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Promoting Resilience and Recovery: Policy, Clinical, and Recovery Support Strategies to Inhibit the Intergenerational Transmission of Addiction and Related Problems

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In 2005, the City of Philadelphia began transformation of its behavioral health system around the principles of resilience, recovery, and self-determination. The resulting processes and programs have drawn national and international attention in tandem with the emergence of recovery as a new organizing paradigm within the alcohol and drug (AOD) problems and larger behavioral health arenas.¹ Clinical responses to severe, complex, and chronic AOD problems have since begun to shift from models of acute biopsychosocial stabilization to models of sustained recovery management wrapped within larger recovery-oriented systems of care.² This shift entails the integration of person- and family-focused clinical interventions with larger environmental (population-based public health) approaches to enhancing the long-term health of whole communities.³

One of the critical questions emerging within this integration is how to break intergenerational cycles of AOD and related problem transmission at personal, family, and community levels.⁴ This paper: 1) reviews the processes and mechanisms through which alcohol and other drug problems are transmitted within and across generations, 2) identifies protective

¹ Achara-Abrahams, I., Evans, A. C., & King, J. K. (2011). Recovery-focused behavioral health systems transformation: A framework for change and lessons learned from Philadelphia. In J. F. Kelly & W. L. White (Eds.), *Addiction recovery management: Theory, science and practice* (pp. 187-208). New York: Springer Science. El-Guebaly, N. (2012). The meanings of recovery from addiction: Evolution and promises. *Journal of Addiction Medicine*, 6(1), 1-9. Wardle, I. (2012). Five years of recovery: December 2005 to December 2010—From challenge to orthodoxy. *Drugs: Education, Prevention and Policy*, 19(4), 294-298. White, W. L. (2008). Recovery: Old wine, flavor of the month or new organizing paradigm? *Substance Use and Misuse*, 43(12&13), 1987-2000.

² Kelly, J. F., & White, W. L. (Eds., 2011). *Addiction recovery management: Theory, science and practice* (pp. 187-208). New York: Springer Science. White, W. L. (2008). *Recovery management and recovery-oriented systems of care: Scientific rationale and promising practices*. Pittsburgh, PA: Northeast Addiction Technology Transfer Center, Great Lakes Addiction Technology Transfer Center, Philadelphia Department of Behavioral Health & Mental Retardation Services.

³ Evans, A. C., Lamb, R., & White, W. L. (2013). The community as patient: Recovery-focused community mobilization in Philadelphia, 2005-2012. *Alcoholism Treatment Quarterly*, 31(4), 450-465.

⁴ White, W. L., & Chaney, R. A. (2008). Intergenerational patterns of resistance and recovery within families with histories of alcohol and other drug problems: What we need to know. Posted at www.facesandvoicesofrecovery.org

personal, family, and environmental factors that can neutralize or diminish such transmission, and 3) explores potential policies and community-level programming through which the City of Philadelphia can reduce the long-term prevalence of substance use disorders among its population through targeted services to high-risk children and families. The purpose of this paper is to provide a platform for discussion between the Philadelphia Department of Behavioral Health and Intellectual disAbility Services and its community partners toward the goal of formulating a long-term strategy to break intergenerational cycles of addiction and related problems within the City of Philadelphia.

Background

The addiction research literature is replete with references to *family density of alcoholism*, *familial loading for alcoholism*,⁵ *familial aggregation of alcoholism*,⁶ *family aggregation of substance abuse*,⁷ *intergenerational continuity of substance use*,⁸ *intergenerational transmission of substance abuse*,⁹ and the *intergenerational cycle of substance abuse*.¹⁰ In fact, concern about the intergenerational transmission of substance use disorders (SUDs) dates to the earliest days of the American Temperance Movement.¹¹

Most research to date on the intergenerational transmission of substance use disorders (SUDs) has focused on the intergenerational effects of alcohol use disorders. One in four children under age 18 (28.6% of all children in the U.S.) are exposed to alcohol use disorder (AUD) in the family.¹² Children with parents with an AUD have an elevated risk of developing an SUD over the life course compared to children without this risk factor, although the degree of such risk varies across studies.¹³ Risk may extend from dependence on a specific substance to

⁵ Hill, S. Y., & Yuan, H. (1999). Familial density of alcoholism and onset of adolescent drinking. *Journal of Studies on Alcohol*, 60, 7-17.

⁶ Grant, B. F. (2000). Estimates of US children exposed to alcohol abuse and dependence in the family. *American Journal of Public Health*, 90(1), 112-115.

⁷ Miles, D. R., Stallings, M. C., Young, S. E., Hewitt, J. K., Crowley, T. J., & Fulker, D. W. (1998). A family history and direct interview study of familial aggregation of substance abuse: the adolescent substance abuse study. *Drug and Alcohol Dependence*, 49, 105-114.

⁸ Bailey, J. A., Hill, K. G., Oesterle, S., & Hawkins, J. D. (2006). Linking substance use and problem behavior across three generations. *Journal of Abnormal Child Psychology*, 34(3), 273-292. Fawzy, F. I., Coombs, R. H., & Gerber, B. (1983). Generational continuity in the use of substance: The impact of parental substance use on adolescent substance use. *Addictive Behaviors*, 8, 109-114. Knight, K., Menard, S & Simmons, S. (2013). *Intergenerational continuity of substance use. Substance Use & Misuse*, Posted online on August 21, 2013. (doi:10.3109/10826084.2013.824478)

⁹ Markwood, M., Dozier, C., Hooks, K., & Markwood, N. (2000). Culture and the intergenerational transmission of substance abuse, woman abuse, and child abuse: A diathesis-stress perspective. *Children and Youth Services Review*, 22(3-4), 237-250.

¹⁰ Sheridan, M. J. (1995). A proposed intergenerational model of substance abuse, family functioning, and abuse/neglect. *Child Abuse & Neglect*, 19(5), 519-530.

¹¹ White, W. L. (1998). *Slaying the dragon: The history of addiction treatment and recovery in America*. Bloomington, IL: Chestnut Health Systems.

¹² Grant, B. F. (2000). Estimates of US children exposed to alcohol abuse and dependence in the family. *American Journal of Public Health*, 90(1), 112-115.

¹³ Chassin, L., Pitts, S. C., DeLucia, C., & Todd, M. (1999). A longitudinal study of children of alcoholics: Predicting young adult substance use disorders, anxiety, and depression. *Journal of Abnormal Psychology*, 108(1), 106-119. Hoffman, J. P., & Cerbone, F. G. (2002). Parental substance use disorder and the risk of adolescent drug abuse: An event history analysis. *Drug and Alcohol Dependence*, 66, 255-264. Hussong, A. M., & Chassin, L. (1997). Substance use initiation among adolescent children of alcoholics: Testing protective factors. *Journal of Studies on Alcohol*, 58(3), 272-279. Jacob, T., & Windle, M. (2000). Young adult children of alcoholics, depressed, and non-distressed parents. *Journal of Studies on Alcohol*, 61, 836-844. Pandina, R. J., & Johnson, V. (1990). Serious alcohol and drug problems among adolescents with a family history of alcoholism. *Journal of Studies on Alcohol*, 51(3), 278-282. Bailey, J. A., Hill, K. G., Oesterle, S., & Hawkins, J. D. (2006). Linking substance use and problem behavior across three generations. *Journal of Abnormal Child Psychology*, 34(3), 273-292.

increased risk for a broad spectrum of substance use patterns,¹⁴ early onset of alcohol use,¹⁵ increased frequency of binge drinking,¹⁶ and a more rapid progression of problem development.¹⁷

Children of parents with SUDs are more than 5 times more likely to develop an AOD-related problem, including tobacco dependence, than children without parental alcoholism.¹⁸ Children with family histories of drug use disorders other than AUD are as much as 8 times more likely to subsequently develop a drug use disorder than children without such family history.¹⁹ There is a documented “generalization effect” through which children of alcohol dependent parents consume a far greater variety of substances than their addicted parents.²⁰ Early manifestations of this SUD risk factor include disinhibition, impulsivity, and sensation seeking.²¹

The risks faced by children of an SUD-affected parent extend beyond vulnerability to alcohol problems to include increased vulnerability for other drug problems, conduct disorder, delinquency, antisocial personality, anxiety, depression, suicide, eating disorders, school absenteeism, school failure, teen pregnancy, violence, and accidents).²² These effects can extend into adult relationship difficulties, including the increased risk of selecting intimate partners with substance-related problems.²³

¹⁴ Grant, B. F. (2000). Estimates of US children exposed to alcohol abuse and dependence in the family. *American Journal of Public Health, 90*(1), 112-115. Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance use prevention. *Psychological Bulletin, 112*, 64-105. Pandina, R. J., & Johnson, V. (1990). Serious alcohol and drug problems among adolescents with a family history of alcoholism. *Journal of Studies on Alcohol, 51*(3), 278-282.

¹⁵ Hill, S. Y., & Yuan, H. (1999). Familial density of alcoholism and onset of adolescent drinking. *Journal of Studies on Alcohol, 60*, 7-17.

¹⁶ Bröning, S., Kumpfer, K., Kruse, K., Sack, P., Schaunig-Busch, I., Ruths, S., Moesgen, D., Pflug, E. Klein, & Thomasius, R. (2012). Selective prevention programs for children from substance-affected families: a comprehensive systematic review. *Substance Abuse Treatment, Prevention, and Policy 2012, 7*:23 Accessed January 8, 2014 at <http://www.substanceabusepolicy.com/content/7/1/23>

¹⁷ Chassin, L., Curran, P. J., Hussong, A. M., & Colder, C. R. (1996). The relation of parent alcoholism to adolescent substance use: A longitudinal follow-up study. *Journal of Abnormal Psychology, 105*(1), 70-80.

¹⁸ Chassin, L., Rogosch, F., & Barbera, M. (1991). Substance use and symptomatology among adolescent children of alcoholics. *Journal of Abnormal Psychology, 100*(4), 449-463. Ford, E.S., Anda, R.F., Edwards, V.J., Perry, G.S., Zhao, G. Li, C. & Croft, J.B. (2011). Adverse childhood experience and smoking status in five states. *Preventive Medicine, 53*(3), 188-93.

¹⁹ Merikangas, K.R., Stolar, M., Stevens, D.E., Goulet, J., Preisig, M.A., Fenton, B. Zhang, H., O'Malley, S., Rounsaville, B. (1998). Familial transmission of substance use disorders. *JAMA Psychiatry, 55*(11), 973-979.

²⁰ Fawzy, F. I., Coombs, R. H., & Gerber, B. (1983). Generational continuity in the use of substance: The impact of parental substance use on adolescent substance use. *Addictive Behaviors, 8*, 109-114.

²¹ Mylant, M. L., Ide, B., Cuevas, E., & Meehan, M. (2002). Adolescent children of alcoholics: Vulnerable or resilient? *Journal of the American Psychiatric Nurses Association, 8*(2), 57-64.

²² Miles, D. R., Stallings, M. C., Young, S. E., Hewitt, J. K., Crowley, T. J., & Fulker, D. W. (1998). A family history and direct interview study of familial aggregation of substance abuse: the adolescent substance abuse study. *Drug and Alcohol Dependence, 49*, 105-114. Price, A. W., & Emshoff, J. G. (1977). Breaking the cycle of addiction: Prevention and intervention with children of alcoholics. *Alcohol Health and Research World, 21*(3), 241-245. Fuller-Thomson, E., Katz, B., Phan, T., Liddycoat, P.M. & Brennenstuhl, S. (2013). The long arm of parental addictions: The Association with adult children's depression in a population-based study. *Psychiatry Research, 210*(1), 95-101.

²³ Greenfield, S. F., Swartz, M. S., Landerman, L. R., & George, L. K. (1993). Long-term psychosocial effects of childhood exposure to parental problem drinking. *American Journal of Psychiatry, 150*, 608-613.

Only a minority of children of alcoholics (COAs) develop an SUD²⁴—between 33-40%,²⁵ with many leading highly successful lives,²⁶ and there are people without family risk factors who develop SUDs.²⁷ It is not possible to predict a child's future development solely based on parental addiction status,²⁸ but addiction risk is much greater within affected families than in the general population, and this risk may be intensified by increased density of SUD within one's familial history (e.g., grandparents, aunts/uncles, etc.).²⁹ The presence, intensity, and duration of childhood problems in the face of parental AOD-related problems are predicted not by parental SUD status alone but the interaction of multiple risk factors and the availability of key protective factors.³⁰ These multiple risk and protective factors appear to influence a broad spectrum of intergenerational problems, including addiction and other behavioral health challenges, poverty, education failure, unemployment, incarceration, trauma, child neglect, and abuse as well as other forms of trauma and violence.

We will next summarize research on eleven potential mechanisms involved in the intergenerational transmission of AOD-related problems.

Pathways, Mechanisms, and Trajectories of AOD Problem Transmission

SUDs are transmitted intergenerationally through a variety of genetic/biological and environmental (parent/sibling/family, peer, and community) mechanisms that vary across individuals and subgroups.³¹ These pathways and mechanisms exert independent effects but may also operate simultaneously and interact to magnify the total risk profile.

Genetic/Neurobiological Influences. Early studies of twins separated at birth found twins with a biological alcoholic parent were 4 times more likely to develop adult alcoholism as children without this family risk.³² Subsequent studies confirmed such risks and extend such risks to the

²⁴ Slutske, W. S., D'Onofrio, B. M., Turkheimer, E., Emery, R. E., Harden, K. P., Heath, A. C., & Martin, N. G. (2008). Searching for an environmental effect of parental alcoholism on offspring alcohol use disorder: A genetically informed study of children of alcoholics. *Journal of Abnormal Psychology, 117*, 534-551. Windle, M., & Tubman, J. G. (1999). Children of alcoholics. In W. K. Silverman & T. Ollendick (Eds.), *Developmental issues in the clinical treatment of children and adolescents* (pp. 393-414). Allyn & Bacon: Needham Heights, MA.

²⁵ Bröning, S., Kumpfer, K., Kruse, K., Sack, P., Schaunig-Busch, I., Ruths, S., Moesgen, D., Pflug, E. Klein, & Thomasius, R. (2012). Selective prevention programs for children from substance-affected families: a comprehensive systematic review. *Substance Abuse Treatment, Prevention, and Policy* 2012, 7:23 Accessed January 8, 2014 at <http://www.substanceabusepolicy.com/content/7/1/23>

²⁶ Mylant, M. L., Ide, B., Cuevas, E., & Meehan, M. (2002). Adolescent children of alcoholics: Vulnerable or resilient? *Journal of the American Psychiatric Nurses Association, 8*(2), 57-64. Luthar, S. S., Cichetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*, 543-562.

²⁷ Schuckit, M. & Smith, T. (2001). The clinical course of alcohol dependence associated with a low level of response to alcohol. *Addiction, 96*, 903-910.

²⁸ Werner, E. E. (1986). Resilient offspring of alcoholics: A longitudinal study from birth to age 18. *Journal of Studies on Alcohol, 47*(1), 34-40.

²⁹ Harford, T. C., & Grant, B. F. (1990). Alcohol abuse among grandsons of alcoholics: Some preliminary findings. *Alcoholism: Clinical and Experimental Research, 14*(5), 739-740.

³⁰ Barnard, M., & McKeagany, N. (2004). The impact of parental drug use on children: What is the problem and what can be done to help? *Addiction, 99*, 552-559.

³¹ Orford, J., & Velleman, R. (1991). Environmental intergenerational transmission of alcohol problems: A comparison of two hypotheses. *British Journal of Medical Psychology, 64*(2), 189-200. Whiteman, S. D., Jensen, A. C., & Maggs, J. L. (2013). Similarities in adolescent siblings' substance use: Testing competing pathways of influence. *Journal of Studies on Alcohol and Drugs, 74*, 104-113.

³² Goodwin, D. W., Schulsinger, F., Hermansen, L., Guze, S. B., & Winokur, G. (1973). Alcohol problems in adoptees raised apart from alcoholic biological parents. *Archives of General Psychiatry, 28*, 238-243. Schuckit, M. A. (1972). Family history and half-sibling research in alcoholism. *Annals of the New York Academy of Science, 197*, 121-125.

transmission of other SUDs³³ and sparked speculation of a common genetic risk for multiple substance dependencies.³⁴

There is growing consensus that there are multiple genes and chromosomes involved in such transmission as opposed to a single mechanism of gene expression and that the genetic risks for SUDs can be magnified by environmental conditions.³⁵ The focus on genetic research has been on parental SUD, but SUD risk may also be influenced by greater density of SUD within the family and extended family.³⁶

Research examining the precise source of genetic risk for SUD has focused on such factors as:

- impaired neuropsychological functioning (executive functioning of the brain) affecting decision-making and judgment,
- atypical tolerance (less subjective experience of intoxication from low levels of consumption) predicts 4-fold increase in risk for alcohol use disorder,³⁷
- greater neurological reward (stronger euphoric effects) and greater stress-response dampening (e.g., enhanced sense of personal power, tension reduction, and social comfort and fluidity),³⁸ and
- less early negative feedback from AOD experiences.

Genetic risks may be magnified when combined with prenatal and postnatal neurological insult.

Fetal Alcohol Spectrum Disorders (FASDs) span a broad array of functional deficits resulting from prenatal alcohol exposure. Since the 1973 discovery of fetal alcohol syndrome (FAS) by Jones and Smith, research has established a much broader span of severity of effects of such exposure, including more subtle functional impairments that would not meet criteria for FAS. These effects include impairments in brain functioning (e.g., memory, impaired capacity for attention and sustained focusing, choice generation, choice analysis, impaired problem solving, and learning from past experience) among persons with normal intelligence and without the distinctive facial characteristics often associated with FAS.³⁹ In fact, those with milder forms of FASDs may be at greater risk for the development of substance use disorders than those with FAS.⁴⁰

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- ³³ Prescott, C., & Kendler, K. (1999). Genetic and environmental contributions to alcohol abuse and dependence in a population-based sample of male twins. *American Journal of Psychiatry*, 156, 34-40. Tsuang, M. T., Lyons, M. J., Eisen, S. A., Goldberg, J., True, W., Lin, N.,...Eaves, L. (1996). Genetic influences on DSM-II-R drug abuse and dependence: A study of 3,372 twin pairs. *American Journal of Medical Genetics*, 67, 473-477. Vassoler, F. M., & Sadri-Vakali, G. (2013). Mechanisms of transgenerational inheritance of addictive-like behaviors. *Neuroscience*. doi: 10.1016/j.neuroscience.2013.07.064
- ³⁴ Kendler, K. S., Jacobson, K. C., Prescott, C. A., & Neale, M. C. (2003). Specificity of genetic and environmental risk factors for use and abuse/dependence of cannabis, cocaine, hallucinogens, sedatives, stimulants, and opiates in male twins. *American Journal of Psychiatry*, 160, 687-695.
- ³⁵ Douglas-Siegal, J. A., & Ryan, J. P. (2013). The effect of recovery coaches for substance-involved mothers in child welfare: Impact on juvenile delinquency. *Journal of Substance Abuse Treatment*, 45, 381-387.
- ³⁶ Bailey, J. A., Hill, K. G., Oesterle, S., & Hawkins, J. D. (2006). Linking substance use and problem behavior across three generations. *Journal of Abnormal Child Psychology*, 34(3), 273-292.
- ³⁷ Schuckit, M. & Smith, T. (2000). A comparison of correlates of DSM-IV alcohol abuse or dependence among more than 400 sons of alcoholics and controls. *Alcoholism: Clinical and Experimental Research*, 25(1), 1-8.
- ³⁸ Levenson, R. W., Oyama, O. N., & Meel, P. S. (1987). Greater reinforcement from alcohol for those at risk: Parental risk, personality risk, and sex. *Journal of Abnormal Psychology*, 96, 242-253. Newlin, D. B. & Thomson, J. B. (1990). Alcohol challenge with sons of alcoholics: A critical review and analysis. *Psychological Bulletin*, 108, 383-402.
- ³⁹ Grant, T.M., Browh, N.N., Dubovsky, D., Sparrow, J. & Ries, R. (2013). The impact of prenatal alcohol exposure on addiction treatment. *Journal of Addiction Medicine*, 7(2), 87-95.
- ⁴⁰ Streissguth, A., Barr, H., Kogan, J. et al, (1996). *Understanding the occurrence of secondary disabilities in clients with fetal alcohol syndrome (FAS) and fetal alcohol effects (FAE)*. Final report to the Centers for Disease Control and Prevention. Seattle, WA: University of Washington, Fetal Alcohol and Drug Unit, Tech Report No. 96-06.

A recent research review of FASDs by Therese Grant and colleagues⁴¹ reported several findings of import to the issue of intergenerational transmission of AOD-related problems, including:

- increased risk for early onset AOD use and related problems,
- increased risks for adult substance use disorders among persons who have experienced FASDs (e.g., with nearly half of adults with FASDs experiencing a substance use disorder)⁴²,
- increased risks for mood disorders which can in turn heighten risk for excessive AOD consumption and related problems,
- decreased social skills that could heighten risk for involvement in AOD-using social networks, and
- neurocognitive impairments of patients with FASDs undergoing addiction treatment may compromise treatment engagement, completion, and post-treatment recovery outcomes.

In spite of these findings, Grant and colleagues also discovered that addiction treatment programs did not routinely screen for FASDs nor provide specialized approaches to the treatment of patients with learning or behavioral problems resulting from FASDs.

In reviewing local experience in the Philadelphia areas with FASDs, local informants noted other factors through which FASDs could contribute to the intergenerational transmission of substance use disorders. These risk factors include defective parenting, increased risk for neglect and abuse (including multiple placements in the child welfare system), increased risk for physical/sexual trauma resulting from impaired parental supervision, risks of early pregnancy while using alcohol and other drugs, and subsequent recycling of risk factors in next generation.⁴³

Assortative Mating. Genetic and neurobiological risks within families affected by SUDs may be enhanced by the propensity of children exposed to parental SUDs to later be attracted to and marry individuals who share this SUD family history. The children born of such unions may have elevated SUD risks due to the progressive concentration of genetic risk across generations resulting from this selection process.⁴⁴ Assortative mating offers one explanation for the progressive density of AOD-related problems across generations. This same process may also elevate other risk for children raised in this environment, e.g., increasing risk of prenatal AOD exposure.⁴⁵

Co-occurring Conditions and Temperament. SUD risk of children exposed to parental SUD may also flow from a more indirect route. For example, some researchers have speculated that intergenerational SUDs could be spawned by exposure to parental conditions that generate risks for the development of externalizing disorders that can be expressed via excessive AOD use. Others have suggested that genetically influenced psychiatric illnesses in children and adolescents increase the risk for self-medication with alcohol and other drugs and the subsequent development of SUDs. Others have attributed the mechanism of risk transmission

⁴¹ Grant, T.M., Browh, N.N., Dubovsky, D., Sparrow, J. & Ries, R. (2013). The impact of prenatal alcohol exposure on addiction treatment. *Journal of Addiction Medicine*, 7(2), 87-95.

⁴² Streissguth, A., Barr, H., Kogan, J. et al, (1996). *Understanding the occurrence of secondary disabilities in clients with fetal alcohol syndrome (FAS) and fetal alcohol effects (FAE)*. Final report to the Centers for Disease Control and Prevention. Seattle, WA: University of Washington, Fetal Alcohol and Drug Unit, Tech Report No. 96-06.

⁴³ Personal communications with Bev Haberle, PRO-ACT, March 2014.

⁴⁴ Orford, J., & Velleman, R. (1991). Environmental intergenerational transmission of alcohol problems: A comparison of two hypotheses. *British Journal of Medical Psychology*, 64(2), 189-200. Merikangas, K. & Brunetto, W. (1996). Assortative mating and psychiatric disorders. In G. Papasimitrou, & J. Medlewicz (Eds.), *Baillier's clinical psychiatry: International practice and research* (pp. 175-185). London, England: Baliane Tindall.

⁴⁵ Bailey, J. A., Hill, K. G., Oesterle, S., & Hawkins, J. D. (2006). Linking substance use and problem behavior across three generations. *Journal of Abnormal Child Psychology*, 34(3), 273-292.

to be via temperament (rebelliousness, unconventionality, impulsiveness, emotional hyper-reactivity, sensation-seeking, risk-taking, behavioral hyperactivity, low capacity for persistence, slow rate of stress decompression, emotionally disinhibited, and anxiety),⁴⁶ early conduct disorder,⁴⁷ and self-medication of deficits.⁴⁸

Developmental/Historical Trauma. Adverse childhood experiences (addicted or mentally ill parent, parental discord/separation/divorce, or physical/sexual abuse) increase the likelihood of early age of onset of drinking and drinking to cope (versus for pleasure or social conformity) during early onset of alcohol use.⁴⁹ Exposure to parental alcoholism significantly increases the range and intensity of stressors experienced by children of these parents.⁵⁰ Also of note are the elevated rates of physical and sexual abuse among children of parents with SUDs.⁵¹ While there are mixed findings on the association between childhood physical/sexual abuse and the development of adolescent/adult SUDs,⁵² there is a general association between the former and the latter, particularly among women.⁵³ Substance use in such circumstances may serve as a mechanism to regulate negative affect related to PTSD, and the damaged self-esteem emanating from such trauma can lead to deviant peer associations, which in turn leads to increased AOD exposure.⁵⁴

The links between developmental trauma and adult SUD risk may be magnified in the presence of particular traumagenic factors, including early age of onset of trauma, long duration of trauma, a larger cumulative volume of traumatic events, trauma inflicted by family members, multiple perpetrators of trauma, more physically invasive forms of trauma, physical violence or threat of such violence as a dimension of the trauma, and response to disclosure of trauma (disbelief or blame rather than protection).⁵⁵ Adverse childhood experiences increase the risks

⁴⁶ Chassin, L., Pillow, D. R., Curran, P. J., Molina, B. S. G., & Barrera, M. (1993). Relation of parental alcoholism to early adolescent substance use: A test of three mediating mechanisms. *Journal of Abnormal Psychology, 102*(1), 3-19.

⁴⁷ Merikangas, K. R., Dierker, L. C., & Szatmari, P. (1998). Psychopathology among offspring of parents with substance abuse and/or anxiety disorders: A high-risk study. *Journal of Child Psychology and Psychiatry, 39*, 711-720.

⁴⁸ Kumpfer, K. L. & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to "substance abuse disorders". *Substance Use & Misuse, 5*, 671-698.

⁴⁹ Rothman, E. F., Edwards, E. M., Hereen, E. N., & Hingson, R. W. (2008). Adverse childhood experiences predict earlier age of drinking onset: Results from a representative U.S. Sample of current and former drinkers. *Pediatrics, 122*(2), 298-304.

⁵⁰ Sher, K. J., Gershuny, B. S., Peterson, L., & Raskin, G. (1997). The role of childhood stressors in the intergenerational transmission of alcohol use disorders. *Journal of Studies on Alcohol, 58*(4), 414-427. Anda, R.F., Whitfield, C.L., Felitti, V.J., Chapman, D., Edwards, V.J., Dube, S.R. & Williamson, D.F. (2002). Adverse childhood experiences, alcoholic parents, and later risk of alcoholism and depression, *Psychiatric Services, 53*(8), 1001-9. Dube, S.R., Anda, R.F., Felitti, V.J., Croft, J.B., Edwards, V.J & Giles, W.H. (2001). Growing up with parental alcohol abuse: Exposure to childhood abuse, neglect, and household dysfunction. *Child Abuse and Neglect, 25*(12), 1627-40.

⁵¹ Langeland, W., & Hartgers, C. (1998). Child sexual and physical abuse and alcoholism: A review. *Journal of Studies on Alcohol, 59*, 336-348.

⁵² Sher, K. J., Gershuny, B. S., Peterson, L., & Raskin, G. (1997). The role of childhood stressors in the intergenerational transmission of alcohol use disorders. *Journal of Studies on Alcohol, 58*(4), 414-427. Elliott, J.C., Stohl, M., Wall, M.M., Keyes, K.M., Goodwin, R.D., Skodol, A.E., Krueger, R.F., Grant, B.F. & Hasin, D.S. (2014). The risk of persistent adult alcohol and nicotine dependence: the role of childhood maltreatment. *Addiction*, e-pub ahead of print, accessed March 25, 2014 At: <http://www.ncbi.nlm.nih.gov/pubmed/24401044>

⁵³ Langeland, W., & Hartgers, C. (1998). Child sexual and physical abuse and alcoholism: A review. *Journal of Studies on Alcohol, 59*, 336-348. Wilsnack, S. C., Vogeltanz, N. D., Klassen, A. D., & Harris, T. R. (1997). Childhood sexual abuse and women's substance abuse: National survey findings. *Journal of Studies on Alcohol, 58*, 264-271. Mersky, J.P., Topitzes, J. & Reynolds, A.J. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse and Neglect, 37*(11), 917-25.

⁵⁴ Kaplan, H. B. (1980). *Deviant behavior in defense of self*. New York: Academic Press. Chassin, L., Pillow, D. R., Curran, P. J., Molina, B. S. G., & Barrera, M. (1993). Relation of parental alcoholism to early adolescent substance use: A test of three mediating mechanisms. *Journal of Abnormal Psychology, 102*(1), 3-19.

⁵⁵ White, W., Woll, P., & Webber, R. (2003). *Project SAFE: Best practices resource manual*. Chicago, IL: Illinois Department of Human Service, Office of Alcoholism and Substance Abuse. Xiao, Q., Dong, M.X., Yao, J., Li, W.X. & Ye, D.Q. (2008).

of developing alcohol problems in later life as a response to stressful experiences⁵⁶ and contribute to substance use problem persistence in the face of substance-related illnesses.⁵⁷

Historical trauma, such as that experienced by Native American tribes, has been linked to the intergenerational transmission of AOD and related problems through the mechanisms of negative affect, loss of institutions for acculturation and support, and the depletion of coping skills.⁵⁸

Family Dynamics and Parenting. Studies of family dynamics surrounding parental addiction note unrealistic expectations of children, poor boundary management, low cohesion, weak communication, heightened conflict, role ambiguity and role reversals, lower levels of parental competence, and increased risk of neglect and maltreatment as well as increased risk of victimization by persons outside the immediate family.⁵⁹ Reports of ineffective parenting by substance-affected parents note weak engagement, transmission of negative affect, inadequate support, inadequate, inconsistent or harsh discipline, hostile communications and conflict, weak rule-setting, monitoring and supervision, hardship, increased access to dangerous substances, and paradoxical effects of mother/father problem disclosure—increasing rather than decreasing SUD risk among children.⁶⁰ These conditions can be further exacerbated by poverty, minority status, and single parenthood.⁶¹ Weak monitoring has been linked to increased involvement with AOD-using peers, and strict alcohol-specific rule setting and monitoring in combination with warm parent-child communication have been shown to lower rates of early alcohol exposure and alcohol-related problems.⁶² What have been characterized as “closed family systems” may result in AOD use as an expression of adolescent individuation and separation while simultaneously isolating the family from community resources to intervene early in the development of AOD problems.

Parental Modeling and Collusion. Much of the family literature on parental influences on intergenerational SUD transmission has focused on such specific mechanisms as parental modeling (child emulation/identification of parental AOD use) and its effects on positive AOD

Parental alcoholism, adverse childhood experiences, and later risk of personal alcohol abuse among Chinese medical students. *Biomedical and Environmental Sciences*, 21(5), 411-19.

⁵⁶ Keys, K.M., Shmulewitz, D., Greenstein, E., McLaughlin, K., Wall, M., Aharonovish, E., Weizman, A., Frish, A., Spivak, B., Grant, B.F. & Hasin, D. (2014). Exposure to the Lebanon War of 2006 and effects on alcohol use disorders: The moderating role of childhood maltreatment. *Drug and Alcohol Dependence*, 134, 296-303.

⁵⁷ Edwards, V.J., Anda, R.F., Gu, D., Dube, S.R. & Felitti, V.J. (2007). Adverse childhood experiences and smoking persistence in adults with smoking-related symptoms and illness. *The Permanente Journal*, 11(2), 5-13.

⁵⁸ Brave Heart, M. Y. (2003). The historical trauma response among natives and its relationship with substance abuse: A Lakota illustration. *Journal of Psychoactive Drugs*, 35(1), 7-13. Brave Heart, M. Y., & DeBruyn, L. M. (1998). The American Indian Holocaust: Healing historical unresolved grief. *American Indian and Alaska Native Mental Health Research Journal*, 8(2), 60-82.

⁵⁹ Sheridan, M. J. (1995). A proposed intergenerational model of substance abuse, family functioning, and abuse/neglect. *Child Abuse & Neglect*, 19(5), 519-530.

⁶⁰ Chassin, L., Pillow, D. R., Curran, P. J., Molina, B. S. G., & Barrera, M. (1993). Relation of parental alcoholism to early adolescent substance use: A test of three mediating mechanisms. *Journal of Abnormal Psychology*, 102(1), 3-19.

Hawkins, J.D., Catalano, R.F. & Miller, J.Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance use prevention. *Psychological Bulletin*, 112, 64-105.

Jacob, T., & Johnson, S. (1997). Parenting influences on the development of alcohol abuse and dependence. *Alcohol Health and Research World*, 21(3), 204-209.

⁶¹ Barnard, M. & McKegany, N. (2004). The impact of parental drug use on children: What is the problem and what can be done to help? *Addiction*, 99, 552-559.

⁶² Chassin, L., Pillow, D. R., Curran, P. J., Molina, B. S. G., & Barrera, M. (1993). Relation of parental alcoholism to early adolescent substance use: A test of three mediating mechanisms. *Journal of Abnormal Psychology*, 102(1), 3-19. Konig, I.M., Van Den Eijnden, R., & Vollebergh, W.M. (2014). Alcohol-specific parenting, adolescents' self-control, and alcohol use: A moderated mediation model. *Journal of Studies on Alcohol and Drugs*, 75, 16-23. Li, K., Simons-Morton, B.G., Brooks-Russell, A. Ehsani, J. & Hingson, R. (2014). Drinking and parenting practices as predictors of impaired driving behaviors among U.S. adolescents. *Journal of Studies on Alcohol and Drugs*, 75, 5-15.

beliefs/expectancies⁶³ and parental collusion (coaching and permissiveness related to AOD use).⁶⁴ The magnification of risk may be greatest if parental AOD dependence overlaps the adolescent development of their children.⁶⁵ The literature also notes the potential for “aversive transmission”—AOD problems in a parent sparking aversion to AOD (abstinence or minimal AOD use) in a child.⁶⁶

Older Sibling Influences. Several studies have suggested that sibling influence on AOD use could be greater than parental influence,⁶⁷ particularly when the AOD-involved sibling is older, close-in-age, same-sex, and shares a peer social network with the other siblings.⁶⁸ Siblings of older youth with AOD problems are at increased risk of developing such problems if they experiment with AOD use during adolescence and do so during pre-adolescence or early adolescence.⁶⁹ The mechanisms of such influence include modeling, introduction to drug-using peer network, and opportunities for substance procurement and use.⁷⁰

Early Age of Onset of AOD Use. As noted, a number of confluent factors influence early onset of AOD use among children whose parents have an SUD compared to children without this parental risk factor.⁷¹ Two things are significant related to this finding. First, early onset of AOD use is:

- predictive of adult SUD,⁷²
- faster development of drug dependence,⁷³
- greater problem severity,⁷⁴

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- ⁶³ Belles, S., Budde, A., Moesgen, D., & Klein, M. (2011). Parental problem drinking predicts implicit alcohol expectancy in adolescents and young adults. *Addictive Behaviors, 36*, 1091-1094. Wiers, R. W., Gunning, W. B., & Sergeant, J. A. (1998). Do young children of alcoholics hold more positive or negative alcohol-related expectancies than controls? *Alcoholism, Clinical and Experimental Research, 22*, 1855–1863. Ullman, A. D., & Orenstein, A. (1994). Why some children of alcoholics become alcoholics: Emulation of the drinker. *Adolescence, 29*(113), 1-11.
- ⁶⁴ Varvil-Weld, L., Mallett, K. A., Turrise, R., & Abar, C. C. (2013). Using parental profiles to predict membership in a subset of college students experiencing excessive alcohol consequences: Findings from a longitudinal study. *Journal of Studies on Alcohol and Drugs, 73*, 434-443.
- ⁶⁵ Biederman, J., Faraone, S. V., Monuteaux, M. C., & Feighner, J. A. (2000). Patterns of alcohol and drug use in adolescents can be predicted by parental substance use disorders. *Pediatrics, 106*(4), 792-797.
- ⁶⁶ Ullman, A. D., & Orenstein, A. (1994). Why some children of alcoholics become alcoholics: Emulation of the drinker. *Adolescence, 29*(113), 1-11.
- ⁶⁷ Windle, M. (2000). Parental, sibling, and peer influences on adolescent substance use and alcohol problems. *Applied Developmental Science, 4*, 98-110. Luthar, S. S., Anton, S. F., Merikangas, K. R., & Rounsaville, B. J. (1992). Vulnerability to drug abuse among opioid addicts’ siblings: Individual, familial, and peer influences. *Comprehensive Psychiatry, 33*(3), 190-196.
- ⁶⁸ Whiteman, S. D., Jensen, A. C., & Maggs, J. L. (2013). Similarities in adolescent siblings’ substance use: Testing competing pathways of influence. *Journal of Studies on Alcohol and Drugs, 74*, 104-113.
- ⁶⁹ Luthar, S. S., Anton, S. F., Merikangas, K. R., & Rounsaville, B. J. (1992). Vulnerability to drug abuse among opioid addicts’ siblings: Individual, familial, and peer influences. *Comprehensive Psychiatry, 33*(3), 190-196.
- ⁷⁰ Windle, M. (2000). Parental, sibling, and peer influences on adolescent substance use and alcohol problems. *Applied Developmental Science, 4*, 98-110.
- ⁷¹ Hawkins, J. D., Graham, J. W., Maguin, E., Abbott, R. D, Hill, K. G, & Catalano, R.F. (1997). Exploring the effects of age of alcohol use initiation and psychosocial risk factors on subsequent alcohol misuse. *Journal of Studies on Alcohol. 58*(3), 280–290.
- ⁷² Grant, B. F., & Dawson, S. A. (1997). Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. *Journal of Substance Abuse, 9*, 103-110. Molina, B. S. G., Chassin, L., & Curran, P. J. (1994). A comparison of mechanisms underlying substance use for early adolescent children of alcoholics and controls. *Journal of Studies on Alcohol, 55*, 269-275.
- ⁷³ Kreichbaun, N., & Zering, G. (2000). Adolescent patients. In G. Zering (Ed.), *Handbook of alcoholism* (pp. 129-136). Boca Raton, LA: CRC Press.
- ⁷⁴ National Institute on Alcohol Abuse and Alcoholism. (2003). Underage drinking: A major public health challenge. *Alcohol Alert, 59*, 1-7. Arria, A. M., Dohey, M. A., Mezzich, A. C., Bukstein, O. G., & Van Thiel, D. H. (1995). Self-reported health problems and physical symptomatology in adolescent alcohol abusers. *Journal of Adolescent Health, 16*(32), 226-231.

- greater problem complexity—the presence of comorbid physical and psychiatric disorders,
- less social support for subsequent recovery,⁷⁵
- increased risk of accidents while under the influence of alcohol⁷⁶ and alcohol-related violence,⁷⁷ and
- poor intervention outcomes via less help-seeking and greater post-intervention relapse.⁷⁸

Second, any strategy aimed at breaking intergenerational cycles of SUDs will require interventions aimed at preventing and at least postponing early AOD exposure, particularly among high-risk children and adolescents.

Disruption of Family Rituals. Several researchers have noted the role of disrupted family rituals in the intergenerational transmission of AOD problems.⁷⁹ Family rituals span religious and holiday observances, rituals of entering or exiting the home, dinner rituals, and weekend or vacation rituals. Rituals play a critical role in family health by clarifying roles, delineating boundaries within and without the family, and defining rules so that all members know that “this is the way our family is.”⁸⁰ When family rituals are maintained in the presence of parental AUDs, children are less likely to subsequently develop alcohol or other drug problems.⁸¹ Research by Wolin and colleagues⁸² found that “transmitter families” abandon family rituals or allow rituals to be disrupted, accept intoxicated behavior without expressions of disapproval, ignore the behavior without talking about it, get pulled into collusion roles, or get needs met outside the family. “Non-transmitter families” maintained family rituals, expressed strong disapproval when drinking threatened to disrupt such rituals, and talked about behavior with each other in disapproving tones.⁸³

Environmental factors. Intergenerational transmission of AOD problems can also be intensified by environmental factors, such as distress or disorganization within the neighborhood, key community institutions, and the community as a whole. Such factors increase the prevalence

⁷⁵ Sobell, M. B., Sobell, L. C., Cunningham, J. C., & Agrawal, S. (1998). Natural recovery over the lifespan. In E. L. Gombert, A. M. Hegedus, & R. A. Zucker (Eds.), *Alcohol problems and aging* (NIAAA Research Monograph No. 33, pp. 397-405). Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Wymbs, B.T., McCarty, C.A., Mason, W.A., King, K.M., Baer, J.S., Vander Stoep, A. & McCauley, E. (2014). Early adolescent substance use as a risk factor for developing conduct disorder and depression symptoms. *Journal of Studies on Alcohol and Drugs*, 75, 279-289.

⁷⁶ Hingston, R. W., Heeren, T., Jananka, A., & Howland, J. (2000). Age of drinking onset and unintentional injury involvement after drinking. *Journal of the American Medical Association*, 284, 1527-1533.

⁷⁷ Hingston R. W., Heeren T., & Zakocs R. (2001). Age of drinking onset and involvement in physical fights after drinking. *Pediatrics*, 108(4), 872-877.

⁷⁸ Keller, M., Lavori, P., Beardslee, W., Wunder, J., Drs., D., & Hasin, D. (1992). Clinical course and outcome of substance abuse disorders in adolescents. *Journal of Substance Abuse Treatment*, 9, 9-14. Kessler, R. C., Aguilar-Gaxiola, S., Berglund, P., Caraveo-Anduaga, J., DeWitt, D., Greenfield, S.,...Vega, W. (2001). Patterns and predictors of treatment seeking after onset of a substance use disorder. *Archives of General Psychiatry*, 58(11), 1065-1071. Chen, J., & Millar, W. (1998). Age of smoking initiation: Implications for quitting. *Health Reports*, 9(4), 39-46.

⁷⁹ Steinglass, P., Bennett, L. Wolin, S., & Reis, D. (1987). *The alcoholic family*. New York: Basic Books. Hawkins, C. A. (1997). Disruptions of family rituals as a mediator of the relationship between parental drinking and adult adjustment in offspring. *Addictive Behaviors*, 22(2), 219-231. Wolin, S. J., Bennett, L. A., & Noonan, D. L. (1979). Family rituals and the recurrence of alcoholism over generations. *American Journal of Psychiatry*, 136(4B), 589-593. Wolin, S. J., Bennett, L. A., Noonan, D. L., & Teitelbaum, M. A. (1980). Disrupted family rituals: A factor in the intergenerational transmission of alcoholism. *Journal of Studies on Alcohol*, 41(3), 199-214.

⁸⁰ Wolin, S. J., Bennett, L. A., Noonan, D. L., & Teitelbaum, M. A. (1980). Disrupted family rituals: A factor in the intergenerational transmission of alcoholism. *Journal of Studies on Alcohol*, 41(3), 199-214.

⁸¹ Wolin, S. J., Bennett, L. A., Noonan, D. L., & Teitelbaum, M. A. (1980). Disrupted family rituals: A factor in the intergenerational transmission of alcoholism. *Journal of Studies on Alcohol*, 41(3), 199-214.

⁸² Wolin, S. J., Bennett, L. A., Noonan, D. L., & Teitelbaum, M. A. (1980). Disrupted family rituals: A factor in the intergenerational transmission of alcoholism. *Journal of Studies on Alcohol*, 41(3), 199-214.

⁸³ Wolin, S. J., Bennett, L. A., Noonan, D. L., & Teitelbaum, M. A. (1980). Disrupted family rituals: A factor in the intergenerational transmission of alcoholism. *Journal of Studies on Alcohol*, 41(3), 199-214.

of peer AOD use/peer modeling, AOD availability, and AOD promotion at local/cultural levels and can concentrate AOD-related problems within particular families and neighborhoods.

SUMMARY. High genetic risks, neonatal insult from maternal AOD use, developmental vulnerabilities, high-risk family and community environments, and inadequate personal, family, and community protective factors combine to elevate risk for development of severe and prolonged substance use disorders and continuing intergenerational cycles of addiction and related problems.⁸⁴ This section of our paper identified eleven potential mechanisms that can influence the intergenerational transmission of AOD problems. Each of these mechanisms have severity and density dimensions that can influence and potentially magnify risks and that interact with recovery and resiliency capital factors to shape one's ultimate risk for AOD problems. Multiple risk factors (diverse etiological pathways) may set the stage for development of SUDs among children from affected families, with SUDs then becoming functionally autonomous from these factors.⁸⁵ What we are seeking in this exercise is the identification of potential sequences/combinations of interventions that can reduce risk factors where possible and to amplify protective factors that can neutralize or diminish these risk factors.

Potential Protective Factors

Research on the risks faced by children of parents with SUDs has in recent decades been extended to the study of resilience among such children. The concept of resilience posits that resilience, by definition, exists only in the presence of adversity and risk.⁸⁶ It is based on the understanding that protective factors exist that minimize or neutralize the effects of adversity allowing children at high risk of developing AOD and related problems to effectively cope, and in many cases, thrive.⁸⁷ Werner's⁸⁸ classic study of resilience in children of alcoholics concluded that: "The risks associated with parental alcoholism can be buffered by constitutional characteristics of the child, and by qualities of the early caregiving environment" (p. 39). Protective characteristics in the Werner study included qualities of temperament that drew positive attention from parents and others, intelligence, communication skills, achievement orientation, caring attitude toward others, and positive self-concept. Mylant et al.⁸⁹ note five SUD protective factors: 1) personality characteristics that evoke positive social responses from others, 2) capitalizing on special abilities, e.g., academic or athletic success, 3) parenting that fosters competence and self-esteem, 4) relationships with other supportive adults, and 5) opportunities that arrived during critical life transitions.

⁸⁴ Kumpfer, K. L. & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to "substance abuse disorders". *Substance Use & Misuse*, 5, 671-698.

⁸⁵ Chassin, L., Curran, P. J., Hussong, A. M., & Colder, C. R. (1996). The relation of parent alcoholism to adolescent substance use: A longitudinal follow-up study. *Journal of Abnormal Psychology*, 105(1), 70-80. Cadoret, R., Yates, W., Troughton, E., Eoodworth, G., & Stewart, M. (1995). Adoption study demonstrating two genetic pathways to drug abuse. *Archives of General Psychiatry*, 53, 42-52. Hussong, A. M., Curran, P. J., & Chassin, L. (1998). Pathways of risk for accelerated heavy alcohol use among adolescent children of alcoholic parents. *Journal of Abnormal Child Psychology*, 26(6), 453-466.

⁸⁶ Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331.

⁸⁷ Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance use prevention. *Psychological Bulletin*, 112, 64-105. Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331.

⁸⁸ Werner, E. E. (1986). Resilient offspring of alcoholics: A longitudinal study from birth to age 18. *Journal of Studies on Alcohol*, 47(1), 34-40.

⁸⁹ Mylant, M. L., Ide, B., Cuevas, E., & Meehan, M. (2002). Adolescent children of alcoholics: Vulnerable or resilient? *Journal of the American Psychiatric Nurses Association*. 8(2), 57-64.

Benard's research review in the late 1990s concluded, "50-70% of "high risk" children grow up to be successful, confident, competent, and caring individuals."⁹⁰ Subsequent reviews noted three elements of such resilience: 1) strengths of the child, 2) strengths of the family, and 3) strengths of the community. Personal strengths include happiness, hope, competence, confidence, purpose, determination, and social and coping skills; family strengths include parent-child bonding, parental supervision and discipline, family communication, maternal and paternal disapproval of AOD use, and availability of supports outside the family.⁹¹ As noted earlier, maintenance of family rituals in the presence of parental SUD has also been found to be a protective factor for children in such families.⁹² Resiliency studies have evolved from a focus on resiliency traits to resiliency as a relational process between child, family, and community.⁹³

Protective factors include "turning points" (e.g., events, relationships, and opportunities) that fundamentally and positively alter the trajectory of a child's life for years to come,⁹⁴ developmental differentiation (de-identification) between younger siblings and older AOD-using siblings,⁹⁵ and parenting-related protective factors, including nurturance (warmth), socialization (clarity of family values and expectations), modeling, and control (supervision, monitoring, and discipline).⁹⁶ Supportive community networks have also been found to reduce and ameliorate the effects of adverse childhood experiences.⁹⁷

Surprisingly, little research has been conducted on the effects of parental recovery status on the future risk of children developing an SUD. Moos and Billings⁹⁸ reported better emotional health and functioning of children of recovering alcoholics compared to children of alcoholics who had relapsed but did not find differences in the children's substance use behaviors. Studies of family structure show far greater impaired structure in alcoholic families than in families in

⁹⁰ Benard, B. (1997). Turning it around for all youth: From risk to resilience (ERIC/CUE Digest No. 126). New York: ERIC Clearinghouse on Urban Education. Also see: Kumpfer, K. L. & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to "substance abuse disorders". *Substance Use & Misuse*, 5, 671-698.

⁹¹ Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331. Curran, P. J., & Chassin, L. (1996). A longitudinal study of parenting as a protective factor for children of alcoholics. *Journal of Studies on Alcohol*, 57(3), 305-313. Varvil-Weld, L., Mallett, K.A., Turrisi, R. & Abar, C.C. (2013). Using parental profiles to predict membership in a subset of college students experiencing excessive alcohol consequences: Findings from a longitudinal study. *Journal of Studies on Alcohol and Drugs*, 73, 434-443. Kumpfer, K. L. & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to "substance abuse disorders". *Substance Use & Misuse*, 5, 671-698.

⁹² Wolin, S. J., Bennett, L. A., & Noonan, D. L. (1979). Family rituals and the recurrence of alcoholism over generations. *American Journal of Psychiatry*, 136(4B), 589-593. Wolin, S. J., Bennett, L. A., Noonan, D. L., & Teitelbaum, M. A. (1980). Disrupted family rituals: A factor in the intergenerational transmission of alcoholism. *Journal of Studies on Alcohol*, 41(3), 199-214. Fies, B. H. (1993). Family rituals in alcohol and nonalcoholic households: Relation to adolescent health symptomatology and problem drinking. *Family Relations*, 42, 187-192.

⁹³ Kumpfer, K. L. & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to "substance abuse disorders". *Substance Use & Misuse*, 5, 671-698.

⁹⁴ Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331. Larkin, H., Beckos, B.A. & Shields, J.J. (2012). Mobilizing resilience and recovery in response to adverse childhood experiences (ACE)" A Restorative Integral Support (RIS) case study, *Journal of Prevention and Intervention in the Community*, 40(4), 335-46.

⁹⁵ Whiteman, S. D., Jensen, A. C., & Maggs, J. L. (2013). Similarities in adolescent siblings' substance use: Testing competing pathways of influence. *Journal of Studies on Alcohol and Drugs*, 74, 104-113.

⁹⁶ Bröning, S., Kumpfer, K., Kruse1, K., Sack, P., Schaunig-Busch, I., Ruths, S., Moesgen, D., Pflug, E. Klein, & Thomasius, R. (2012). Selective prevention programs for children from substance-affected families: a comprehensive systematic review. *Substance Abuse Treatment, Prevention, and Policy* 2012, 7:23 Accessed January 8, 2014 at <http://www.substanceabusepolicy.com/content/7/1/23>

⁹⁷ Hall, J. Porter, L., Longhi, D., Becker-Green, J. & Dreyfus.S. (2012). Reducing adverse childhood experiences (ACE) by building community capacity: A summary of Washington Family Policy Council research findings. *Journal of Prevention and Intervention in the Community*, 40(4), 325-34.

⁹⁸ Moos, R. H., & Billings, A. G. (1982). Children of alcoholics during the recovery process: Alcoholic and matched control families. *Addictive Behaviors*, 7, 155-163.

recovery or community controls,⁹⁹ that the distressing effects of addiction on the family decline in recovery,¹⁰⁰ and that families in recovery function as well as families not affected by addiction (although less socially active).¹⁰¹ Also of note is a study by Chassin and Barrera¹⁰² finding that children of parents in recovery have lower AOD consumption than children whose parents continue to have AOD-related problems.¹⁰³ Parental recovery status may be offset by sibling influences: "...sibling drinking, affiliation with peers who drink, lowered socioeconomic status, and high levels of environmental stress may place adolescent children of alcoholics on a high-risk developmental trajectory regardless of whether parental alcoholism is active or remitted."¹⁰⁴

Also of note is Knight and colleagues'¹⁰⁵ conclusion that "...intergenerational risk may be reduced if substance use can be curtailed in adolescence." This would suggest the potential role of student assistance programs and assertive treatment of high-risk adolescents as potential intervention points for breaking intergenerational cycles of addiction.

Research on the long-term resiliency of children at increased risk for development of SUDs suggests optimism for the development of future strategies to break intergenerational cycles of addiction. Given the complexity of both risk and resiliency factors, such strategies will require discovery of the most potent combinations and sequences of interventions and implementing these interventions at personal, family, community, and state and national social policy levels.

Evaluations of Intergenerational Interventions

Optimism also comes from studies evaluating interventions that exert influence across generations. The question plaguing family models of intervention is whether the highest risk families can be engaged for such interventions. Research to date suggests that high risk families can be engaged and retained in service interventions for an extended period of time¹⁰⁶ and that parental addiction recovery prospects are enhanced by elevating the functioning of the spouse and family¹⁰⁷ and through family involvement in treatment.¹⁰⁸ Interventions into parental SUDs seem quite promising. For example, the use of recovery coaches in child welfare settings has been shown to reduce risk of prenatal substance use exposure, increased access to addiction treatment and enhanced odds of family reunification.¹⁰⁹ Studies of addiction treatment outcomes

⁹⁹ Preli, R., & Protinsky, H. (1988). Aspects of family structures in alcoholic, recovered, and nonalcoholic families. *Journal of Marital and Family Therapy*, 14(3), 311-314.

¹⁰⁰ Moos, R. H., Finney, J. W., & Gamble, W. (1982). The process of recovery from alcoholism. II. Comparing spouses of alcoholics patients and matched community controls. *Journal of Studies on Alcohol*, 43, 888-909.

¹⁰¹ Moos, R. H., Finney, J. W., & Chan, D. A. (1981). The process of recovery from alcoholism. I. Comparing alcoholic patients and matched community controls. *Journal of Studies on Alcohol*, 42, 383-402.

¹⁰² Chassin, L. & Barrera, M. (1993). Substance use escalation and substance use restraint among adolescent children of alcoholics. *Psychology of Addictive Behaviors*, 7(1), 3-20.

¹⁰³ Chassin, L. & Barrera, M. (1993). Substance use escalation and substance use restraint among adolescent children of alcoholics. *Psychology of Addictive Behaviors*, 7(1), 3-20.

¹⁰⁴ Ellis, D. A., Zucker, R. A., & Fitzgerald, H. E. (1997). Children of alcoholics: The role of family influences on development and risk. *Alcohol, Health & Research World*, 21, 218-226. Chassin, L., Pitts, S. C., DeLucia, C., & Todd, M. (1999). A longitudinal study of children of alcoholics: Predicting young adult substance use disorders, anxiety, and depression. *Journal of Abnormal Psychology*, 108(1), 106-119.

¹⁰⁵ Knight, K., Menard, S & Simmons, S. (2013). *Intergenerational continuity of substance use. Substance Use & Misuse*, Posted online on August 21, 2013. (doi:10.3109/10826084.2013.824478)

¹⁰⁶ Barnard, M., & McKegany, N. (2004). The impact of parental drug use on children: What is the problem and what can be done to help? *Addiction*, 99, 552-559.

¹⁰⁷ Steinglass, P. (1981). The impact of alcoholism on the family: Relationship between degree of alcoholism and psychiatric symptomatology. *Journal of Studies on Alcohol*, 42, 288-303.

¹⁰⁸ Orford, J., Oppenheimer, E., Egert, S., Hensman, C., & Guthrie, S. (1976). The cohesiveness of alcohol: Complicated marriages and its influence on treatment outcome. *British Journal of Psychiatry*, 128, 318-399.

¹⁰⁹ Ryan, J. P., Choi, S., Huang, J., Hernandez, P., & Larrison, C. (2008). Recovery coaches and substance exposure at birth: An experiment in child welfare. *Child Abuse and Neglect*, 32, 1072-1079. Ryan, J. P., Marsh, J., Testa, M. F., &

have also found that recovery enhances family functioning¹¹⁰ and that families in recovery function on par with community controls.¹¹¹ Spouses of recovered alcoholics report less marital conflict than spouses of alcoholics not in recovery and spouses of community controls¹¹²—suggesting a lessening of this risk factor for intergenerational transmission.

Some optimism also comes from research on fetal alcohol spectrum disorders (FASDs) where studies have confirmed three important findings: 1) assertive case management (education, coaching, and monitoring) of pregnant women and women about to become pregnant dramatically increases the odds of a healthy pregnancy via elimination or severe reductions in drinking)¹¹³, 2) a stable, nurturing home spanning most of one's childhood can serve as a protective factor for the development of AOD problems among children experiencing FASDs,¹¹⁴ and 3) accommodations can be made to the delivery of addiction treatment that address impairments related to FASDs¹¹⁵

Research to date suggests multiple targets for parental intervention: 1) enhancing general parenting effectiveness, 2) enhancing AOD-specific parenting practices, and 3) outreach aimed at engaging the addicted parent and related family-focused interventions.¹¹⁶ Child-focused interventions could include educating high-risk children (e.g., family history of AOD problems) about their risks related to problem drinking. At-risk children educated about such risks subsequently consume less alcohol than at-risk children not educated about such risks.¹¹⁷

Multi-component programs (targeting children and parents or child, parent and community) have greater effects than programs with a single target.¹¹⁸ Also informing potential interventions is the discovery that past prevention programs have the potential for iatrogenic effects (harm in the name of help, e.g., increasing rather than decreasing drug use and its mediators rather than reducing them).¹¹⁹ In a review of research on prevention programs, Werch

Louderman, R. (2006). Integrating substance abuse treatment and child welfare services: Findings from the Illinois AODA Waiver Demonstration. *Social Work Research, 30*, 95-107. Marsh, J., Ryan, J. P., Choi, S., & Testa, M. (2006). Integrated services for families with multiple problems: Obstacles to family reunification. *Children and Youth Services Review, 28*, 1074-1087.

¹¹⁰ Orford, J., Oppenheimer, E., Egert, S., Hensman, C., & Guthrie, S. (1976). The cohesiveness of alcohol: Complicated marriages and its influence on treatment outcome. *British Journal of Psychiatry, 128*, 318-399.

¹¹¹ Moos, R. H., & Moos, B. S. (1984). The process of recovery from alcoholism: III. Comparing function in families of alcoholics and matched control families. *Journal of Studies on Alcohol, 45*(2), 111-118.

¹¹² Moos, R. H., & Moos, B. S. (1984). The process of recovery from alcoholism: III. Comparing function in families of alcoholics and matched control families. *Journal of Studies on Alcohol, 45*(2), 111-118.

¹¹³ Grant, T., Streissguth, A. & Ernst, C. (2002). Benefits and challenges of paraprofessional advocacy with mothers who abuse alcohol and drugs and their children. *Zero to Three, 23*, 14-20. May, P.A., Miller, J.H., Goodhart, K.A., Maestas, O.R., Buckley, D., Trujillo, P.M. & Gossage, J.P. (2008). Enhanced case management to prevent fetal alcohol spectrum disorders in northern plains communities. *Maternal and Child Health Journal, 12*, 749-759. May, P.A., Marais, A-S., Gossage, P., et al (2013). Case management reduces drinking during pregnancy among high-risk women. *International Journal of Alcohol and Drug Research, 2*(3), 61-70.

¹¹⁴ Streissguth, A.P., Bookstein, F.L., Barr, H.M., et al (2004). Risk factors for adverse life outcomes in fetal alcohol syndrome and fetal alcohol effects. *Journal of Development & Behavioral Pediatrics, 25*, 228-238.

¹¹⁵ Sparrow, J., Grant, T.M., Connor, P. & Whitney, N. (2013). The value of the neuropsychological assessment for adults with fetal alcohol spectrum disorders: A case study. *International Journal of Alcohol and Drug Research, 2*, 79-86.

¹¹⁶ Lam, W.K., Cance, J.D., Eke, A.N., Fishbein, D.H. Hawkins, S.R. & Williams, C. (2007). Children of African-American mothers who use crack cocaine: Parenting influences on youth substance use. *Journal of Pediatric Psychology, 32*(8), 877-887.

¹¹⁷ Kumpfer, K. (1989). Promising prevention strategies for high-risk children of substance abusers. *OSAP High Risk Youth Update, 2*(1),1-3.

¹¹⁸ Tobler, N., & Kumpfer, K. L. (2000). *Meta-analysis of effectiveness of family-focused substance abuse prevention programs*. Report submitted to the Center for Substance Abuse Prevention, Rockville, MD.

¹¹⁹ Werch, C. E., & Owen, D. M. (2002). Iatrogenic effects of alcohol and drug prevention programs. *Journal of Studies on Alcohol, 63*(5), 581-590. Brown, J. H., & Caston, M. D. (1995). On becoming "at risk" through drug education: How symbolic policies and their practices affect students. *Evaluation Review, 19*, 451-492. Goodstadt, M. S. (1980). Drug education: A turn on or turn off? *Journal of Drug Education, 10*, 89-99. Gorman, D. M. (1997). The failure of drug education. *Public Interest, 129*, 49-60.

and Owen¹²⁰ found 17 alcohol and drug prevention studies reporting negative effects of the intervention, e.g., increased alcohol use. Great care must be taken in the design of such interventions as well as in the rigorous evaluation of piloted interventions before widespread application.

Clinical and Recovery Support Strategies

Based on this review, we believe the following practices could be implemented within addiction treatment programs and recovery community organizations to reduce intergenerational cycles of addiction. These recommendations are proposed as discussion points for the continued evolution of the behavioral healthcare system within the City of Philadelphia.

Recommendation 1: *Shift the “unit of service” for addiction treatment programs from the individual to the family and extended family with concomitant changes in assessment; service planning and delivery; and long-term monitoring, support, and if and when needed, early re-intervention. In this shift, assessment and service planning would potentially encompass service plans for each individual family member and the family as a unit. Each person seeking recovery would be asked three core questions at the point of engagement: 1) How can we help you achieve and maintain stable recovery? 2) What does your partner need at this time to enhance his or her present and future physical/emotional health and security? 3) What do your children most need to enhance their present and future physical/emotional health and security? These same questions would be asked of family members, with cumulative responses shaping the resulting service plans.*

Recommendation 2: *Conduct screenings for fetal alcohol spectrum disorders (FASDs) for all persons entering addiction treatment and integrate accommodations for the potential cognitive/behavioral deficits such individuals may exhibit that could compromise their long-term recovery outcomes.*¹²¹

Recommendation 3: *Communicate to all parents undergoing addiction treatment or participating in recovery support services that their children are at increased risk to develop an AOD problem and that there are specific actions they can take (e.g., effective parenting, key AOD-specific parenting practices, maintenance of key family rituals, etc.) to lower that risk. The actions that parents could take could be modeled by staff and volunteers (e.g., effective listening) and by the program as a whole (e.g., modeling rituals of daily communication, exit and entry, mealtime rituals, holiday celebrations, etc.).*

Recommendation 4: *Integrate services for couples, children, and families within all addiction treatment programs, including educational (e.g., parenting effectiveness training, marital communication and conflict resolution, and effective boundary management), screening and early intervention, therapeutic and peer recovery support tracks that use engaging media (including internet resources, art, music and drama). Each family undergoing treatment should be aided in preparation of a family relapse prevention and management plan that includes identification of resources for rapid responses to any crises within the family.*

Recommendation 5: *Establish child-focused goals for families in addiction treatment and families with children affected by FASDs that include (adapted from Kumpfer & Bluth, 2004)¹²²*

- attachment of each child with at least one caring adult,

¹²⁰ Werch, C. E., & Owen, D. M. (2002). Iatrogenic effects of alcohol and drug prevention programs. *Journal of Studies on Alcohol*, 63(5), 581-590.

¹²¹ Grant, T.M., Brown, N.N., Graham, J.C., Whitney, N., Dubovsky, D. & Nelson, L. (2013). Screening in treatment programs for fetal alcohol spectrum disorders that could affect therapeutic progress. *International Journal of Alcohol and Drug Research*, 2(3), 37-49.

¹²² Kumpfer, K. L. & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to “substance abuse disorders”. *Substance Use & Misuse*, 5, 671-698.

- availability of at least one positive, encouraging role model for each child,
- balance of emotional closeness and support with clear behavioral expectations,
- ensuring regular parent-child time,
- consistent family rituals,
- positive ethnic/cultural identification,
- availability of teaching/coaching life skills and competencies,
- clear expectations/consistent discipline (including AOD use rules),
- communication of high expectations,
- encouraging dreams and aspirations via identification of strengths and interests, and
- attachment to extended family and social network.

Recommendation 6: *Target the younger siblings* of adolescents and young adults admitted for addiction treatment for prevention and early intervention services, with services delivered by the treatment program or through assertive linkage to community resources (e.g., student assistance programs within the schools).

Recommendation 7: *Develop collaborative, multi-agency models of intense interventions* for families/children of those entering service with the highest levels of problem severity and lowest levels of recovery capital (prioritize resources for these families at highest risk for intergenerational transmission of multiple problems).

Recommendation 8: *Add evaluation of physical/emotional health, AOD status and school performance of children* as a recovery-focused, post-treatment benchmark within all addiction treatment follow-up data collection.

Policy Implications and Policy Level Strategies

The issues raised in this paper have profound implications for behavioral health policy, funding, and service system evaluation. In this final section of the paper, we will try to outline some potential directions that DBH/IDS and our local, state, and national counterparts might take to address the intergenerational transmission of addiction and related problems.

This review suggests a number of broad strategies, many of which are already being undertaken by communities across the country, including 1) programs to treat parental addiction, 2) prevention programs aimed at preventing adult addiction, 3) programs aimed at prevention of fetal alcohol syndrome and fetal alcohol effects, 4) school-based prevention programs for children, 5) programs targeting children (particularly sons) of alcohol dependent fathers, 6) mutual aid via Alateen, COA, and ACOA groups, and 7) Strengthening Families Programs (SFPs) aimed at both parents and children.¹²³ Broad intervention goals for high-risk children include decreasing their exposure to risk factors through treatment and recovery support strategies for parents and by enhancing protective factors within the child and within the child's environment, e.g., access to adults who can buffer reduced competencies of the addicted parent.¹²⁴ Breaking intergenerational cycles of addiction is inseparable from addressing broader adversities that affect the fate of at-risk children.

¹²³ Cuijpers, P. (2005). Prevention programs for children of problem drinkers: A review. *Drug Education Prevention and Policy*, 12(6), 465-475.

¹²⁴ Werner, E. E. (1986). Resilient offspring of alcoholics: A longitudinal study from birth to age 18. *Journal of Studies on Alcohol*, 47(1), 34-40.

Earlier work has sought to conceptualize what is needed in this area. Masten¹²⁵ suggested a four-part strategy: “1) reduce environmental risk and vulnerability, 2) reduce stressors and pileup, 3) increase available resources, and 4) mobilize protective processes.”¹²⁶ Schuckit and Smith¹²⁷ suggested that a key step in addressing intergenerational transmission of AOD problems was to shrink the adult SUD population through effective prevention, early intervention, and treatment programs. Grant¹²⁸ offered a particularly bold vision.

What is urgently needed is a comprehensive strategy that integrates all systems oriented toward the provision of health, social, and treatment services, designed to improve the lives of children at risk from their exposure to alcohol abuse and dependence [and other drug problems] in the family. Such a strategy must include a broadening of an array of services targeted to the needs of these children at every developmental stage, coupled with aggressive interventions to enhance their lives and protect their safety.

Based on the review conducted in this paper, we would offer the following concrete steps that policy leaders and systems administrators could take to forge a long-term plan to address the intergenerational transmission of AOD problems.

Recommendation 1: *Issue a Policy Statement on Promoting Family Recovery and Intergenerational Health* as a public health issue to signal this increased focus on needs of children and families affected by addiction and related problems.

Recommendation 2: *Create The Intergenerational Fund*—a multi-agency coalition committing staff and public financial resources toward joint policy initiatives that support innovative projects aimed at stemming the intergenerational transmission of AOD problems, mental health challenges, child neglect and abuse, school failure, criminality, and violence.

Recommendation 3: *Broaden and sustain early intervention resources* within each community to include student assistance programs in all middle and high schools and encouraging pediatricians to assess AOD family history and screening for AOD problems in pre-teens and adolescents. We believe successful models of physician screening, brief intervention, and referral to treatment for adults could be adapted for use with latency-age children and adolescents.

Recommendation 4: *Identify and intensify intensity and duration of services for individuals and families at greatest risk* of contributing to future AOD problems. A small percentage of AOD users and their families experience an inordinate proportion of the total negative consequences and costs of AOD use. This high risk population could be identified and targeted for specialized, multi-agency prevention, early intervention, treatment, and recovery support strategies.¹²⁹ Children of the most severely AOD dependent parents could be identified for intensified service interventions with particular focus on those exhibiting developmental antecedents of SUDs

¹²⁵ Masten, A. S. (1994). Resilience in individual development: Successful adaptation despite risk and adversity. In M. C. Wang & E. W. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects* (pp. 3-25). Hillsdale, NJ: Erlbaum.

¹²⁶ Kumpfer, K. L. & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to “substance abuse disorders”. *Substance Use & Misuse*, 5, 671-698.

¹²⁷ Schuckit, M. & Smith, T. (2001). The clinical course of alcohol dependence associated with a low level of response to alcohol. *Addiction*, 96, 903-910.

¹²⁸ Grant, B. F. (2000). Estimates of US children exposed to alcohol abuse and dependence in the family. *American Journal of Public Health*, 90(1), 112-115.

¹²⁹ Varvil-Weld, L., Mallett, K. A., Turrisi, R., & Abar, C. C. (2013). Using parental profiles to predict membership in a subset of college students experiencing excessive alcohol consequences: Findings from a longitudinal study. *Journal of Studies on Alcohol and Drugs*, 73, 434-443.

and/or exhibiting early onset of AOD use. One of the goals of these interventions would be linkage of children and families to natural and sustainable supports that exist within the community. Also of value would be the expansion of family education, use of family advocates and The Recovering Families Parenting Program and the Guiding Good Choices Program through the Recovery Community Center.

Recommendation 5: *Develop clinical guidelines* (and monitoring benchmarks) for minimal levels of child/family-focused services to be provided by publicly funded addiction treatment programs.

Recommendation 6: *Provide support for at least one designated child/family service position* within every publicly funded addiction treatment program toward goals of:

- integrating family/child assessment into the intake and clinical assessment process,
- integrating parenting training/coaching into primary addiction treatment or continuing care,
- providing prevention and early intervention services to children whose older sibling has been admitted to addiction treatment, and
- facilitating peer-based recovery support services for children and adult family members.

Recommendation 7: *Integrate child/family services* into existing and new post-treatment monitoring, support, and early re-intervention efforts within both addiction treatment programs and within the recovery support menu of recovery community organizations, e.g., offering parenting in recovery training for local communities of recovery, encouraging development and utilization of child and family recovery support groups, etc. Recovery community organizations could be encouraged and supported to expand recovery support services for families and children and to include families and children in recovery celebration events.

Recommendation 8: *Support community-based programs* aimed at the prevention/postponement of AOD use and assertive early intervention into AOD problems among adolescent and young adults and programs aimed at the prevention of and early intervention with fetal alcohol spectrum disorders (FASDs).

Recommendation 9: *Support ethnic cultural revitalization movements* that address health and relationship challenges within the contexts of historical trauma and needed personal/cultural renewal.

Recommendation 10: *Support and conduct research* on the intergenerational transmission of AOD and related problems, including the isolation of active ingredients within programs that ameliorate this risk. Such research should include studies of resilient children and isolation of the factors that contribute to their resiliency. There is a paucity of well-designed studies to inform national and community-level policy development aimed at breaking intergenerational cycles of addiction.¹³⁰ Such studies are needed to marshal and target limited resources and to avoid potential iatrogenic effects of interventions into this incredibly complex issue.¹³¹ Research efforts should include exploration of mechanisms to establish baseline and regularly updated rates of

¹³⁰ Woolfall, K., & Sumnall, H. (2010). Evaluating interventions for children of substance using parents: A review of outcome measures, *Addiction Research and Theory*, 18(3), 326-343.

¹³¹ Bröning, S., Kumpfer, K., Kruse, K., Sack, P., Schaunig-Busch, I., Ruths, S., Moesgen, D., Pflug, E. Klein, & Thomasius, R. (2012). Selective prevention programs for children from substance-affected families: a comprehensive systematic review. *Substance Abuse Treatment, Prevention, and Policy* 2012, 7:23 Accessed January 8, 2014 at <http://www.substanceabusepolicy.com/content/7/1/23>

intergenerational SUD transmission. Such data to our knowledge has never been collected to guide systems planning and service evaluation.

Recommendation 11: *Assess the extent to which the issues outlined in these recommendations suggest changes in policies and procedures* for program licensure, funding, pay-for-performance benchmarks, program monitoring, quality assurance and worker training and credentialing.

Conclusions

It is our belief that America cannot, in the long-term, treat its way out of its most severe, complex, chronic and costly AOD problems without extending that treatment to address the broader needs of families and children. The central policy question is how local communities can muster the resources to serve more than a small fraction of at-risk children and families.¹³² Meeting that challenge will require the strategic integration and selective focusing of existing resources and garnering additional resources dedicated to the specific goal of breaking intergenerational cycles of addiction and related problems. What is needed is leadership within a single community to demonstrate the viability and effects of a sustained community effort to achieve this goal. This paper is an invitation and challenge to the City of Philadelphia to become that pioneering community.

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¹³² Barnard, M. & McKegany, N. (2004). The impact of parental drug use on children: What is the problem and what can be done to help? *Addiction*, 99, 552-559.