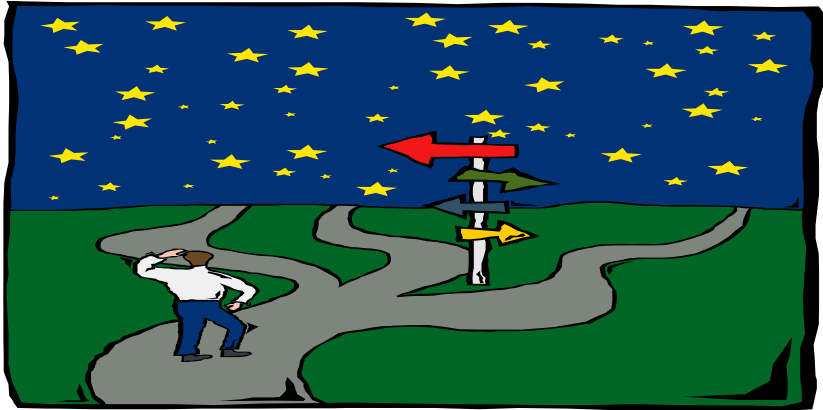
Lessons Learned from the Colorado PIN Project - the Administrator

- **Datasets with more specificity**

- **Definitional changes**

- **Process changes**





Lessons Learned from the Colorado PIN Project - the Planner

Other considerations that should be undertaken ...

- Involvement of stakeholders throughout process(?)
- Implication of methodological assumptions
- Interaction with other driving forces
- Demand for services
 - Waiting lists - Other available resources
 - Urban / rural considerations

**What We Ended Up with
in the Colorado PIN Project
- the Administrator**

	Persons with SED/SMI	Served MH	Served Any Sector	Unserved with SED/SMI
Under Age 21	67,822	27,987	37,781	30,041
Ages 21+	101,056	49,151	64,644	36,412
Statewide	168,878	77,138	102,425	66,453

What We Ended Up with in the Colorado PIN Project - the Planner

*An estimate of the number of people under
300% of FPL with SED/SMI in Colorado
who are not receiving any services from the
public human services system as defined in
this project*

THIS CONCLUDES MY
PRESENTATION.
ARE THERE ANY
QUESTIONS?

