CHAPTER 8: Conclusions

As the first effort to explore substance abuse and mental health issues and access to treatment services within Appalachia, and between Appalachia and the rest of the United States, this report augments the scant body of literature in these areas. In doing so, we hope to inform the direction of substance abuse and mental health research and policy in Appalachia, and provide information to better allocate and target resources to eliminate substance use and mental health disparities within the region. Analyses included in this report explore patterns across Appalachian sub-regions, across levels of economic development within the region, within Appalachian coal-mining areas, and between Appalachia and the rest of the United States.

Overall Conclusions

This study provides an in-depth synthesis of the available data on substance abuse and mental health disorders, and access to treatment services, in Appalachia. There are several findings worthy of emphasis given their consistency across the Appalachian region, and across data sets. The consistency of these findings suggests possible areas of focus for targeting region-wide resources to eliminate Appalachian mental health and substance use disparities. Findings demonstrate that:

Mental health is a key area of concern in Appalachia. Independent from substance abuse, mental health diagnoses for serious psychological distress and major depressive disorder are proportionately higher in Appalachia than in the rest of the nation. This is an important finding in that it suggests that Appalachian disparities in mental health status do not appear to arise as a result of higher levels of co-occurrence with substance abuse. Consistent with this finding, hospital discharge data show that Appalachian residents have a lower proportion of diagnoses for substance abuse only, and for co-occurring substance abuse and mental health problems, as compared to the rest of the nation.

It is important to note, however, that findings from the case studies and from discussions with members of the Coalition on Appalachian Substance Abuse Policy (CASAP) suggest that medical care system factors related to reimbursement could encourage under-reporting of comorbidity rates within the region. While this study has not identified any evidence that suggests that under-reporting happens more often in Appalachia than in other regions, future work should explore this issue. Specifically, studies should investigate whether any systematic bias exists in the way mental health and substance abuse coverage and payment is managed within the Appalachian Region.

While alcohol is the predominant substance of abuse both nationally and within Appalachia, use patterns differ. Proportionately fewer Appalachian adults used alcohol in the past year, as compared to adults nationally. Among those who did use alcohol, proportionately fewer Appalachian adults reported binge alcohol use and heavy alcohol use in the past year as compared to adults nationally. Among adolescents, however, heavy alcohol use was a greater problem within Appalachia than outside of Appalachia. For Appalachian coal mining areas, the proportion of people entering treatment for alcohol abuse is lower than in other areas of Appalachia.

Methamphetamine is not as large of a problem within Appalachia as is widely believed. Findings do not support that methamphetamine use is higher in Appalachia than elsewhere in the nation.

Rather, methamphetamine use and admission rates are demonstrably lower across Appalachia. While regional trends show that methamphetamine use is rising, the rate of increase is similar to that of the rest of the nation. While there are likely to be "pockets of abuse" within the region, rates are lower within the region as a whole.

The growing proportion of admissions for primary abuse of other opiates and synthetics is a key issue in Appalachia. Admission rates for the primary abuse of other opiates and synthetics[26] are higher in Appalachia than in the rest of the nation. Further, while rates are rising both across the nation and in Appalachia, the rate of increase in Appalachia is greater. This is particularly the case in Appalachian coal mining areas.

In many ways, access to treatment is better in Appalachia when compared to the rest of the nation. In terms of accepted forms of payment, and availability of substance abuse family counseling and mental health assessment upon admission, we see that access to treatment is better in Appalachia when compared to the rest of the U.S. Overall, proportionately more adults in the Appalachian region with mental health problems received outpatient mental health treatment counseling services and prescription medical services in the past year, as compared to adults outside the Appalachian region. There is no significant difference between Appalachian adolescents and adults and adolescents and adults outside of the region in terms of the proportion of persons who need but do not receive treatment for an illicit drug problem.

Outpatient rehabilitation is the most common setting for substance abuse treatment in Appalachia. Access to inpatient treatment, and short and long-term non-hospital residential treatment for substance abuse or mental health illnesses, is less common within the Appalachian region. Findings from the national household survey indicate that outpatient rehabilitation is the most common setting for substance abuse treatment in Appalachia. Of the people over age 18 who received substance abuse treatment at a specialty facility in the past year, proportionately fewer people in Appalachia received treatment at an inpatient rehabilitation facility than people outside of Appalachia. At the same time, utilization rates of hospital inpatient services, the private doctor's office, and emergency room services are all higher in the Appalachian region than outside of the Appalachian region. One interpretation of this finding is that people who have severe substance abuse problems have not received appropriate outpatient treatment or regular inpatient services, and as a result, use more expensive emergency room services. The case study counties also reported having access to outpatient treatment, but difficulties in getting access to inpatient and long-term residential treatment facilities. In fact, no case study county had inpatient facilities for either substance abuse or mental health and most reported difficulty placing those needing long term outpatient treatment. Results from the survey of substance abuse treatment facilities indicate that significantly fewer Appalachian facilities offer short term and long-term non-hospital residential substance abuse treatment when compared to facilities outside the Appalachian region.

Barriers to treatment for substance abuse and mental illnesses exist within the Appalachian region, including transportation issues, cultural factors, and stigma. The case studies revealed a number of specific barriers to accessing treatment for substance abuse and mental health illnesses, including: stigma; transportation availability; limited payment options; privacy issues; choice of facilities; and cultural and family barriers.

[26] These drugs include codeine, hydrocodone, hydromorphone, meperidine, morphine, opium, oxycodone, pentazocine, propoxyphene, tramadol, and any other drug with morphine-like effects except methadone.

Better data are needed at the local level to inform policy and allocate resources to more effectively address substance abuse and mental health problems in the Appalachian region. Findings from the case studies showed that community-level substance abuse treatment and mental health leaders do not have uniformly available county and state data from which to draw conclusions about the magnitude of substance abuse and mental health issues within their communities. Additionally, they do not generally use nationally-available data sets to make decisions about local response to substance abuse and mental health issues. While they may use state data, especially when it supports applications for grant funding for prevention programs, more often than not, anecdotal evidence is most often used as the basis for informing local decision making. These findings do not suggest a disregard for the data, but rather the lack of utility in how data are presented and a disconnect between the levels of analysis (generally state or regional) and the level of service delivery (local). Improved data collection at the national, state and local levels, including larger sample sizes, may lead to more informed community-level decision making with respect to resource allocation and program development.

Taken together, these findings suggest that disparities do exist in the Appalachian region for specific substance use and mental health disorders. While some of these disparities exist across the Appalachian region, even more can be learned by looking at a more granular level. Specifically, findings demonstrate particular disparities related to Appalachian sub-region, county economic distress level, and within coal-mining areas. A sampling of these findings is highlighted below:

Findings Across Appalachian Sub-Regions (Northern; Central; Southern)

- The central Appalachian region had the highest proportion of admissions with other opiates or synthetics as the primary reason for admission.
- The highest prevalence of mood disorders occurs in the northern Appalachian sub-region.
- The central sub-region of Appalachia has the greatest density of admissions for psychiatric problems – both substance-related and non-substance-related.
- Non-medical use of prescription drugs among adolescents is higher in the central and southern sub-regions of Appalachia, as compared to the northern sub-region.

Findings Across Economic Status Levels (Attainment; Competitive; Transitional; At-Risk; Distressed)

- There is a positive relationship between the economic development levels and private insurance for both adults and adolescents; distressed and at-risk counties have the lowest rates of private insurance, and competitive and attainment counties have the highest rates of private insurance.
- Medicare and Medicaid/CHIP payments are highest in at-risk and distressed counties and lowest in competitive and attainment counties.
- Competitive and attainment counties have the lowest rates of non-medical use of prescription drugs among adolescents, followed by transitional counties and distressed and at-risk counties.

Patients in the Appalachian region are more likely to be admitted through the emergency department than patients outside of the Appalachian region. This disparity appears to be concentrated in at-risk and transitional counties, as compared to other counties.

Findings for the Appalachian Coal Mining Region

Proportionately more females than males were admitted to treatment in coal mining areas than in other areas of Appalachia.

People less than 24 years of age accounted for more admissions in coal mining areas than in other areas.

The percentage of admissions with heroin use and other opiates or synthetics use as the primary, secondary or tertiary reason for treatment is significantly higher in coal mining areas than in other parts of the Appalachian region.

Other illicit drug use and non-medical use of prescription drugs are also cited more as the primary, secondary or tertiary reasons for treatment in coal mining areas than in other areas.

Implications for Policy Interventions

Among the notable findings from this study were differences in patterns of substance use and mental health status among adolescents as compared to adults. This suggests that targeted interventions are needed for the prevention and treatment of both substance abuse and mental health concerns.

Adolescents

While Appalachian adolescents demonstrate similar substance use patterns for cocaine, marijuana, and methamphetamine, rates of non-medical use of psychotherapeutics, cigarettes, and heavy alcohol use are higher as compared to adolescents across the United States. Non-medical use of psychotherapeutics is a problem for adolescents nationwide, with rates exceeding those of adults. Rates for Appalachian adolescents are even higher. Similarly, for adolescents, rates of heavy alcohol use were higher in Appalachia than outside of Appalachia.

The picture of substance use and mental health concerns among Appalachian adolescents becomes even clearer when analyses are conducted by county economic status level, suggesting that economic status plays a key role in mental health and substance abuse issues. Findings demonstrate that adolescents in distressed and at-risk Appalachian counties – compared to adolescents in other Appalachian counties – have the highest rate of non-medical use of psychotherapeutics. Cigarette and alcohol use are also key concerns for adolescents in Appalachia. Proportionately more adolescents reported heavy alcohol use inside Appalachia than outside of Appalachia. Similarly, proportionately more adolescents used cigarettes in Appalachia than outside of Appalachia; usage was higher for lifetime use, past year use, and past-month use.

On the positive side, proportionately more treatment facilities in Appalachia offer substance abuse family counseling than in facilities outside of Appalachia. This suggests a regional understanding of the need for treatment services for adolescents and their families. While adolescents in at-risk and

distressed counties have the lowest rate of private health insurance, we see that across Appalachia, more adolescents have Medicaid/ CHIP coverage than adolescents in other areas of the country.

Several federally-commissioned nationwide efforts are underway to explore substance use and mental health challenges facing adolescents, and to raise awareness about mental health, and alcohol and drug abuse.[27] Such efforts are needed, and should be expanded/targeted toward at-risk and distressed areas in Appalachia. Both quantitative and qualitative findings from this study suggest that preventive measures are needed to address substance abuse and mental health issues among Appalachian adolescents. While treatment is important, there is a clear need for an "upstream" approach focused on prevention. Given that our case study findings suggest that problems often arise due to issues such as boredom and lack of hope, community interventions may appropriately focus on school/after-school settings.

This is not to say that medical treatment is unimportant, however. Given the magnitude of many of the problems seen among Appalachian adolescents, treatment is clearly needed. While many Appalachian facilities do treat adolescents, there still remain cost/insurance barriers that need to be addressed. It is essential that policymakers and community leaders consider both treatment and prevention measures as they craft interventions to reduce the burden of substance use and mental health concerns among Appalachian adolescents.

Many Appalachian communities are clearly doing their part in working to prevent drug use and promote mental health. Case study communities report active school-based prevention activities, after-school youth activities, anti-drug coalition activities, mentoring programs, wellness classes, health camps, mentoring programs, sports, and recreational activities. Community representatives from the case study counties have described the utility of and growing demand for programs such as Beginning Alcohol and Addictions Basic Education Studies (BABES), *Too Good For Drugs*™ *(K–8)*, D.A.R.E. (Drug Abuse Resistance Education), LifeSkills4Kids, and others. Future work should explore the effectiveness of community-based prevention programs in Appalachia.

Adults

Whereas substance abuse issues are of primary concern among Appalachian adolescents, overall substance abuse rates among Appalachian adults are proportionately lower as compared to adults nationally. This is true across substances, including alcohol, non-medical use of psychotherapeutics, marijuana, methamphetamine, and cocaine. While substance use rates are lower, however, we see proportionately higher rates of serious psychological distress and major depressive episodes as compared to adults nationally, suggesting that mental health concerns may be of primary interest when targeting efforts towards Appalachian adults. Importantly, these mental health concerns occur independent from substance use, rather than as a result of co-occurring disorders.

A look at hospital discharge data shows specific mental health conditions that appear more prevalent within the Appalachian region, with significantly more Appalachian adults having diagnoses of: anxiety disorders; delirium, dementia, and amnesic and other cognitive disorders; developmental disorders (includes communication disorders, developmental disabilities, intellectual

[27] http://www.helpingamericasyouth.gov/conf-tsu.cfm

disabilities, learning disorders, and motor skill disorders); impulse control disorders; and personality disorders.

In looking at treatment, an important finding is that Appalachian adults are more likely to access treatment through the emergency room, especially in distressed and at-risk counties. This suggests that Appalachian adults are more likely to seek treatment later, and may be less likely to recognize the magnitude of their mental health and substance use issues. This is consistent with findings that Appalachian residents are more likely to report stigma, not feeling the need for treatment, and fear of commitment, as reasons for not seeking treatment. Similar findings are also reflected in the case studies, where community participants reported cultural barriers, stigma, and stoicism as reasons for Appalachian residents not seeking treatment.

Among substances of abuse, alcohol remains the predominant concern among Appalachian adults. While overall use rates, heavy use rates and binge drinking rates are all lower as compared to adults nationally, alcohol is the mostly widely used and abused substance within the region, and the primary reason for Appalachian adults seeking substance abuse treatment. Interestingly, the dynamics of substance use and abuse differ within the coal mining region of Appalachia, with treatment rates for alcohol use being lower than in other parts of the region. The percentage of admissions for heroin use and other opiates or synthetics use as the primary, secondary or tertiary reason for treatment is significantly higher in coal mining areas than in other parts of the Appalachian region, however.

As with adolescents, these findings suggest the need for targeted initiatives to address mental health and substance abuse issues among Appalachian adults. The nature of these issues differs among adolescents and adults, however, with mental health concerns rising as a primary area of concern among adults. Perhaps the most critical finding relative to Appalachian adults is the need to focus on these mental health concerns, independent from substance abuse, and to develop programs to overcome cultural barriers to treatment and issues of stigma that may result in more admissions occurring through emergency room settings.

One caveat to this recommendation is the finding that, within the coal mining region of Appalachia, abuse of heroin and other opiates and synthetics appears to be a primary substance abuse concern. Targeted prevention and treatment efforts are needed to address these concerns.

Key Recommendations to Guide Future Policy and Research Efforts

This study is the first effort to investigate the state of mental health status and substance abuse prevalence at the most granular level possible across Appalachia. While our research has provided a picture of the state of the region, much remains to be learned about mental health status and substance abuse prevalence in Appalachia, and access to treatment services.

We believe there are any number of recommendations that could be offered to guide future policy and research efforts. We offer four key recommendations to stimulate and improve future research efforts, and thereby inform mental health and substance abuse policy and community-level programs:

1. Richer data are needed to enable analyses at the county and community levels to fully understand the extent of substance abuse and mental health problems in Appalachia.

Recognizing that interventions take place at the community level, and that substance use and mental health patterns differ from community to community, local-level data are clearly needed to most appropriately target initiatives and ensure the optimal use of limited resources. While our findings are instructive in guiding the allocation of region-wide resources, and targeting resources based on factors such as Appalachian sub-region and county economic development level, local-level data are needed to inform local interventions. Our case study findings also revealed that better coordinated data collection, documentation and analysis are needed for Appalachian communities to access resources at state and federal levels. This study serves as a call to action to improve primary data collection with representative sampling in and for the Appalachian region. Leadership from the federal, regional, and local levels is needed to ensure that researchers and practitioners have access to more comprehensive data sets to explore these issues across the Appalachian region.

2. Studies are needed to determine the quality of substance abuse and mental health services being delivered in Appalachian treatment facilities.

Studies are needed to determine the quality of services being delivered in Appalachian treatment facilities. The data only tell us that a service, such as inpatient detoxification, is offered; we do not know about the quality of the service delivered, or whether the service has been received by the patient. Thus, our findings cannot speak to the quality of care received in Appalachian treatment facilities versus other facilities nationwide. Such studies would answer questions such as:

How do we measure the quality of services delivered across the region?

Do patients perceive the services they receive to be of a high quality?

Are there differences in the quality of services being delivered for co-occurring and non-co-occurring disorders?

3. Future work should include outcome assessments and other evaluations of the effectiveness of clinical and community-based mental health and substance abuse interventions in Appalachia.

We know little about the effectiveness of clinical treatments and community-based prevention programs and interventions in Appalachia. Outcome assessments and evaluations of the

effectiveness of mental health and substance abuse interventions in Appalachia are needed. Studies are needed to address the following questions:

Are interventions perceived as effective in treating mental health and substance abuse disorders in the region?

Are community-based interventions effective in preventing illness?

Are patients placed on waiting lists for certain services?

What are the clinical outcomes of specific interventions?

4. Creative solutions should be explored to address concerns over the lack of available inpatient care.

Findings indicate that there are regional difficulties in accessing inpatient treatment services. At the same time, the data show that utilization rates of hospital inpatient services, private physicians, and emergency room services are all higher in the Appalachian region than outside of the Appalachian region. One possible interpretation of these finding is that people who have severe substance abuse problems have not received appropriate outpatient treatment and may not have access to inpatient services at drug treatment facilities, and as a result, use more expensive hospital inpatient and emergency room services. The case study findings were consistent with this interpretation, as counties reported difficulties in accessing inpatient facilities for either substance abuse or mental health, and difficulties in placing those needing long term outpatient treatment. One possible cost effective way to create an inpatient treatment infrastructure in the Appalachian region may be to pool resources across counties and develop regional inpatient treatment units.

By providing an in-depth analysis and synthesis of available data on substance abuse and mental health disorders, and access to treatment services in Appalachia, we believe this study can be useful in targeting region-wide resources to eliminate Appalachian mental health and substance abuse disparities. At the same time, however, we recognize that more work needs to be done to promote *community level* analyses. Only then will Appalachian communities have sufficient understanding of the nature of the substance use and mental health issues *within their communities* to address these concerns effectively. A major finding of this study is that data collection efforts should be strengthened to encourage such granular analyses at the county and community levels. When supplemented with studies exploring the quality of services being delivered and the effectiveness of both medical and community-based interventions in Appalachia, communities will be fully empowered to make effective decisions on resource allocation and develop both prevention and treatment initiatives responsive to the unique and complex interplay of socioeconomic, cultural, and health system factors in the Appalachian region.

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