Arizona Department of Health Services Needs Assessment Allocation Formula Recommendations February 2013

Prepared By:
LeCroy & Milligan Associates, Inc.
2020 N. Forbes Blvd., Suite 104
Tucson, Arizona 85745
(520) 326-5154
FAX (520) 326-5155
www.lecroymilligan.com

Prepared For:

Arizona Department of Health Services
Division of Behavioral Health Services
150 North 18th Ave.
Phoenix, AZ 85007

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INTRODUCTION

The Arizona Department of Health Services, Division of Behavioral Health Services (DBHS) manages the Substance Abuse Prevention and Treatment (SAPT), and Community Mental Health Services (CMHS) Block Grants. These federal grants provide a means for Arizona to provide prevention and treatment services to communities in Arizona and to individuals who do not qualify to receive Arizona Health Care Cost Containment System (AHCCCS), the state Medicaid program. These grants require the State of Arizona to establish an allocation formula for distribution of funds in the areas of prevention and treatment which considers the needs and resources of communities in addition to population. LeCroy & Milligan Associates were hired in September 2012 to collect input from stakeholders, review existing data and trends, identify areas of unmet need, and develop options for allocating financial resources based on needs, resources, and population.

Distributing funds via a formula is never a simple process. Although a designated formula may help alleviate inequality in funding distribution, and furthermore make it easier to understand how funds are being allocated throughout the state, there is always debate on the merit of individual formula metrics included in the formula. The reliability and consistency of data behind individual formula metrics remains an ongoing issue (Buehler & Holtgrave, 2007). Some stakeholders will inevitably be skeptical of the formula metrics included in the formula or the weighting attached to the metrics. The very concept of funding equity can vary between individuals and between behavioral health organizations (Michigan Department of Community Mental Health, 2007). For these reasons LeCroy & Milligan Associates fastidiously researched how other states have developed and implemented similar allocation formulas, evaluated numerous potential formula metrics (for measuring community need and resources), and sought insight and feedback from funding stakeholders throughout the formula building process. Using the information from other states that are also working to change their public funding allocation formulations along with guidance from key stakeholders in Arizona, LeCroy & Milligan Associates formed a list of possible formula variables. These variables were then condensed to include only the variables with the most promise for use in allocation formulation.

PUBLIC FUNDING VIA FORMULA ALLOCATION OVERVIEW

Billions of dollars in federal funding are allocated to state and local governments using formulas. Many of these formulas were developed prior to 1980 and most have strict legislative specifications attached to variables in any given formula. Different variables are used depending on the type of funds being allocated. Some basic variables utilized at the federal level are: population, per capita income, and local tax rate and local health care cost adjustments (Gonzalez, 1980). Examining these formulas is helpful for highlighting the historical foundation of formulae based allocation in the public sector and for insight into developing metrics that will reflect upon need in a given locale. However, most federal formulas, designed for a specific population subgroup (Example – Federal Aid to Families With Dependent Children) can only guide the theory and methodology in producing formulas for distributing substance abuse and mental health money at the state level.

In the past several years many states have worked to develop allocation formulas with the stated goal of more equitably distributing public funds. Although distributing public funds using a formula is not new, the development of more sophisticated formulas at the state and local levels has only recently become a priority. Many older formulas are considered to be out-of-date as new technologies emerge and state sponsored data or epidemiology workgroups are making more community level data available. Considering the new types of data available to administrators at the state level there are four primary methodologies that can be considered in allocating funds (Burgess et al, 2002):

Methodologies for Allocation

- *Uniform or flat-rate models*: These models assume that there is no difference across geographically-defined populations in terms of mental health need. Implicitly or explicitly, they therefore recommend that funding should be distributed equally across areas.

- *Social Indicator models using synthetic information*: These models take individual-level demographic data drawn from previous population-based, individual-level surveys, and examine given levels of need for particular population subgroups (e.g. based on age/sex groupings) from that survey. The overall population structure of the area under consideration is then divided on the basis of the same subgroupings. They then model the needs for the given area, assuming that the patterns of need within area-based subgroups will be the same as those found in

the survey for the population subgroups.

- *Social Indicator models based on service utilization and prevalence*: These models take indirect social indicator variables at an area-level (e.g. emergency room visits), and examine their association with a given measure of need from the same area, using regression analysis. These models can be subclassified in terms of the type of measure of need they use. Need is typically related to: service utilization (e.g. admissions to acute psychiatric wards); or prevalence (e.g. levels of psychiatric morbidity).

- *Social Indicator models based on expert judgment*: These models use expert judgment to determine the social factors likely to have an influence on need. Typically, these models are only used in the absence of more objective measures of need or are a combination of above mentioned methods.

Examples of Substance Abuse and Mental Health Funding Allocation

As Burgess et al (2002)point out countries (including the USA) continue to decentralize accountability for health service delivery and population health outcomes to regional health authorities, making it necessary to evaluate area-specific inequalities in health need and service utilization (Burgess et al, 2002). There are difficulties in achieving this as a majority of states have not developed Substance Abuse and Mental Health Services Administration (SAMHSA) block grant formulas that determine allocation allotments based on community need and resources. The few states that have tackled the prospect have been presented with some common pitfalls:

- *Risk Factors vs. Utilization*. A workgroup in Wisconsin formed to examine options for allocating child welfare dollars to counties developed two different formulas, one based on risk factors that were shown to correlate with child abuse and another using each counties social worker caseload, to determine allocation amounts. The question to be addressed in this scenario is whether it is better to use upstream data (risk factors for a particular behavior), or after-the-fact data showing which counties have more substantial caseloads. (Durkin et al, 2011)

- *Cluster Formula vs. Simplified Formula*. A formula workgroup from Maryland State Drug and Alcohol Abuse Council found it difficult to determine not only which data variables to use in their allocation formula but whether it should be clustered or simplified so that county constituents (stakeholders) could more easily understand the changes in formula distribution. The formula workgroup

determined that if a cluster model were chosen four main social indicator metrics could be used in the areas of: environment, crime, health, and estimated treatment need. The simplified formula only involved population and poverty data in each county. (Maryland State Drug and Alcohol Abuse Council, 2007)

- *How to weight each variable*. Sometimes the weight attached to a particular risk factor can be calculated via a regression analysis (number of children in single parent homes correlated to number of Child Protective Services (CPS) cases investigated in a county) as was the case for the Wisconsin workgroup allocating child welfare funds (Durkin et al, 2011). In other formula models weighting variables can be incommodious, especially when a cluster formula is used.

- *Stakeholder dissatisfaction*. Any changes to an allocation funding formula should be completed with input from regional health boards and all other stakeholders associated with healthcare services. Regardless of the formula adopted, any changes to the funding levels of individual organizations and Regional Behavioral Health Authorities (RBHAs) should be thoroughly examined. The Ohio Department of Mental Health advices all states implementing changes to a funding formula implement the revised funding formula in annual increments during the first few years of the new plan, to smooth out the transitional effects for local boards (Seiber et al, 2012).

LeCroy & Milligan Associates contacted several other states in order to gain more insight into the formulations they had chosen or were in the process of choosing for allocation. In late October 2012, LeCroy & Milligan Associates compiled a list of other states to contact based on SAMHSA Substance Abuse Prevention and Treatment (SAPT) and Community Mental Health Services (CMHS) block grant applications. Based on in-application references to allocating monies via a formula, six states were identified as key contacts for gathering more info:

- Nebraska
- Ohio
- Wisconsin
- Utah
- Colorado
- Michigan

One of the most advantageous contacts made by LeCroy & Milligan Associates during the initial research was Helen Anne Sweeney from the Ohio Department of Mental Health. Throughout 2009 she and her colleagues at the Ohio Department of Mental Health worked with researchers at Ohio State University's School of Public Health Center for Health Outcomes, Policy and Evaluation Studies (Center for HOPES) to examine the validity of assorted variables for inclusion in an allocation formula. Their joint work on developing an allocation formula for distribution of mental health monies to the state's 53 local health boards spawned a published article in the 2011 Community Mental Health Journal, *Mental Health Community Based Funding: Ohio's Experience in Revising Its Funding Allocation Methodology*. The four broad factors for consideration when developing a funding formula to allocate state funding for community mental health services to local boards in an equitable manner, based on local community need, presented in the article became a road map for our work toward creating a formula for Arizona. These factors are: (1) funding factors used by other states; (2) state specific legislative requirements; (3) data availability; and (4) local variation of factors in the funding formula (Seiber et al, 2012).

REVIEW OF ALLOCATION FACTORS FOR OTHER PROGRAMS

Funding Factors Used By Other States

Throughout October and November of 2012 LeCroy & Milligan Associates gathered allocation formula information from the key contact states. Of these Nebraska, Colorado, Ohio, and Michigan provided material that was helpful in examining funding factors and their inherent strengths and weaknesses in representing prevention and treatment need in a region. The formulas utilized across these states to distribute SAPT and CMHS block grant funds varied in their approach. However there were a few formula variables that were regularly used.

- Most common variables used:
    - Population
    - Poverty Level
    - Serious Mental Illness (SMI) or Serious Emotional Disturbance (SED) Prevalence

- Others variables used:
    - Medicaid caseloads
    - Emergency room admittance with drug related codes
    - Treatment admissions

- Drug-related crimes
- Homelessness
- A rural differential

Nebraska

Nebraska opted to keep things very simple and have only added one variable to population. The formula for distributing SAPT grant funds in Nebraska, which is structured in a similar way to Arizona with Regional Behavioral Health Authorities receiving money to serve a designated population, is "three parts population, one part poverty" (Adams, S., personal communication, 2012). The rationale behind adding poverty to the allocation formula is that poverty has been found to be a significant predictor of mental illness hospitalization rates across states (Bye and Partridge, 2003). This is a simple formula and easy to explain and justify to stakeholders.

Colorado

Colorado chose to employ more layers of data to their formula, requiring more intricate data collection techniques. In 2009, the Colorado Division of Behavioral Health contracted with the Western Interstate Commission for Higher Education (WICHE) Mental Health Program to produce a comprehensive Population in Need study that demonstrated not only prevalence of certain mental health illnesses in a region but also projected numbers of people with SMI and SED with unmet need in a region (WICHE, 2009). The "unmet need," calculated into a penetration rate (by dividing the number of individuals utilizing behavioral health services by the number of individuals with a serious behavioral health disorder), is used as the primary funding metric in Colorado's formula. The unmet need and penetration rate figures also include a measure of poverty, as only people with a serious behavioral health disorder under 300% of the FPL are included in the study. This method is only feasible when state or other funding exists to complete a comprehensive need assessment of this level. The prevalence rates will need to be recalculated regularly to adjust for changes in population over time.

Ohio

Mental Health Community Based Funding: Ohio's Experience in Revising Its Funding Allocation Methodology provides a brief historical perspective to funding formulas used in Ohio over the past 25 years. Ohio's funding formula has changed multiple times during this period as old funding variables were found to be inadequate and others became viable through new data collecting priorities. In the early 1990s, the formula

was shifting from historical hospital use data from each catchment area to a 50/50 split between a count of Severely Mentally Disabled (SMD) adult cases for each board and an Unmet Need (prevalence) factor (Seiber et al, 2012). Hospital utilization patterns were being shown to significantly fluctuate from year to year. This was precipitated by the closure of many of the state hospitals. From 1988 to 2008, Ohio reduced the number of free-standing inpatient mental health hospitals from 17 to 7, reallocating over $500 million from hospital costs to community care. As hospitals closed, the weighting on past hospital utilization was reduced, and less funding was produced for boards that had previously had a public hospital in their service area. This reallocation from some boards with high public mental health utilization to others with lower utilization proved contentious. (Seiber et al, 2012).

By the mid-1990s only 20% of catchment area funding was allocated based on hospitalization utilization, with the remaining 40% on SMD count and 40% on Unmet Need. From 1998, the states mental health board introduced a "hold harmless" provision to the allocation formula so that area health boards would not experience a reduction in funding. State population demographic shifts along with financial stressors to the mental health system in the state made the "hold harmless" clause untenable by 2006.

Ohio's most recent examination and overhaul of the mental health allocation formula began in early 2008 when Ohio Department of Mental Health (ODMH) staff began meeting with an advisory committee comprised of representatives from the local boards to establish system finance principles to be considered in the new funding formula. The formula advisory committee sought insight from a variety of stakeholders and were given ample feedback in regards to what factors should be incorporated into the formula. Proposed factors included board expenditure and revenue data, local poverty measures, a cost-of-doing business index, unemployment levels, proportion of minority population, Medicaid enrollment, total square miles in the board catchment area, presence of a prison or state mental hospital, and other considerations (Seiber et al, 2012). Faced with competing factors to include in the revised formula, ODMH staff developed a conceptual framework to evaluate the merits of each proposed factor. To be included in the funding formula, factors had to meet the following conceptual criteria (Seiber et al, 2012):

1. Do these factors meet the system financing principles?
2. Can data be gathered so that ODMH staff can compute the factor for each board?

3. Are data associated with the factor verifiable?
4. Does the factor accurately reflect what is currently happening in the board area?
5. Does the formula include the SMD factor?
6. Does the formula include a total population factor?

One important insight garnered from Ohio is that relying heavily on national data sets to inform county and community variables can be dubious. Often national data gathered on substance abuse risk behaviors is not sufficient for small-level populations within a state (Seiber et al, 2012). Prior to 2007 Ohio utilized the US Census Bureau's American Community Survey data to determine SMD prevalence numbers for each of the 50 local board areas. The ACS micro data proved insufficient since the Census Bureau limits the release of geographic identification for areas with populations of less than 100,000 to ensure confidentiality for survey respondents (Seiber et al, 2012). Beyond national restrictions to disseminating rural area survey results to ensure confidentiality national survey data rarely serves local data needs because of insufficient sample size and a lack of flexibility to address local health issues and system structures (Simon et al, 2001). Members of the funding formula team in the Ohio Department of Mental Health ended up using data from the Ohio Family Health Survey, conducted every five years by the State of Ohio, to determine local area SMD prevalence numbers for the formula. After much deliberation the funding formula team chose to use population, poverty and the prevalence of SMD individuals based on the Ohio state conducted survey.

Michigan

In 2007 with the passing of appropriations bill (Act 330 of the Public Acts of 2006) for the Michigan Department of Community Health (MDCH) a funding equity workgroup was created to examine the funding formula used to distribute funds to all Community Mental Health Service Providers (CMHSP). The workgroup, made up of CMHSP leaders, state health department representatives, and other stakeholders in the mental health community, in their initial report outlined many statutory and practical difficulties to achieving "recipient equity" in the system based off a formula (Michigan Department of Community Mental Health, 2007).

The workgroup highlighted how enigmatic equity was to achieve. Community need and capacity for mental health treatment services was easily understood but difficult to quantify based on any specific formula variables. The workgroup examined various

utilization data, and researched the connection of social indicators to mental health illnesses. Nevertheless, workgroup stakeholders were unable to come to a consensus on which variables should be included in the formula. Despite disagreement among workgroup members, the funding formula was modified to include three main variables of need:

1. Population;
2. Poverty rates;
3. SMI prevalence.

The Michigan *Workgroup Plan to Achieve Funding Equity for All CMHSPS* also provided a good discussion on the concept of equity in determining factors for inclusion in a behavioral health funding formula. There were clear differences among stakeholders regarding what is meant by the concept of equity (e.g., recipient equity, taxpayer equity, organizational fiscal-capacity equity, etc.). Additionally there were:

- Concerns regarding the complexities in determining and weighting variables of need;
- Disagreements on how to measure and incorporate differences in cost of services (COS) as a formula component;
- Data source and data quality issues;
- And questions regarding whether improving "equity" in one funding strand (general fund) might potentially increase overall fiscal disparities (total organizational fiscal-capacity) within the current, very complex and intricate, multiple source funding environment (Michigan Department of Community Mental Health, 2007).

One interesting option the workgroup examined, in exploring the concept of organizational fiscal-capacity equity, was to try to incorporate each CMHSP's carry-forward and retained earnings, earned contract revenues, and the size of an organization's unrestricted fund balance, either into the formula equation or as secondary info to distribute additional funds to those CMHSPs with high "expenditure needs." Although the option was not adopted, some workgroup members thought some general funds should be reserved and allocated to organizations to reduce "expenditure need," the gap between what other entities have through an assortment of funding arrangements and retained earnings, and what the more disadvantaged organizations need to sustain and provide a certain standard level of service provision (Michigan Department of Community Mental Health, 2007).

Insight from within Arizona: Funding Formulas from Other State Departments

In order to gain some additional insight into the specific needs of Arizona, LeCroy & Milligan Associates contacted personnel within other Arizona governmental agencies and departments. Khaleel Hussaini, Bureau Chief of Public Health Statistics, Arizona Department of Health Services, provided constructive advice on how to amalgamate a group of factors into a needs index. In 2011, Dr. Hussaini and his colleagues in the Public Health Department developed a needs assessment formula for the Affordable Care Act (ACA), Maternal, Infant and Early Childhood Home Visiting (MIECHV) grant (Arizona Department of Health Services, 2011). Per the MIECHV, Supplemental Information Request, "at-risk" communities were to be highlighted using 21 designated indicators. Dr. Hussaini employed an analytical strategy to identify "at-risk communities" using a ranking methodology that averaged each region's indicators to produce an overall risk score. The index developed, much like the Youth Drug Severity Index from the Arizona Criminal Justice Commission, utilizes a number of indicators to produce an index score which can be compared to other geographical areas in the state.

Another important contact within the state was Laura Guild, Domestic Violence Program Manager from the Arizona Department of Economic Security. In 2012, the Arizona Department of Economic Security changed the way it distributed Domestic Violence Shelter Funds (DVSF) moving from allocating most funds on a competitive basis to utilizing a formula to distribute money based on variables of need within a community. During 2010 and 2011, key members of the Arizona Department of Economic Security consulted with state coalitions against domestic violence to develop a weighting methodology for formula variables. In developing the DVSF formula four principal components needed to be included:

1. The need for services
2. Existing services
3. Geographic location
4. Population ratios

The final DVSF funding formula included a base funding amount for every domestic violence shelter. All funds beyond the base amount were to be calculated based on population by county, beds (the number of single adults a shelter can accommodate), and a rural area weighting. Rural areas were to be weighted at 1.5 to help address financial and resource restraints common in bucolic regions. They were also able to provide some insight into how to manage stakeholder disputes over funding changes.

Involvement of stakeholders prior to the development of the formulation as well as addressing feedback based on the allocation prior to the release of the allocation formula were important for reducing the negative impact by stakeholders. This did not however preclude newspaper reports of "cuts in funding" based on the new allocation formula (Verbrigghe, D., 2012).

STAKEHOLDER INVOLVEMENT/SUGGESTIONS

In previous years the Substance Abuse Prevention and Treatment (SAPT) and Community Mental Health Services (CMHS) Block Grants awarded by the federal government were distributed to Regional Behavioral Health Authorities (RBHAs) in Arizona based primarily on population counts. Starting in 2012-2013 the SAPT and CMHS Block Grants require the State to establish an allocation formula for distribution of funds in the areas of prevention and treatment which considers the needs and resources of communities in addition to population. In order to gather a meaningful set of variables that represent the needs and resources in Arizona, LeCroy & Milligan Associates attended several stakeholder meetings and conference calls.

Over four months from October 2012 through January 2013 LeCroy & Milligan Associates solicited feedback from RBHA leaders, Tribal health leaders, Prevention leaders, and other primary stakeholders regarding the development of a new substance abuse/mental health funding formula in Arizona. We adapted the above conceptual framework from *Mental Health Community Based Funding: Ohio's Experience in Revising Its Funding Allocation Methodology* to reflect the behavioral health priorities and legal prerogatives in Arizona. The conceptual criteria we used to determine the merits of each proposed factor for inclusion in the developed funding formulas were as follows:

1. Do these factors meet the system financing principles?
2. Do these factors adequately reflect a community's need for services?
3. Can data be gathered so that ADHS/DBHS staff can compute the factor for each county?
4. Are data associated with the factor verifiable?
5. Does the factor accurately reflect what is currently happening in each county?
6. Does the formula include a total population factor?

The Exhibit 1 outlines the recommendations from each of the stakeholders and discusses the potential use of the variable.

Exhibit 1: Key Stakeholder Variable Recommendations (October 2012 to January 2013)

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
CPSA Prevention Workgroup	Use the proportion of youth using drugs and/or frequency of youth drug use in a community in the allocation formula	2012 Arizona Substance Abuse Prevention And Treatment Services Capacity Report	Potentially, as a secondary formula metric that can be added at the State's discretion	The Youth Drug Severity Index (DSI) is a great source of data that may be useful for inclusion in the SAMHSA Block Grant distribution formula particularly for the area of prevention. The index combines aspects of substance use prevalence, substance abuse frequency, and the level of harm associated with a specific drug. This index has been calculated at the county level. It is a measurement tool administered on a consistent basis in Arizona for administrators in Arizona, and provides a good appraisal of need if used in conjunction with other variables. Youth DSI numbers are recommended as secondary need formula variables because of three reasons: 1) some stakeholders did not want to rely on survey data as a central (heavily weighted) variable; 2) not all counties and/or Tribes conduct the Arizona Youth Survey with both 8th and 10th grade students; and the Youth DSI showed lower correlation with state utilization data than did some other variables of need.

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
CPSA Prevention Workgroup	Use Emergency Room (ER) and Hospital discharge data, and which is broken down by specific drug and alcohol use codes as well as SMI/SED ICD-9 codes	Arizona Department of Health Services	Yes, as a primary data variable for county need	Alcohol and other drugs (AOD) and severe mental illness (SMI/SED) emergency room and hospital data are key components of need within the recommended funding formulas. AOD and SMI/SED emergency room and hospital visits respectively contribute to the need index for the substance abuse treatment and the mental health treatment formulas. ER and hospital discharge data is consistent and relatively reliable data. It provides insight into need within a community but should not be the only measure of need (Tighe & Saxe, 2006).
CPSA Prevention Workgroup	Incorporate a 1-5% "hold-back" amount to the formula which could be disbursed as specific needs arose (coalition building?)	None	No	Although a "hold-back" amount is not a part of the recommended formula this concept of a "hold-back" may be utilized at the discretion of ADHS and as the SAMHSA Block Grant rules stipulate.
CPSA Prevention Workgroup	Create a Community Prevention Readiness Score for each county	Suggested using a variety of data including analyzing where prevention grants are being applied and a survey to demonstrate community "buy-in" to prevention coalitions	No, but some resource info will be provided in the report	A Community Prevention Readiness Score for each county is a great idea that could add versatility and reliability to formula resource measures, in regards to the substance abuse prevention formula. This concept of a Community Prevention Readiness Score could certainly be pursued by the Arizona Division of Behavioral Health Services at a later date. Presently there is no survey that can measure community "buy-in" for prevention activities.

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
				Furthermore, if a survey were produced it is unclear who would/should take the survey which would be representative of a whole community. The number of and benefactors of substance abuse prevention grants is one element of the suggested Community Prevention Readiness Score that is available and will be provided to ADHS administrators. Grants awarded to behavioral health treatment or prevention service providers are not included in the recommended funding formula, but may be added to the calculation in the future. However, this would lead to communities that have received substance abuse prevention grants receiving a reduced portion of SAMHSA block grant money, which could produce some stakeholder resistance.
Tribal Workgroup	Use data from Tribal Action Plan substance abuse survey aggregated every two years	Tribal Action Plan Guidelines and evaluation reports from each Arizona tribe	No	The Tribal Workgroups that have gathered to discuss the development of a block grant allocation formula for Arizona have demonstrated the diversity of Tribal health service goals and evaluation metrics. Tribal leaders have had varying amounts of involvement in producing a Tribal Action Plan and in many instances have adopted different ways of measuring behavioral health service needs. Some Arizona Tribes and Nations have

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
				been very active in the workgroups and have provided ideas for behavioral health treatment and prevention need, others have not responded to invitations to be involved in the process. Due to the fact that each Tribe uses different evaluation variables (data sources) and that a number of Tribes have not participated in the process we do not feel that data from the Tribal Action Plan substance abuse surveys can be effectively applied to a standardized allocation formula at this time. However, many variables discussed by the group are similarly collected by both Indian Health Services and Arizona State databases. A standardized Tribal Action Plan as suggested by the workgroup would be a potentially useful tool to revisit in the future.
Arizona Behavioral Health Planning Council	Level of need should be determined based on the proportion of flex funds and Native Healing Services (non T19) that have been provided through past Block Grant	Arizona Department of Health Services Division of Behavioral Health Services Enrolled in Episode of Care – Penetration Report	No	It was emphasized repeatedly through discussions with ADHS that treatment utilization and past funding not be included as a variable for future funding. Given that the previous numbers were based solely on population distribution, any overages or underutilization of funding would not necessarily be captured by this information.

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
	funds			
Arizona Behavioral Health Planning Council	Develop a resources score for each community based on the number of charitable organizations and faith-based programs active in an area	Arizona Community Action Association resources guide and community resource guides produced by the State	No.	The use of ADHS behavioral health provider lists to determine resource availability in a community was examined. The addition of charitable organizations and faith-based programs into the equation was also considered. However, the lists were either incomplete or ineffective in presenting an adequate measurement for behavioral health resources in a community.
Arizona Behavioral Health Planning Council	A higher proportion of Block Grant funds should go to rural and tribal areas due to the greater need for Flex Funds and Native Healing Services	None	Yes in the form of rural population	Many other states have emphasized the need for increased funding in rural areas. It is recommended that Arizona also include a factor to adjust for the areas of the state where the population is less dense than in Maricopa or Pima Counties. This is included by using the proportion of people living in rural areas according to the U.S. Census.
RBHA Leaders Meeting	Incorporate ADHS-DBHS financial data into formula	Arizona Department of Health Services Division of Behavioral Health Services Annual Report – Fiscal Year 2012	No	Arizona Department of Health Services Division of Behavioral Health Services Annual Report – Fiscal Year 2012 report provides statewide revenue and expenditures numbers as well as Title 19 versus Non-Title 19 persons served. This information was not incorporated into the recommended funding formula because the information is at the state level rather than the county level. Previous funding is also not necessarily indicative of need, just

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
				of expenditures.
RBHA Leaders Meeting	Incorporate data from the System of Care Reports produced by the RBHAs	Arizona Department of Health Services Children's System of Care Practice Review	No	The Arizona Department of Health Services Children's System of Care Practice Review provides useful information in regard to how well behavioral health providers are managing their clients. Primarily via surveys, qualitative data is manipulated to produce scores for family-centered care, community collaboration, and culturally competent care. These measures were not included in the recommended funding formula because they speak more to behavioral health accessibility and quality of care at the provider level than to community service need as it applies to financial stability.
RBHA Leaders Meeting	Incorporate data from the Arizona Citizen Review Panel Report	Arizona Citizen Review Panel prepared by the Arizona Department of Economic Security	No	The Arizona Citizen Review Panel Program is focused on evaluating and improving Child Protective Services in the state. The Review Panel's 2009 annual report consisted primarily of Child Protective Service case summaries and quarterly member activities, no substantial quantitative data regarding substance abuse or mental health service needs in Arizona.
RBHA Leaders Meeting	Incorporate data from the Foster Care Review Board	Arizona Judicial Branch	No	We could not find the Foster Care Review Board report that included questions about family behavioral health activities. Although

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
	Report, item #10 of the report is behavioral health related			behavioral health attitudes and substance abuse prevalence among foster care families could provide insight into county level behavioral health treatment and prevention needs it does not appropriately exemplify larger swatches of the population.
RBHA Leaders Meeting	Incorporate AZ Families First Program data	Arizona Families F.I.R.S.T. Program Annual Report prepared Arizona Department of Economic Security	No	The Arizona Families F.I.R.S.T. Annual Report dispenses information regarding the number of Arizona families involved in the program. The report also shows the percentage of substance abuse reported (and which AOD was being abused) among registered families at initiation. This information is only provided at the statewide level. Moreover, it also is limited to families where child abuse has been reported (many substance abusers do not abuse children and many that do are not reported to the state).
RBHA Leaders Meeting	Incorporate AZ Department of Correction treatment data	Arizona Department of Corrections – Reports and Statistics	No	The Arizona Department of Corrections provides a monthly report providing the number of inmates participating in drug and alcohol treatment programs. This information is not expansive enough for inclusion in the recommended block grant funding formula. It only provides an estimate of AOD prevalence among those who are incarcerated.
RBHA	Incorporate mental	Arizona Judicial	No	Our research into mental health records at the

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
Leaders Meeting	health court data from counties	Branch and individual county court web sites		county level provided inconsistent information. Many of the counties did not have mental health court data easily accessible. This data was not incorporated into the recommended funding formula primarily due to the difficulty in obtaining and analyzing court reports from each of the counties in the state. Moreover, court data does not seem to be representative of mental health service needs in a county.
RBHA Leaders Meeting	Incorporate Tucson Mental Health Diversion data	Behavioral Health Provider jail liaison from Tucson City Court or CPSA leader	No	According to the Tucson City Court website the city has a mental health diversion program that connects court defendants with mental health problems with behavioral health providers. The defendant must be designated as a person with a Serious Mental Illness (SMI) or a Substance Abuser with an Axis I diagnosis to be eligible for the diversion program. Mental Health Diversion information is maintained by Community Partnerships of Southern Arizona (CPSA), one of the state's RHBAs. We did not include this data because it only involves mental health clients that have had formal charges brought against them, and furthermore because many cities and counties do not have a similar mental health diversion program.
RBHA	Incorporate data	AARIN	No	AARIN data has been collected since 2007. It is

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
Leaders Meeting	from the Arizona Arrestee Reporting Information Network (AARIN)	Preliminary report on Veterans among Maricopa County Arrestees		funded by Maricopa county and arrestee data is primarily from the greater Phoenix area. Although the AARIN data has some interesting information on veteran's arrests that involve substance abuse and mental health problems since the data is limited to the Phoenix area it was not useful for incorporation into the formula, which requires data from each county across the State.
RBHA Leaders Meeting	Incorporate Southwest Interdisciplinary Resource Center data on veterans	Arizona Health Survey Substance Use and Mental Health Problems Among Arizona Veterans	No	The survey numbers for some counties were insufficient to draw meaningful conclusions on prevalence rates for the formula (For example – there were less than 50 veteran respondents from La Paz and Yuma counties). The Arizona Health Survey (AHS) administered by the St. Luke's Health Initiative is a valuable survey that we have recommended continue in future years. The adult AHS (the survey from which the veterans report is extrapolated from) included many of the substance abuse questions that were used to develop the Youth Drug Severity Index (DSI) in Arizona. The Youth DSI is a valuable source of information, providing both prevalence and frequency of drug use in each county, which we have recommended for inclusion into the funding formula as a secondary variable of need.

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
RBHA Leaders Meeting	Incorporate data from the Arizona Child Fatality Report	Arizona Child Fatality Review Program – Nineteenth Annual Report November, 2012	No	This report provides death data for kids aged 0-17 during a calendar year in Arizona. Although the report does associate substance abuse and/or mental health problems to a number of deaths in Arizona the numbers are small and furthermore cannot be tracked to a specific county.
RBHA Leaders Meeting	Incorporate Youth Behavioral Health Risk Survey data	Arizona Youth Risk Behavioral Surveillance System 2011 Report	No	The Youth Risk Behavioral Surveillance System (YRBSS) is a survey produced and managed at the national level by the CDC. There are general questions regarding mental health and substance use. Although the state applies the survey to a large number of students in Arizona not all areas are well represented. In addition better survey information is available via the Arizona Criminal Justice Commission's Arizona Youth Survey (utilized to develop DSI scores for each county). The Arizona Youth Survey asks questions about a greater number of illicit substances than the YRBSS and is already an established survey managed in Arizona.
RBHA Leaders Meeting	Incorporate AZ Council of Behavioral Health Providers data	AZ Council of Behavioral Health Providers website	No	The AZ Council of Behavioral Health Providers website provided a number of policy reports focusing on the impact of the ACA on the number of people that will seek behavioral health services financed by the state. Although some of the provided

Workgroup	Suggestion	Data Source	Usefulness?	Discussion
				projections could be applied to variables of NEED within the block grant funding formula we do not feel formula adjustments are required based on assumptions about health care system changes. Block Grant funds will continue to provide added funding for groups of people in every county that are not covered under Medicaid.

DATA AVAILABILITY

One of the major complexities in distributing state funds to local agencies is the need to have reliable data available for each of the local areas. This becomes a cumbersome issue when data is being collated from a variety of reports; reports that will usually express data variables at different system levels. Ohio, which has 50 local boards, experienced problems implementing their initial formula in 2009 because some of the data extrapolated from the US Census Bureau's American Community Survey was found to be inadequate at a county level (Seiber et al, 2012). Arizona has several counties with small populations (Gila, Graham, Greenlee, La Paz, and Santa Cruz) that are not included in county reports from the US Census or the Substance Abuse and Mental Health Services Administration (SAMHSA). Due to this, the reliance on national data and estimations based on statewide numbers is not recommended for use in the allocation formulas.

Another important issue is the inclusion of substance abuse treatment and mental health information from the many Tribal Nations in Arizona. The cornucopia of data metrics collected by the Tribes provides a significant challenge for incorporating their data into a standardized allocation formula. LeCroy & Milligan Associates participated in several Arizona Tribal Nation health organization workgroup meeting conference calls. From those meetings a number of innovative ideas regarding the use of behavioral health data from Tribal representatives have been reviewed. Final recommendations for variables to include in the allocation model are mindful of the data availability for all participants.

Although the level of complexity in developing and using a SAPT block grant allocation formula will largely be determined by the final funding formula chosen by the Arizona Department of Health Services, the Arizona formula will need to have readily available data for continued use. Many of the primary data sources for the allocation formula provide information at different geographic units of measurement. LeCroy & Milligan Associates looked at the availability of data at the State, RBHA, County, and Zip Code level. Although the issue of data availability will be further discussed in subsequent pages of this report Exhibit 2 below lists the primary data sources reviewed for the task of creating an allocation formula to distribute funds for prevention and treatment of mental health disorders and substance abuse in Arizona communities. The level of availability of the data is indicated as follows: [S] is for State, [R] is for RHBA, and [C] is for County.

Exhibit 2: Key Data Sources for Arizona

Source Title	Source Produced By	Primary Information
Arizona Behavioral Health Epidemiology Profile	The Substance Abuse Epidemiology Work Group and Bach Harrison, LLC working for The Arizona Governor's Office for Children, Youth and Families	- Inpatient Hospital Discharges for Any Mental Health Issues [S] [C] - Emergency Department Visits for Any Mental Health Issues[S] [C] - Inpatient Hospital Discharges for Drug Psychoses [S] [C] - Emergency Department Visits for Drug Psychoses [S] [C] *Additional data regarding Emergency Department and Hospitalization is available from the Arizona Vital Statistics department and includes specific information regarding alcoholic psychoses, schizophrenia, manic depression, other psychoses, neuroses, and drug dependence neuroses
FY 2013 Annual Network Development and Management Plan	State of Arizona Department of Health Services, Division of Behavioral Health Services	- Adult Behavioral Health clients outside 40 mile radius of an outpatient clinic [R] - Behavioral Health Professionals [R] - Providers per Child, SMI, GMH/SA categories [R] - Adult substance abuse providers [R]
2012 Arizona Substance Abuse Prevention And Treatment Services	Substance Abuse Epidemiology Work Group working for the Arizona Governor's Office for	- Population [S] [R] [C] - Youth Drug Severity Index [S] [R] [C] - Adult past 30 days

Source Title	Source Produced By	Primary Information
Capacity Report	Children, Youth and Families	substance use [S] [R] [C] - prevention service agencies [C] - Adult behavioral health providers/ per 1,000 qualified adults [S] [R]
Annual Report on Substance Abuse Treatment Programs	State of Arizona Department of Health Services Division of Behavioral Health Services	- State substance abuse enrollment distribution [R] - Regional percentage of statewide substance abuse population [R]
Arizona Department of Health Services Division of Behavioral Health Services Enrolled in Episode of Care – Penetration Report	State of Arizona Department of Health Services Division of Behavioral Health Services	- Enrolled in episode of care [R] - Eligibility and Penetration [R]
Arizona Vital Statistics 2011	State of Arizona Department of Health Services	- Population by age/race [C] - Birth rates [C]
Arizona Health Survey: St Luke's Health Initiatives 2010	Arizona Health Survey: St Luke's Health Initiatives, 2010	AHS Adult Survey questions on health behaviors (useful for development of the adult drug severity index)
National Survey on Drug Use and Health: 8-Year R-DAS (2002 to 2009)	SAMHSA: SAMHDA	National drug use survey questions (useful for proxy SA prevalence numbers for specific demographics)
U.S. Census Bureau – American Fact Finder	U.S. Census Bureau	- Poverty level [S][C]

[C] = County, [R] = RBHA, [S] = State

According to the SAPT and CMHS Block Grant guidelines the State is to establish an allocation formula which considers the needs and resources (in addition to population) of communities. In order to distribute Block Grant funds at a "community" level LeCroy & Milligan Associates, in close collaboration with leaders within the Arizona Division of Behavioral Health, appraised the options for defining a community in Arizona. The four options that were considered for a formula unit-of-measurement were the sub-county (zip code) level, county level, regional (RHBA), or an urban/rural unit measurement such as CHAAs (Community Health Analysis Area) built from the 2000 U.S. Census. Although LeCroy & Milligan Associates initially wanted to define "community" at the smallest reasonable unit of measurement (i.e. zip code) in hopes of accounting for community level variations in health behaviors and trends, it quickly became apparent that zip code level data was very limited. Furthermore, zip code level may not appropriately represent a community; a meaningful distinction between people groups (i.e. two zip codes within a city may not be much different and residents of both zip codes may use the same behavioral health providers). Most behavioral health data for Arizona is available at either the county or regional (RHBA) level. LeCroy & Milligan Associates decided to make the county the main unit-of-measurement for three reasons: 1) Counties were large enough to ensure limited overlap of formula need metrics but small enough to capture most health trends between communities; 2) the consistency of data published at the county level; and 3) the accessibility, and therefore ease of use, of data at the county level.

DATA VARIABLES: AVAILABILTY AND RELIABILITY

Data availability and reliability (as in consistency and completeness) were major determinants for whether potential formula variables were included or excluded from our proposed substance abuse/mental health funding formulas. LeCroy & Milligan Associates examined the data sources discussed by and provided from key staff within the Arizona Division of Behavioral Health (Kelly Charbonneau, Lisa Shumaker, and Michael Sheldon). Additional mental health and substance abuse data from the national level was reviewed. Along with the plethora of variable suggestions from workgroup stakeholders, these variables were all reviewed for potential inclusion in the formulas. Many variables were excluded because the data associated with the variable was either unavailable; required too much data manipulation to be easily reproducible; was not produced on a consistent enough basis; or the data lacked reliability at the county level.

The following criteria were used to select variable for inclusion in the formula:

1. Do these factors meet the system financing principles?
2. Do these factors adequately reflect a community's need for services?
3. Can data be gathered so that ADHS/BHS staff can compute the factor for each county?
4. Are data associated with the factor verifiable?
5. Does the factor accurately reflect what is currently happening in each county?
6. Does the formula include a total population factor?

Both qualitative and quantitative variables were reviewed. Survey information and social indicators were evaluated to inform the variables of "need" within the formula and utilization numbers guided the weighting attached to the variables. Exhibit 3 below lists the primary variables LeCroy & Milligan Associates reviewed, including a discussion about the sources(s) for the data, reliability of the data, and some strengths and weaknesses of using the variable in the formula.

Exhibit 3: Primary Variables for Inclusion in the Allocation Formula

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Population	Arizona Vital Statistics	High	Yes	Population is required to be a key component of the block grant funding formula. The county population numbers released each year by the Arizona Department of Health Services is reliable and easily obtained from the Arizona Vital Statistics website. Originally the impact of population data by race and selected age groups was examined for variations in correlative power with substance abuse and mental health treatment utilization numbers. Population sub-groups that have a strong correlation with treatment utilization numbers was males between the ages of 15-24 and Native American populations. However, the subgroup and total populations are highly correlated both with each other and with the other variables examined for use in the model. Therefore the total population was chosen as the best option for the funding formula. Total population is available for each county as well as each Tribe and Nation.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Newborn Alcohol and Drug related hospital discharges	Arizona Department of Health Services	Moderate High	No, but may be used as a potential formula add-on	Attempts were made to include variables that could represent community need for services based on the 2011 SAMHSA priority areas. Pregnant women needing behavioral health services are one of the stated priority areas/groups. Unfortunately, there is not a reliable data source for pregnant women. Although births per year in each county are easily obtained information, the prevalence of drug use and mental health issues among pregnant women was sparse. Estimates regarding the level of substance use among pregnant women appear to be similar to general population of women based on information from SAMHSA NSDUH reports. As a proxy measure, the number of hospital discharges related to noxious influences affecting the fetus was reviewed. Arizona hospital discharge data provides the number of babies discharged with codes for substance abuse related complications/problems. Although this data is only a proxy for the priority group "pregnant women" and only constitutes a very small proportion of the population we feel it is the best information to use if administrators within the Arizona Department of Health Services want to add small weighting to the funding formula based on this priority group. Hospital discharge data is consistently made available by the Arizona Department of Health Services.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Alcohol and Drug related Emergency Department & Hospital Discharges	Arizona Department of Health Services	High	Yes	The Arizona Department of Health Services provides information about emergency department (ED) and hospital discharge (HD) provider records. The alcohol and drug related ICD 9 codes are collated and reported by the Arizona Department of Health Services Vital Statistics Division annually and can be easily obtained from the raw data files as well. Furthermore this data can be analyzed by county to produce utilization numbers per county. Emergency department and hospital discharge data is easily accessible as all hospitals are required to submit billing data, and similar information is available from Indian Health Services. The one aspect that deteriorates the data's reliability is that providers may not always code client interactions correctly. However, this should be random across all hospitals and not a threat to the data's usefulness. Substance abuse related emergency department and hospital discharge data are a good indication of unmet need within a community as both acute and chronic substance abuse issues are represented. They are not a complete representation of a county's need for substance abuse prevention and treatment services but when combined with other "need" variables the data can be very compelling.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
SMI and SED Emergency Department and Hospital Discharges	Arizona Department of Health Services	High	Yes	The strengths and weaknesses for using ICD 9 codes from emergency department and hospital discharge data by county is summarized above. It is important to note here that all ICD 9 codes associated with "severe" mental disorders are included in the data used for the formula. These codes would effectively represent services to adults categorized with severe mental illness (SMI) and children with serious emotional disturbances (SED). Only alcohol and drug psychoses and alcohol and drug related neurotic disorders are removed from this variable. The SMI/SED emergency department and hospital discharges represent a portion of the unmet need within a county for mental health services.
Alcohol and Drug related deaths	Arizona Department of Health Services	High	Yes	Alcohol and drug related deaths per county are recommended for inclusion in the funding formula as another indicator of unmet need. The Arizona Vital Statistics Division calculates how many deaths per county were due to alcohol or other drugs. Death certificates use ICD-10 codes, and is considered to be relatively reliable based on guidelines set forth for completing the cause of death section. Alcohol and drug related death data is a strong indicator for unmet substance abuse prevention and treatment needs.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Suicide Mortality	Arizona Department of Health Services	High	Yes	The number of suicides per county is made available via the Arizona Vital Statistics website annually. Mortality rates calculated per 100,000 population were reviewed, as was the proportion of suicide (intentional self-harm) deaths to total deaths. This data is highly reliable and consistently available. Although this data alone would be a poor indicator of mental health service needs in a community, combined with general population data and other county level utilization data (i.e. SMI-SED emergency department and hospital discharges) it can be used as an indication of unmet mental health need within a community.
Substance Abuse & SMI/SED enrollment	Arizona Department of Health Services Division of Behavioral Health Services Enrolled in Episode of Care – Penetration Report	High	No, but provided the enrollment numbers used to determine variable correlation significance - weighting for variables in the formula	Every year the Arizona Department of Health Services Division of Behavioral Health assembles an Episode of Care – Penetration Report. We rated this report has highly reliable because it is produced on a consistent basis and is straight-forward quantitative data on the number of people enrolled and the number of people who have used behavioral health services through the state's health system. However, due to discussions with staff at the Division of Behavioral Health, service enrollment numbers were not considered to be a valid variable for inclusion within the allocation formulas and enrollment numbers do not necessarily indicate the level of need within a community, only the ability to receive services. Enrollment numbers were used to help identify potential variables for inclusion in the formulas.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Veterans	National Center for Veterans Analysis and Statistics, or Health Resources and Services Administration (HRSA) Area Resource File (ARF)	Moderate High	No, but is a potential formula add-on	The Department of Veterans Affairs (VA) keeps reliable information on where U.S. veterans live, disclosing veteran populations at the county level. The Health Resources and Services Administration (HRSA) Area Resource File (ARF) also provides current numbers of veterans at the local community level. This variable is included in our list of potential variables for inclusion into the funding formula because "military personnel and their families" is another current SAMHSA priority group. Although the data for this variable is reliable the veteran population is not a great number for representing veteran's need for behavioral health services in a designated area. We originally used a SAMHSA NSDUH report to estimate substance use disorder prevalence among veterans (see below) but have recommended veteran population per county alone, without the estimate based on the national report, as the proxy for this SAMHSA priority group because of our findings that population alone is a strong predictor of behavioral health need.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Veterans with SUD	National Center for Veterans Analysis and Statistics SAMHSA NSDUH 2007 Report	Medium/ Low	No	In an attempt to get the best data representative of the need for substance abuse prevention and treatment services among veterans we looked for state and national statistics about the prevalence of substance use disorders among veterans. The most appropriate information we could find came from SAMHSA NSDUH reports that provided estimated veteran substance use disorder prevalence based on national surveys of veterans from five years ago. We reviewed the use of this percentage to create a veteran's with substance use disorder number for each Arizona county we decided it was not a sufficient number due to the fact that the data was from five years ago, and is an overall estimate for use and the same percentage would be applied to all counties. This makes the variable no more useful than the raw number of veterans within a county, and furthermore the SAMHSA NSDUH report demonstrated that substance use disorders among veterans varied widely due to veteran age and income. We felt this substance use disorder prevalence number from a national survey could not adequately be applied to individual counties in Arizona.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Intravenous (IV) drug users	SAMHSA NSDUH 2007 Report	Medium/ Low	No	There is not any viable Arizona data on the prevalence of IV drug users. The SAMHSA NSDUH has however collected national level data on the prevalence of IV drug use. Though there may be more updated information on the subject from SAMHSA the most recent report we could locate on the matter was from 2007, utilizing 2002-2005 survey data. According to the report 0.18 of the population used drugs intravenously. Applying this percentage to each county's population we developed an estimated IV drug use number for each county. There are obvious weaknesses to the numbers produced applying the general/national percentage number to individual Arizona counties. The first weakness is that the report is not specific to Arizona and the data is over six years old. Secondly using the national prevalence of IV drug use at a local level is precarious, because it came from a self-reported survey and does not take into account variation among smaller populations. Despite the limitations of the data we recommended this variable as a potential formula add-on (to be given a weighting of less than 10%) because it does address a stated SAMHSA priority area.

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Rural Differential	United States Census Bureau	High	Yes	There are a number of variable options for representing behavioral health needs in a community. Calculating community resources in a quantitative way is more difficult. Several options exist for determining the "rurality" of each county in Arizona. One was to use behavioral health provider (BHP) lists from the Arizona Department of Health Services Division of Behavioral Health to calculate the number of providers per county population. Another option was to use the population density numbers based on data published by the U.S. Census Bureau and the square mileage of each county. The U.S. Census Bureau also provides the percent of people living in rural designated communities by county. We chose the latter primarily because it was easier to use, is readily available, and does not require someone at the state level to manipulate provider lists or recalculate population density each year. The proportion of a population that is rural is not a perfect representation of a county's resources, it can be used as a proxy for the resource deficiencies common in rural areas. There are usually fewer behavioral health providers in rural areas, less community "buy-in" for prevention services, and behavioral health clients in rural areas typically have to travel further to get to their provider (Arcury et al, 2005; McCabe et al, 2002)

Variable	Data Source(s)	Reliability	Recommended?	Discussion
Poverty level (100% and 200% FPL)	United States Census Bureau	High	No	According to research on the social indicators of substance use and mental health illnesses, low and high socioeconomic status has been shown to be a predictor of higher substance use and mental health issues (Fryers et al, 2003)(Illinois Department of Human Services, 2005)(Muntaner et al, 2004). However, 200% of the Federal Poverty Level is unavailable for the small population counties due to privacy restrictions for calculations from the United States Census Bureau. Using 100% of the Federal Poverty Level captures the same population as would be covered by AHCCCS and is not recommended for inclusion in the model.
Youth Drug Severity Index	2012 Arizona Substance Abuse Prevention and Treatment Services Capacity Report	Medium	No, but is a potential formula add-on	Stakeholders concerns about the use of behavioral health surveys with the potential biases inherent in them (voluntary response bias, survey sampling bias, etc.) along with non-significant correlations led to its exclusion as a recommended variable. Although the Youth Drug Severity Index was not included in the primary funding formula it is recommended that the survey information continue to be gathered for focused treatment and prevention efforts. An equivalent Adult Drug Severity Index could also be built in the future (see Appendix A). The drug severity index scores afford a measurement of both substance abuse prevalence and frequency of use which in theory should more effectively illuminate need for services in a community than do service utilization numbers alone.

ALLOCATION FORMULA RECOMMENDATIONS

LeCroy & Milligan Associates reviewed all variables recommended from the Arizona Department of Health, Division of Behavioral Health Services, other Arizona state government departments, other states, key stakeholder groups, and relevant publications. Based on this review, the following variables are recommended for inclusion in the Substance Abuse Prevention and Treatment Funding formula:

- Population – Total population is easiest, but it can be broken down by sub-populations;
- Unmet Alcohol and Drug Treatment Needs as defined by:
  - Alcohol and Drug Related Emergency Department Visits ;
  - Alcohol and Drug Related Hospital Visits;
  - Alcohol and Drug Related Deaths; and
- A Rural Differential.

For the Community Mental Health Services Funding formula, the following variables are recommended:

- Population – Total population is easiest, but it can be broken down by sub-populations;
- Unmet Treatment Need as defined by:
  - Serious Mental Illness and Serious Emotional Disturbance Emergency Department Visits;
  - Serious Mental Illness and Serious Emotional Disturbance Hospital Visits;
  - Intentional Self Harm Deaths (suicides); and
- A Rural Differential.

Each of these variables was found to be readily available from state databases at the County level without the need for transformation. Similar information is available from Indian Health Services databases and internal Tribal and Nation databases. Based on the review of other formulas adopted in other Arizona State Government Departments and in other states, it is recommended that the population variable account for the largest proportion of the formula allocation with the additional variables contributing smaller amounts to the formulas. Other variables that are not included in the recommended formulas, but are available at the County level are: the Youth Drug Severity Index, Veteran population counts, Subgroup population counts, and current treatment options available.

LeCroy & Milligan Associates evaluated several different formula options. Examples of the formulas have been created in a separate Excel Spreadsheet with the recommended variables along with some additional variables that may be used based on the preferences of the Arizona Department of Health. Below is an example of one formula for Substance Abuse Prevention and Treatment that provides a good balance between past funding and current needs:

Allocation Percentage = 80%(population) + 10%(unmet need) + 10%(rurality)

The columns are defined as follows:

- ***County:*** Name of the county.
- ***Population:*** The percent of the total Arizona population that county contains.
- ***Unmet Need:*** The percent of the total Arizona unmet treatment need that county contains as defined by emergency room visits, hospital visits, and deaths.
- ***Rurality:*** The percent of the total Arizona rural population (people who live in rural designated areas rather than urban designated area) that county contains.
- ***Allocation %:*** The percent of funds allocated to that county based on the total distribution available.
- ***Difference from Population only:*** This is the difference between the new allocation percentage and the total population percentage for that county.

The table below shows the data, along with the calculations for this formula.

County	Population	Unmet Need	Rurality	Allocation %	Difference from Population only
Apache	1.12%	1.48%	7.09%	1.75%	0.63%
Cochise	2.03%	1.98%	5.68%	2.39%	0.36%
Coconino	2.08%	5.69%	6.23%	2.86%	0.78%
Gila	0.83%	1.09%	3.11%	1.09%	0.25%
Graham	0.59%	1.07%	2.71%	0.85%	0.26%
Greenlee	0.13%	0.06%	0.54%	0.16%	0.03%
La Paz	0.32%	0.24%	1.51%	0.43%	0.11%
Maricopa	59.70%	50.30%	14.43%	54.23%	**-5.47%**
Mohave	3.11%	3.43%	6.41%	3.47%	0.36%
Navajo	1.67%	2.86%	8.15%	2.43%	0.77%
Pima	15.32%	21.11%	10.72%	15.44%	0.12%
Pinal	5.97%	4.56%	17.56%	6.99%	1.02%
Santa Cruz	0.75%	0.39%	1.99%	0.84%	0.09%
Yavapai	3.28%	3.86%	10.20%	4.03%	0.75%
Yuma	3.11%	1.72%	3.40%	3.00%	**-0.11%**

Further examples for Substance Abuse Prevention and Treatment funding along with Community Mental Health Services funding are included in the attached Excel spreadsheet. These are additional options for allocating funds using the same variables. It is now in the hands of the Arizona Department of Health Services, Division of Behavioral Health Services to determine the most viable formula to use to adjust the allocation for each county. All variables are available in the Excel sheet along with the formulas used to create the examples. These can be used as a template for further adjustment and the creation of new options based on the variables available.

LeCroy & Milligan Associates has some additional comments and recommendations for the State of Arizona regarding the creation of the final allocation formula and future formulas:

- The data collected for use in the formulas was the most current data that was available to LeCroy & Milligan Associates. One option to smooth out the values when unusual events occur (especially in small population counties), is to use three year averages rather than single year data. All of the variables used in the model are based on the percentage that county accounts for out of the total Arizona count, so the bias inherent in unusual events is lessened. But if different formulas are chosen, the bias from unusual events can greatly impact the final allocation for a small population county.

- Unmet substance abuse treatment need is calculate in two steps: 1) the total number of emergency room visits, hospitalizations, and deaths related to substance use/abuse within a county is calculated; and 2) this total is divided by the statewide total to create the percentage of unmet treatment need within the county. A similar formula is followed for unmet SMI/SED treatment need substituting in SMI/SED related emergency room visits and hospitalizations along with intentional self-harm mortality counts (suicides). Other variables can be included to define unmet need, but the data should be available at both the county level as well as at the tribal level and be consistently available.

- As additional county-level variables become available in the future, it is recommended that the formula be reviewed and revised to determine if additional variables should be included in the model.

- The formulas contained within the Excel sheets were constructed using county level data as requested. In order to calculate the allocation formula suggestions for the Tribal RBHAs, use the Excel sheets provided and calculate the appropriate proportions by; (1) entering in the population residing in the service area, (2) enter the emergency room and hospital visit data from Indian Health Services, and (3) enter the mortality data on substance abuse related deaths and suicides. The service area population can then be subtracted out of the county level population data and the proportions adjusted to match the smaller county population. Adding together the Tribal RBHA service area population and the reduced county population equals the original county population. Please note that the emergency room and hospitalization data from Indian Health Services is separate data and would not be subtracted from the county totals. At this point in time further clarification is needed in terms of whether or not to use Death certificate data in the county totals.

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