

PRENATAL SUBSTANCE MISUSE: EXPLORING HEALTHCARE  
PROVIDERS' ATTITUDES AND PERCEPTIONS

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## DEDICATION

This dissertation is dedicated to Landon Patrick Trainor and Rory Christopher Trainor. May you always remember that you can conquer your greatest challenges. It is okay for things to be hard and it is okay to be scared, for being brave is not the absence of fear but the ability to continue despite the fear.

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Kristin Elise Trainor

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To maximize beneficial outcomes for babies and mothers in substance misuse situations, it is necessary to understand the current societal factors and the stigma that healthcare providers may be imposing on the families. More than 5% of all pregnancies are affected by prenatal substance misuse prompting a public health crisis. The negative effects from drug misuse on the growing baby ranges from neonatal abstinence syndrome (NAS), mental retardation, behavioral abnormalities, and neurological deficits. The exposure also causes lengthy hospitalizations for babies and high financial costs. The provider must balance their own feelings and beliefs about substance misuse in pregnancy while simultaneously providing appropriate and supportive care to the mother. However, health-related stigma can occur as providers must care for both mother and baby, in an often stressful work environment.

This research explored structural stigma, which broadly encompassed the policies and cultural practices, towards women with prenatal substance misuse among providers in a maternal/fetal healthcare unit. The study, with 117 participants from an area hospital system, examined several variables including the attitudes, perceptions, and stigma among healthcare providers towards prenatal substance misuse. A factorial MANOVA and descriptive analysis was used to assess the data. Among the findings, a significant difference was found between the type of employment discipline and a practitioner's attitudes and level of structural stigma. Direct Care Nurses had an increased negative attitude towards women with prenatal substance misuse. Additionally, there was a strong

correlation ( $r=0.612$ ) between the cause of substance misuse and a healthcare provider's attitudes towards prenatal substance misuse. If the provider believed substance misuse stemmed from a moral flaw or failing, he/she had a more negative attitude towards women with prenatal substance misuse. The current study identified the potential stigma and attitudes among healthcare providers and offered insight into the practice methods within the healthcare setting. Specifically, a three-tiered protocol to improve the culture, education, and practice within the hospital setting emerged.

Robert Vernon, Ph.D., Chair



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## **Chapter One: Prenatal Substance Misuse: Exploring Health Care Providers' Attitudes and Perceptions**

### **Introduction**

Prenatal substance misuse is a public health concern (Stone, 2015) with more than 5% of all pregnancies resulting in illicit prenatal substance exposure (NIDA, 2017). However, the incidence of prenatal substance misuse may be substantially higher as drug misuse is often underreported when not using biomarkers (Chiandetti et al., 2017; Garg et al., 2016). Substance misuse crosses all racial, class, and age demographics though differences lie in the type of substance used (Prasad, 2014; Stein, 2002). However, all have negative effects on the growing fetus ranging from neonatal abstinence syndrome (NAS), mental retardation, behavioral abnormalities, and neurological deficits (Logan, Brown, & Hayes, 2013; Patrick et al., 2012; Stein, 2002). Prenatal substance misuse causes not only lengthy hospitalizations for both mother and baby but high financial costs for the taxpayer (Patrick et al., 2012; Whiteman et al., 2014).

The compounding effects of drug use and fetal distress can make it difficult for providers to remain positive or even neutral toward the mother. Thus, provider beliefs regarding drug use may lead to stigma. Health-related stigma is a “sociocultural process in which social groups are devalued, rejected, and excluded on the basis of a socially discredited health condition” (Livingston, Milne, Fang, & Amri, 2012, p. 39). An individual with addiction can face varying degrees of negative interactions. Medical providers may under-medicate patients with substance misuse due to concerns of drug-seeking behavior or negative feelings towards the individual (Stein, 2002). Parental support is a leading tool to increase positive outcomes for drug-exposed infants (Seattle Children's, nd.). If, however, the mother is met with judgment, anger, or dismissiveness,

she will likely have poor follow-up care and limited hospital visitation with her baby. This situation may negatively affect the mother's progress in bonding with the baby and lead to more negative outcomes for the baby. To maximize beneficial outcomes for babies in substance misuse situations, it is necessary to understand the current societal facts, the varying types of drug situations, the cross racial/economic status nature of drug misuse, the varying legal implications, and the stigma that healthcare providers may, intentionally or unintentionally, be imposing on these families. Once providers recognize their part in the imposed stigma, they may be willing to take action to enhance the opportunities for a more positive health situation for mother and baby, as well as an improved work environment.

**Opioid explosion.** In 2012, more than 21,000 babies born in the United States experienced opioid withdrawal (National Institute on Drug Abuse, 2017). The instance of opioid dependent babies has grown fivefold since 2000 (National Institute on Drug Abuse, 2017). On August 10, 2017, President Trump declared the opioid crisis a national emergency. The opioid crisis not only affects the substance user but also her unborn baby. Although pregnancy can act as a leading factor for pregnant women to seek addiction assistance, 5% still report substance misuse during pregnancy (National Institute on Drug Abuse, 2017; Patrick et al., 2012). Every hour of every day, a baby is born with Neonatal Abstinence Syndrome or NAS (Patrick et al., 2012). Although the 2012 study by Patrick et al. calculated 5.63 per 1000 pregnant women are diagnosed with opiate use/dependence at the time of delivery, this does not account for other substances like methamphetamines, benzodiazepines, cocaine, marijuana, and alcohol, which also cross the placenta and negatively affect the baby. The opioid crisis has severely affected

women of reproductive age (Logan et al., 2013), as females 15-25 have higher reported opioid misuse (Smith & Lipari, 2017). Opioids are the second most used substance in pregnancy following marijuana (Forray, 2016; Logan et al., 2013; McCabe & Arndt, 2012).

**Financial implications.** In 2009, the financial cost to care for babies with NAS, after adjusting for inflation, rose to \$720 million (Patrick et al., 2012). Medicaid is the primary payer as both mother and baby have a higher percentage of active Medicaid coverage (Jacobson et al., 1991; Patrick et al., 2012; Whiteman et al., 2014), which was 81% in 2012 (National Institute on Drug Abuse, 2017). The high financial costs for drug-exposed babies is due to lengthy hospital stays, roughly 16.3 days versus 3.3 days for non-exposed babies, and the need for intensive care services due to complications of NAS (Patrick et al. 2012). Drug-exposed babies may require several months in the NICU prior to discharge.

**Health implications.** The health concerns are not only for the growing baby but also for the mothers who have higher rates of HIV, Hepatitis B and C, and sexually transmitted infections (Chasnoff, Burns, & Burns, 1987; Stein, 2002). These risks are due to the type of drug use and to poor healthcare. These mothers are also more susceptible to sexual assault and violence (D'Apolito, 2014; Stein, 2002), as well as malnourishment, due to poor eating habits and limited access to appropriate nutrients (Little et al., 2005; Roberts & Pies, 2010; Whiteman et al., 2014). The aforementioned negative health implications affect both mother and baby and could lead to additional health crises during and after delivery for both individuals.

Unfortunately, only 11% of all individuals with addiction receive treatment at a specialty facility (NIDA, 2011). A barrier to treatment for the substance misuse lies in the difficulty of entering treatment programs due to high cost, lack of childcare, dual mental health and general medical diagnosis, and lack of services (Jackson & Shannon, 2011; Stein, 2002). Despite the development of the Affordable Care Act (ACA), which increased some state Medicaid coverage for substance misuse treatment, many states still do not offer comprehensive services (Boozang, Bachrach, & Detty, 2014). The Substance Abuse and Mental Health Services Administration (SAMHSA) offers state-funded services through block grants for pregnant women with substance misuse (Knopf, 2016). However, the demand for services far exceeds the available supply (Knopf, 2016). SAMHSA requested a 25% increase in funding from Congress for the 2017 fiscal year to help increase program availability for pregnant women (Knopf, 2016). However, with still such limited availability for individuals without a payer source, many individuals go without the needed care and ongoing support required in combating addiction. A vicious cycle of self-medicating often ensues, which continues drug dependence.



## **Chapter Two: Literature Review**

### **Neonatal Abstinence Syndrome (NAS)**

There are two forms of NAS: Iatrogenic NAS which is withdrawal caused by medical need (Patrick et al., 2012) and congenital NAS. Iatrogenic NAS can occur as a result of surgeries, heart complications, brain bleeds, necrotizing enterocolitis (NEC), etc. The medications are legally prescribed due to other medical concerns and Iatrogenic NAS becomes a byproduct. Iatrogenic NAS cases are not considered in this research as this research will focus on prenatal substance misuse. Congenital NAS is conceptually defined for this research as any adverse outcomes of intrauterine substance exposure of a baby (Atwell et al., 2016).

A baby exposed prenatally to illicit drugs may have different responses and varying levels of distress. To this end, a likely higher percentage of women are diagnosed with opioid dependence versus babies diagnosed with NAS (Patrick et al., 2012). NAS is a medical diagnosis, under ICD-10-CM P96.1, and requires the presence of certain symptoms before a diagnosis is made. The Finnegan Score, a tool used to capture NAS symptoms, is obtained to quantify the baby's level of drug exposure (Busenbark, 2016). If a baby is drug-exposed and does not show signs or symptoms, the baby will not be given a diagnosis of NAS. Thus, it is likely that the number of substance-exposed babies may be underreported.

Typically, NAS symptoms will manifest within three days post-delivery though, in some cases, the symptoms may not surface for seven days (Bhuvaneswar, Chang, Epstein, & Stern, 2008; Church, n.d.; Logan et al., 2013). However, prematurity may mask the signs of NAS as the baby will have developmental immaturity and standard

NAS scales are invalid with premature babies (Busenbark, 2016; Dryden, Young, Hepburn, & Mactier, 2009). Once symptoms present, the length of symptoms may last anywhere from one week to six months (Church, n.d.). The timeframe is dependent upon the baby's reaction to treatment, both pharmacological and non-pharmacological, as well as level or type of exposure. Babies exposed to polysubstance use generally have increased symptoms such as increased muscle tone, irritability, overall higher Finnegan Scores, and longer hospitalization (Dryden et al., 2009; Logan et al., 2013). To test for drug exposure the standard measures are urine, meconium, and hair; however, some hospitals use cord blood testing (Benke & Smith, 2013, Bhuvaneswar et al., 2008). Cord blood allows for collection of samples up to seven days after birth. The testing can also monitor for alcohol exposure. Drug testing is not necessarily mandated across states (Bhuvaneswar, et al., 2008). In Indiana, drug testing may be triggered by late presentation to prenatal care, infrequent prenatal care, delivery outside of the hospital/homebirth, and admission of drug use/history (Labor of Love Summit, n.d.). However, other states, like Ohio, participate in universal screening where all mothers are tested upon admission to the hospital (Newman, 2016). If a mother refuses to be tested, her newborn is automatically screened (Newman, 2016).

### **Health Complications**

Babies with prenatal drug exposure face a myriad of potential ramifications relating to their growth, behavior, cognitive functioning, language, and general achievement (Logan et al., 2013; Patrick et al., 2012; Stein, 2002). They also face an increased likelihood of their own substance misuse in adulthood (Church, n.d.). However, the effects can depend greatly on the type of drug exposure, the frequency of

maternal use, the gestational point of use, and environmental factors (Church, n.d.). The short-term effects are well-documented though long-term outcomes are difficult to document due to co-occurring factors like environment (Logan et al., 2013; Seattle Children's, n.d.). Such environmental factors include housing instability (Little et al., 2005), foster care, and mistrust of healthcare providers (Seattle Children's, n.d.).

**Opioid.** Types of drug exposure also affect the type of complications the mother and baby may experience. Opioid use, including methadone and heroin, often require pharmacological assistance to treat the withdrawal symptoms for both the mother and baby as detoxification can be lethal (Stein, 2002; Sun, 2004). The mother is at-risk for placenta abruption, which is when the placenta detaches from the uterus; eclampsia or extreme high blood pressure; sexually transmitted infection; preterm labor/delivery; and Hepatitis A, B, and C (Little et al., 2005; Sun, 2004). All of these maternal health complications can affect the baby. The symptoms of opioid use in a baby, which can last from a few days to weeks, include hypertonia or muscles appearing stiff or rigid, irritability and being difficult to console, sneezing, excessive sucking or poor sucking ability which leads to poor feeding, and an intense high-pitched cry (Hudak & Tan, 2012; Lester, Tronick, & Seifer, 2002). On average, opioid-exposed babies have physical effects like lower birth weight and length and smaller head circumference (Logan et al., 2013). Opioid use also can lead to premature birth which incorporates a host of additional complications. Babies who are born premature due to opioid exposure may have apnea and increased susceptibility for Sudden Infant Death Syndrome (SIDS) (Chasnoff et al., 1987). Long-term effects, while difficult to quantify, include poor cognitive, perceptual, and memory skills (Seattle Children's, n.d.)

**Methadone.** Methadone is an opiate replacement therapy used to help manage withdrawal from opioids (Alaadini, Haddadi, & Asadian, 2017; Bhuvaneswar et al., 2008; Dryden et al., 2009; Logan et al., 2013). Methadone does cross into the placenta which will lead to withdrawal similar to opioid use (Logan et al., 2013). However, when methadone is administered as an opiate replacement therapy, it is in a controlled environment. Withdrawal from opiates can cause fetal death (Logan et al., 2013; Sun, 2004). Thus, women seeking assistance during pregnancy for opioid addiction may be placed on methadone (Logan et al., 2013; Prasad, 2014; Sun, 2004). Methadone withdrawal has similar effects on the baby as stated above with long-term effects noted of lower IQ scores; poor coordination; hyperactivity; and poor memory, verbal, and perceptual skills (Church, n.d.; Seattle Children's, n.d.)

Similar to methadone is buprenorphine. Buprenorphine also acts as an opiate replacement though it allows for the women to self-administer the dose and decreases the need for daily outpatient visits to methadone clinics (Patrick et al., 2013). Buprenorphine, also known as Suboxone and Subutex, lessens the financial burden for the healthcare industry as daily visits are not necessary (Patrick et al., 2013). Though harm reduction allows for greater mother and baby well-being (Stein, 2002), there is limited data to determine the long-term effects of opiate replacement therapies (Church, n.d.; Logan et al., 2013). Buprenorphine is not without risk and has been linked to increased hyperactivity, poor memory function, and NAS (Seattle Children's, n.d.; Stein, 2002). Treatment programs such as methadone and buprenorphine also cause NAS and potential long-term problems, though such programs may increase lifestyle stability,

decrease potential intrauterine growth restriction, prematurity, and decrease maternal and fetal mortality (Dryden et al., 2009; Prasad, 2014; Stein, 2002; Worley, 2014).

**Cocaine.** Cocaine use during pregnancy is linked to increased incidence of vascular accidents, Intra Uterine Growth Restriction (IUGR), maternal hemorrhage, central nervous system infarction, and placenta abruption (Chasnoff, et al., 1987; Stein, 2002). After the birth, behavioral and language abnormalities can occur (Church, n.d.). Studies indicate that babies prenatally exposed to cocaine have a higher rate of SIDS (Chasnoff et al., 1987).

**Alcohol.** Alcohol use has shown drastic negative effects on behavior, cognition, language, and achievement of prenatally-exposed babies (Church, n.d.). Fetal alcohol syndrome includes craniofacial abnormalities and neurodevelopment delays (Logan et al., 2013; Stein, 2002). Mental retardation can also occur (Stein, 2002). Approximately 10-20% of childhood mental retardation is caused by prenatal alcohol exposure (Stein, 2002).

**Marijuana.** Marijuana is the leading type of prenatal drug exposure (Forray, 2016; Logan et al., 2013; McCabe & Arndt, 2012), with approximately 1 in 25 women self-reporting marijuana use during pregnancy (Ko et al., 2015). The actual use of marijuana and general drug misuse during pregnancy may be higher due to limitations in recall and patient answer bias (Benhke & Smith, 2013; Garg et al., 2016). Marijuana has been adversely linked to behavioral, cognitive, and achievement delays (Church, n.d.). The growing legalization of marijuana may impact the already high use of marijuana in pregnancy.

## **Long-Term Health Implications**

The long-term effects of drug-exposure for babies are difficult to measure as babies who experience NAS often also experience environmental factors that negatively affect their development. Drug-exposed babies have higher instances of foster care, family instability, and chronic family stress (Seattle Children's, n.d.). The families often have a mistrust of the healthcare system which may deter parents from participating in programs for their baby, again adversely affecting development (Seattle Children's, n.d.). The relationship between providers and mothers influences the success of follow-up care, trust, and early intervention (Howell & Chasnoff, 1999).

## **Treatment Options**

The treatment necessary for a baby experiencing NAS can be affected by maternal polysubstance misuse, gestational age at delivery, genetic factors, maternal breastfeeding, and caregiver involvement such as rooming-in (Logan et al., 2013; McQueen & Murphy-Oikonen, 2016). The two overall types of treatment are pharmacological and non-pharmacological. If a baby requires pharmacological treatment, he/she will receive non-pharmacological treatment as well. However, some babies are able to be treated solely with non-pharmacological approaches like swaddling and a quiet, low stimulus environment (McQueen & Murphy-Oikonen, 2016). Unfortunately, 50-70% of babies experiencing NAS will require some form of pharmacological intervention (Logan et al., 2013).

**Pharmacological support.** The Finnegan score assesses for NAS. If a baby scores high on the measure, pharmacological substances like morphine are administered to combat physical withdrawal symptoms (Busenbark, 2016). The Finnegan Score

measures withdrawal by severity of the central nervous system disturbances: muscle tone, convulsions, tremors, moro reflex, sleep, and excoriation; metabolic vasomotor/respiratory disturbance: sweating, hyperthermia, mottling, yawning, sneezing, respiratory rate, nasal flaring, and nasal sucking; and gastrointestinal dysfunction: excessive sucking, poor feeding, regurgitation, and loose/watery stool (Western Australian Centre for Evidence Based Nursing & Midwifery, 2007). Scoring is completed two hours after birth and then in four-hour intervals (Western Australian Centre for Evidence Based Nursing & Midwifery, 2007). If a baby receives two consecutive scores above 7, pharmacological protocol is generally initiated (Logan et al., 2013). An important distinction is that the test is designed for full-term babies. Thus, it can be difficult to quantify NAS in preterm babies born at less than 35 weeks (Goetz, n.d.; Western Australian Centre for Evidence Based Nursing & Midwifery, 2007). Preterm babies often have a more moderate reaction to drug withdrawal, potentially due to less time of drug exposure, limited fat stores, and/or the current ability for staff to adequately quantify a preterm baby's withdrawal (Goetz, n.d.).

**Non-pharmacological support.** Imagine experiencing the worst health condition and being forced to lie alone with bright lights and noises ranging from monitor beeps, babies crying, and people talking. Those are just a few of the effects from NAS and medication cannot solve all the discomforts. Non-pharmacological treatments for babies experiencing NAS may include such modalities as: a low stress, quiet environment; skin-to-skin contact; baby massage; dietary changes; and encouragement of breast feeding (Busenbark, 2016; Church, n.d; Dryden et al., 2009). Babies experiencing NAS often have extreme irritability and poor sleep patterns. A low stimulus environment allows the

baby to process through NAS easier (McQueen & Murphy-Oikonen, 2016).

Additionally, skin-to-skin contact creates a two-fold benefit. The baby is able to be comforted and the parent can begin the bonding process while learning the individual needs of the baby (Church, n.d.). The hospital staff can then assist the mother in recognizing the baby's irritability as a sign of withdrawal rather than the baby rebuffing the mother (Sun, 2004). Some hospitals allow for parental rooming in, which affords the parent to have time to bond, interact, and become more fully engaged while the baby receives consistent, soothing care (Busenbark, 2016). Every parent reacts differently to their baby's withdrawal symptoms. Some parents may feel comfortable reaching out to staff for support, others may quietly hide their fear or frustrations, and some may have little to no visitation. By healthcare providers encouraging visitation, teaching skills, and allowing the parent to parent, increased bonding and comprehension of the baby's medical needs can occur.

**Parental support.** Beyond the direct care of the baby, parental support is a leading tool to increase positive outcomes for drug exposed infants (Seattle Children's, nd.), both in the short- and long-term. It is important for healthcare providers to recognize pregnancy can act as a trigger to increase substance misuse and exacerbate existing problems (Crawford, Sias, & Goodwin, 2015). Ideally, women with substance misuse will be followed by a core group of healthcare providers with community workers available postpartum (Marangoni & Felix de Oliveria, 2015; Stein, 2002). Once the woman is ready for delivery, however, staff often changes in the inpatient setting and continuity of care decreases (Stein, 2002). Having to rehash the story of one's drug use in a new setting may hinder the progress previously made (Stein, 2002). The importance



of continuity of care includes not only direct medical staff, but ancillary staff as well. If the baby is admitted to the Neonatal Intensive Care Unit (NICU), a separate group of providers are often assigned to the baby. If this is a positive interaction, there may be the potential for continued support. However, if the mother is met with judgment, anger, or dismissiveness, the mother's progress may be negatively impacted and contribute to worse outcomes for the baby. The mother will likely be taking the baby home so it is of utmost importance for the mother to visit regularly. If the mother does not feel welcome or accepted, she will likely have a poor visitation pattern.

New mothers who misuse substances often have increased shame and guilt after the baby is born, as they are able to now witness what has occurred to the baby because of their actions (Stein, 2002). Parental emotional support and encouragement of mother/baby interaction is imperative (Stein, 2002), as women with drug misuse have higher rates of psychiatric disease, including depression and anxiety (Benningfield et al., 2010). If the mother does not have positive bonding with the baby, this can result in added psychosocial stressors including depression, frustration, guilt, and increased drug use (De Bortoli, Coles, & Dolan, 2014; Stein, 2002).

Drug-exposed babies are far more irritable than the typical newborn (Chasnoff, Burns, & Burns, 1987). Babies with increased irritability are difficult to soothe and lose important caregiver attention/affection due to these behaviors (Chasnoff et al., 1987). This causes a devastating cycle of isolation and poor bonding for both parties. The baby's safety is at risk if he/she is discharged to a home where there is little to no bonding or the parent is in a state of crisis. As such, the incidence of abuse/neglect is tripled in the presence of a drug-misusing parent (Seattle Children's, n.d).

**Department of Child Services.** For a baby with prenatal drug-exposure, the hospital social worker will file a Child Protective Services report with the Indiana Department of Child Services if positive drug screens were present during prenatal care or upon admission to the hospital; the baby's urine, meconium, or cord blood are positive for drugs; the baby exhibits withdrawal symptoms; and/or the mother self-discloses drug use. The specific number of reports made each year to the Indiana Department of Child Services for prenatal substance exposure was not publicly available. Indiana DCS defines neglect from prenatal drug-exposures as when an "infant is born drug-exposed, as indicated by a positive toxicology screen for scheduled drugs or alcohol, symptoms of withdrawal, mother's admission of recent drug use, or other indicators as determined by medical personnel" (Children's Research Center, 2012, p. 8). The Department of Child Services then decides the course of action, which may include such options as out-of-home placement or in-home services.

Healthcare providers have a unique opportunity to change the trajectory of a woman's life as pregnancy is a prime motivator for treatment or, at a minimum, connecting and building trust within the medical field (Crawford et al., 2015; Marangoni & Felix de Olivera, 2015; Stein, 2002). Pregnant women, despite drug use, more than likely will seek healthcare services, even if it is solely for delivery (Stein, 2002). This allows healthcare providers to at least start the process of drug treatment, support, or education (Marangoni & Felix de Olivera, 2015; Stein, 2002). Staff also must support women post-partum as care should not end at delivery (Stein, 2002). However, women with Indiana Pregnancy Medicaid often lose their insurance 6 weeks postpartum. If a woman misses her perinatal follow-up appointment, she may not be able to reschedule

due to loss of insurance, thus, decreasing the availability of needed support. This can be quite detrimental to a mother experiencing not only substance misuse but also post-partum depression. Substance misuse and depression are closely linked and healthcare providers must be aware of the added psychosocial stressor and potential of increased drug and alcohol use when suffering from post-partum depression (Chapman & Wu, 2013).

### **Barriers to Care**

Women with prenatal drug misuse attend fewer prenatal visits than non-drug misusing women (Little et al, 2005; Whiteman, 2014). The lack of prenatal care among pregnant women who use drugs is multifaceted. Women are generally aware of the harmful effects of prenatal drug use, but fear can delay the individual in seeking treatment and care (Roberts & Pies, 2010; Stone, 2015). Roberts and Pies (2010) used focus groups and interviews of women with either current prenatal substance misuse or a history of misuse. The interviews yielded a better understanding of the needs and barriers to prenatal care. Such barriers to prenatal care include limited access to health insurance, poor transportation, homelessness, feelings that healthcare workers do not support or listen to their needs, and fear of Child Protective Services (CPS) involvement (Marangoni & Felix de Oliveria, 2015; Roberts & Pies, 2010). Stone's (2015) qualitative study of 30 women with current prenatal drug and alcohol misuse produced results similar to Roberts and Pies (2010) study, though a greater focus on legal implications were noted by the women. Consequently, the fear of criminal prosecution acts as a deterrent for prenatal care as women avoid necessary healthcare in hopes of avoiding criminal sanctions (Stone, 2015). Marangoni and Felix de Oliveria's (2015) exploratory

study of 32 hospital case files of prenatal misusing women echoed the results of the studies by Roberts and Pies (2010) and Stone (2015). Women were less likely to adhere to prenatal care due to poor socio-economic status, support, and general fear (Marangoni & Felix de Oliveria, 2015). Howell and Chasnoff (1999) noted in the findings from their focus group, which included both women who misuse substances and their providers, that childcare, fear, limited resource availability, negative provider interactions, and poor home life complicates sufficient prenatal care. Additionally, drug misuse itself is a barrier to prenatal care (Roberts & Pies, 2010). Women report that the act of using can be a greater priority over prenatal care (Roberts & Pies, 2010). Being intoxicated can also affect women's judgment. For some, increased or continued drug misuse occurs to mask the feelings of guilt. These reactions often lead to decreased prenatal care (Roberts & Pies, 2010).

**Insurance.** Pregnancy Medicaid is available to those without insurance and who meet the financial requirements. However, completing the paperwork and obtaining the necessary documents can be difficult and confusing. Homelessness is highly correlated with substance misuse (Folsom et al., 2005); thus, the woman may not have a permanent address to obtain documents (Roberts & Pies, 2010). Many providers require proof of insurance before scheduling appointments.

**Transportation.** Limited transportation is noted as a barrier to prenatal care (Crawford, Sias, & Goodwin, 2015). Although some state Medicaid programs do offer transportation assistance to medical appointments, the individual must first have active Medicaid and make the appointment three days in advance. There is also not a guarantee that transportation services will be available for the needed time. Women may have to

wait for several hours after the scheduled appointment for pick-up and arrive hours early. The individuals must also have a working phone to schedule the appointments. Many resources are now solely online so if an individual does not have access to the Internet, it becomes increasingly difficult to reach providers and support (Roberts & Pies, 2010).

**Emotional.** Guilt and fear can also be major barriers to receiving prenatal care (Roberts & Pies, 2010; Sun, 2004). Emotionally, women may shut-down and avoid recognizing the pregnancy or become overwhelmed with the process of obtaining care and again avoid seeking help (Roberts & Pies, 2010). Some become isolated (D'Apolito, 2014) as informing their family or healthcare provider of the pregnancy along with their substance misuse may increase fear of rejection (Roberts & Pies, 2010) or prosecution (Stone, 2015). If the woman's partner is also abusing substances, the woman can be forced to choose between her perceived support group and abstinence. This can be isolating if the woman chooses to abstain from drug use or can act as a deterrent to prenatal care if the partner is not supportive of treatment (Crawford et al., 2015). Additionally, there are high levels of negative self-image and paranoia with the belief that everyone knows they are misusing substances. Such thoughts act as a deterrent to seeking care and, when mixed with limited social support, the opportunity for prenatal care greatly diminishes (Roberts & Pies, 2010; Sun, 2004).

Women who are using illicit substances and who attend prenatal check-ups want to support their baby as best they can despite the drug use (Roberts & Pies, 2010; Stone, 2015). Prenatal care, in part, helps to mitigate the effects of the drug use and decrease guilt and anxiety (Roberts & Pies, 2010; Stone, 2015). Poor prenatal care not only decreases the opportunity to support women with maternal/fetal medicine but also

decreases services for addiction, mental health, and general health (Prasad, 2014; Roberts & Pies, 2010). Support to help increase prenatal care would include improving the Medicaid application process, increasing providers' willingness to accept patients in their third trimester, explaining CPS involvement and ways mothers can improve their outcomes, and explaining steps needed to help enhance the health of the exposed baby (Roberts & Pies, 2010). Low self-esteem is also a common characteristic among women misusing substances, though positive support from providers can assist in improving a person's self-image (Bowie, 2005; Prasad, 2014; Sun, 2004). Thus, lack of prenatal care is likely not because the person does not care about the baby, but because access to resources is complex and because fear and guilt are powerful.

### **Implications for Service Providers**

Working with women who misuse substances during pregnancy can be challenging, thus, providers must be educated about best practices for working with individuals with drug addiction and their children (Butler, Saunders, & Saunders, 2001; Stein, 2002; Worley, 2014). Such difficulties for the provider may entail ethical concerns when mothers are non-compliant with the treatment plan thus increasing potential harm to the baby (Stein, 2002). The complexities of substance misuse are more complicated than simple self-indulgence and lack of self-control (Crawford, et al., 2015; Stein, 2002; Whiteman, et al.; 2014). However, negative feelings can manifest in healthcare providers when they observe a struggling baby and presumed drug-seeking behaviors of the mother. Bowie's (2005) study determined abstinence as the main predictor of a mother's ability to successfully parent; however, 40-60% of individuals will relapse (NIDA, 2011). Witnessing a parent relapse can be frustrating, devastating, and anger provoking.

Providers may feel inadequate as they cannot change a person's behavior and may become emotionally exhausted (Stein, 2002). Recognizing that the drug addiction is relentless and relapse may occur is important (D'Apolito, 2014; Stein, 2002). Changing the mindset from addiction as a crime to addiction as a disease may also help providers see the substance misuser as a person with a health condition rather than a junkie selfishly harming her baby.

Such tools as ultrasounds during the prenatal stage can improve the bonding between mother and baby (Stein, 2002). This allows mothers to see their baby. By putting a "face" to the baby, it allows the mother to feel more connected and recognize the baby is real. Whether the mother is using substances, ultrasounds have a way to make the pregnancy become more real. Additionally, building rapport with the woman helps to gain trust and ultimately improves providers' ability to help her (Crawford et al., 2015). Healthcare workers need to continually reassess substance use as the relationship builds because the mother may become more open over time to discussing concerns (Prasad, 2014; Stein, 2002). The focus should be about assistance and support, instead of catching them abusing substances. For example, stigma often lingers for women enrolled in methadone and buprenorphine programs (Stein, 2002; Stone, 2015). In reality, such enrollment should be praised and supported as the mother is taking steps towards her own health as well as that of her baby (Stein, 2002).

Although a provider may be putting forth effort to include the parent, the provider may become frustrated or lose empathy for the mother (Stein, 2002). Such feelings only serve to isolate the woman and negatively affect outcomes (D'Apolito, 2014; Stein, 2002). Some women report that they would encourage other women not to tell their

healthcare providers about their drug use (Howell & Chasnoff, 1999; Stone, 2015). However, healthcare workers who offer empathetic and honest care to women have the opportunity to provide meaningful care prenatally, at delivery, and post-partum (Stein, 2002). By effectively assessing women and their needs, providers can gain greater understanding and offer appropriate assistance (Prasad, 2014; Stein, 2002). What a provider believes is the problem (i.e., drug use) may not actually be the greatest concern for the mother (Stein, 2002). However, working with the mother to assist in meeting her greatest needs will indirectly assist with decreasing drug use (Stein, 2002). For example, a woman may be more concerned with her living situation than with her drug use. If housing can be improved, she can then work towards new goals, potentially sobriety (Stein, 2002). The goals must be the goals of the individual, not the provider. By bringing the mother into her own treatment plan and allowing her to have a voice, a more collective and successful plan can be developed (Crawford et al., 2015; Stone, 2015). Each individual has unique strengths and weaknesses, and by capitalizing on the individual's assets, a structured and personal plan can lead to greater success.

Providers are challenged to provide care and support to both the mother and baby. Undoubtedly, this can be a troublesome and stressful work experience. Not only is it difficult to witness the struggles of the baby, but internally, the professionals themselves may struggle if they are facing such things as infertility and child loss. Transference can occur, despite the most professional care provider. Employer/employee supervision is necessary to provide support and decrease potential negative influences of provider bias/stigma. However, simply offering supervision is not adequate as supervision is only beneficial if the recipient views the supervisor as supportive (Frimpong, Hellerringer,



Awoonor-Williams, Yeji, & Phillips, 2011). Understanding the ethical and emotional challenges is imperative for supportive practice.

When a provider witnesses the harmful effect of NAS and believes the mother does not care for the baby due to substance misuse during her pregnancy, it can become a hasty generalization leading to the assumption that women who misuse during pregnancy are morally repugnant and not worthy of their baby. False generalizations and assumptions occur when one relies on anecdotal stories alone (Church, n.d.). Butler et al. (2001) administered a survey to 115 different educational institutions regarding curricula for providers who work with prenatal substance misuse. The study revealed that while all educational systems expressed the need for continuing education, only 33% of physician programs, 29% of nursing programs, and 14% of social work programs offered any form of continuing education within the area of prenatal substance misuse (Butler et al., 2001). Provider training and education can potentially help providers both cope and offer best practices for a vulnerable population. Women are not only hosts for a baby. This type of thinking leads providers to only consider the needs of the baby and potentially vilify and lose prime access to assisting the mother (Stein, 2002).

### **Legal Precedents**

During the 1980s, the medical community witnessed a stark increase in crack cocaine use among pregnant women. Consequently, many states enacted laws requiring women to be referred to child service departments as perpetrators of child abuse (Benke & Smith, 2013). Substance misuse during pregnancy was then categorized as criminal (Crawford et al., 2015). Public Law 108-36, Keeping Children and Families Safe Act, was enacted in 2003, requiring hospital officials to contact their local child welfare

agency should intrauterine drug exposure be detected (Benke, & Smith, 2013). However, such measures did little to curb addiction and the number of drug-exposed babies. By default, it likely helped ignite the thought process towards criminalization versus disease, as evidence by the “War on Drugs” propaganda. However, by late 2000, changes in societal perceptions of addiction began to take hold. Changing the jargon from “War” to “public health issue” is an attempt to decriminalize addiction (Lemaitre, 2011) and focus more on the disease of addiction. A blow to the public health issue belief occurred when Tennessee enacted SB2532. This controversial bill allows for legal prosecution of women who use illicit substances during pregnancy, if linked to harm to the baby (Lollar, 2017). However, research has shown that such a law is detrimental to both mother and baby as seeking prenatal care is greatly diminished with an increase of home-births as a result of fear of prosecution (Burke, 2016; Church, n.d.; Lollar, 2017). The medical community has staunchly opposed the bill, which was passed into law in 2014 (Burke, 2016). The law required individuals to secure treatment when there was no treatment available. In short, the women were penalized for matters beyond the initial use. However, due to the negative ramifications of the bill, it was suspended in 2016 (Burke, 2016; Lollar, 2017).

By 2015, a bipartisan Congress approved the “Protecting Our Infants Act of 2015.” The Act aims to increase evidence-based practices for the care of mothers and their babies exposed to opioids (Botticelli, 2015). The Department of Health and Human Services is championed with the role to study and recommend both treatment and prevention programs for opioid dependence (Botticelli, 2015). With the relatively new act and President Trump’s acknowledgement of the opioid crisis, it is likely that new

models for treatment may soon be available. It is promising that the focus on prenatal substance misuse is gaining greater attention with a potential narrative of a health crisis over criminality. Additionally, with recent state legalization of marijuana and noting marijuana is the leading substance used in pregnancy, the manifestation of the addiction and provider reaction is yet to be understood. For example, prenatal use of marijuana may be seen as less egregious given the recent push for legalization, with eight states and the District of Columbia decriminalizing recreational marijuana use by 2018 (Robinson, 2017).

Currently, prenatal substance misuse triggers a referral to Child Protective Services (CPS) (Chasnoff, Landress, & Barrett, 1990). Within the United States, each state has discretion on mandates for testing for prenatal drug use though federal laws require states to have an established reporting protocol (Benke & Smith, 2013). In Indiana, hospital staff report prenatal substance misuse to CPS. However, the extent of involvement is dependent upon the type of drug, history of use, home environment, and compliance with CPS. In Indiana, CPS determines the level of involvement necessary, ranging from unsubstantiated (closing the referral), informal adjustment (IA), to a designation of Child in Need of Services (CHINS) (Indiana Department of Child Services, 2017). A CHINS classification can lead to the baby being placed in foster care, with relative placement, or in-home placement while still a ward of the state. There are also variations by county and state (Stone, 2015).

Providers may still struggle with addiction as a health crisis as they must witness the devastating effects on babies. It can be difficult for healthcare providers to recognize

the services in place for child protection due to confidentiality and due to the inability of NICU staff to witness the follow-up actions of child services.

### **Theoretical Underpinnings for Addiction and Causes of Structural Stigma**

The first thoughts of illicit drug use may stir images of needles in alleyways or haphazard living conditions with pill bottles scattered about. However, 70% of women with a drug-exposed baby received their first opioid from a medical provider (Winchester, 2012). Often the drug use then spiraled into addiction. There is not a shortage of theories surrounding the causes of addiction. However, three positions that starkly contrast with each other are the Moral Model of Addiction, the Disease Model, and the Learning Model of Addiction. These three models will be explored as the underpinnings of each model funnel into the concepts of stigma and more specifically, structural stigma.

**Moral model.** The Moral Model of Addiction focuses on the individual's weakness and subsequent character flaws (Lawrence, Rasinski, Yoon, & Curlin, 2013; Ngo, n.d.; NIDA, 2014a; Schaler, 1991). Drug addiction is viewed as caused by the person's own poor choices and lack of willpower (NIDA, 2014b; Schaler, 1991). Religious entities were viewed as the expert in addictions; thus, religion became the driving force of the evolution of the Moral Model of Addiction (Ngo, n.d.). Individuals who became addicts were seen as vile people with no moral compass (Ngo, n.d.; Schaler, 1991). Such thinking led to a punishment focus as the individual made bad decisions (Ngo, n.d.). The War on Drugs, which criminalized drug use over rehabilitation and promoted long prison sentences, is a prime example of our society's global views of addiction (Lemaitre, 2011; Ngo, n.d.). The moral model has been able to be sustained

because of its appeal to our common sense (Ngo, n.d). Such statements as “we have free will, anyone could ‘just say no’...they are making a poor choice” led to the belief that drug use is born out of bad decision-making and inept moral positioning. However, this simplistic view of drug use fails to explain the sociological and physiological effects of drug use (Lawrence, et al., 2013; Ngo, n.d).

Over time, the Moral Model theory lost support (Lawrence, et al., 2013; Ngo, n.d.) as medical clinicians began to examine addiction and the community shifted to viewing medical professionals as the expert (Ngo, n.d). Although the Moral Model of Addiction may have lost general support, one could argue that it is still alive and well in the day-to-day thinking of the community. For example, in the NICU setting, it is not uncommon to hear such statements as: “Why wouldn’t she just stop using when she is pregnant?” or “So now she cares about her baby? Why didn’t she care when she was pregnant and stop using drugs?” Additionally, in Lawrence et al.’s (2013) quantitative study of physician beliefs regarding addiction, 14% reported the cause of addiction stemmed from a moral failing. The Moral Model may not be openly promoted today, but it still appeals to the common core of many individuals, including healthcare workers. With healthcare workers and the community operating under the belief that drug use is pleasure-seeking, a punitive and criminal approach takes effect (Stein, 2002). However, punitive approaches lead women to avoid prenatal care, withhold medical information, and isolate themselves out of fear (Lollar, 2017; Stone, 2015), often putting babies at further risk.

**Disease model.** The Moral Model of Addiction examines the moral compass of the individual; conversely, the Disease Model of addiction views addiction as a medical

condition, a defect of the brain (Horvath, Mizrah, & Epner, n.d.; Ngo, n.d.; Schaler, 1991). Drug use alters the brain, thus, causing the individual to crave the drug and continue the destructive cycle. The disease model argues that there are no cures for substance addiction, only recovery (Horvath, et al., n.d.; Ngo, n.d.). Recovery occurs when the individual is able to abstain from use and actions leading to the use (Horvath et al., n.d.; Schaler, 1991). This causes the disease or addiction to become dormant thus hindering the progression of the disease (Horvath, et al, n.d.). Support groups and peer support are viewed as the leading resources for continued healing and sobriety (Horvath et al., n.d.; Ngo, n.d). However, critics of the Disease Model protest that such thinking leads to a lack of ownership and personal responsibility (Lawrence et al., 2013; Ngo, n.d.; Schaler, 1991). Additionally, beliefs that there is no cure and that drug addiction is not their fault may lead the individual to not seek treatment or believe that the behavior cannot be changed (Ngo, n.d.). Like the Moral Model, the Disease Model is also present in the NICU. When babies are drug-exposed, it is treated as a disease and has been labeled Neonatal Abstinence Syndrome. The babies are treated with medication, feeding assistance, as well as neurological and developmental follow-up. The babies are not considered to have a morally lost compass because they are withdrawing from opioids, cocaine, methamphetamine, etc.

**Learning model.** Like the Moral Model, the Disease Model lacks insight into the key factors leading to addiction. The Learning Model of Addiction, however, takes into account the environmental factors leading to addiction (Ngo, n.d.; Schaler, 1991). Such factors include self-medication due to mental health needs, family addiction, poor social and psychological influences, and poor coping mechanisms (Ngo, n.d.). An individual

may turn to drug use to help escape a negative situation like domestic/physical/sexual abuse but then the drug use spirals into additional social stressors (poor housing, lack of employment). Poor mental health can be a precursor to drug and alcohol misuse as individuals use substances for self-medication (NIDA, 2014a; Stein, 2002). Parents may explain their drug use to NICU staff as being due to a lack of access to anti-anxiety medication and so they self-medicate using marijuana. Or, they may take Adderall (an amphetamine) to help them focus and remain in control. Additionally, women who use illicit substances have higher incidence of childhood sexual abuse and family history of substance misuse (Stein, 2002). Although intellectually appealing, this model does not account for the role drugs play in altering the brain. The initial cause for use can morph into a physical addiction (Stein, 2002; Winchester, 2012). The individual continues to use to offset withdrawal and escape painful feelings (Ngo, n.d.; Stein, 2002). In short, the drug becomes less pleasurable and more necessary to cope with daily life (Stein, 2002). Although such history does not excuse the behavior, it can explain the behavior and help to explain why substances were used during pregnancy despite the individual being aware of the negative ramifications for the baby. One's identity becomes that of drugs. Consider that in rehabilitation programs, often the first words when addressing the group are: "I am \_\_\_\_ and I am a/an drug addict/alcoholic." The lifestyle can become ingrained and an individual may not be able to envision an alternative.

### **Understanding Stigma**

These three models, while broad and varying in their context, individually offer an incomplete explanation of drug use and may inadvertently lead to health disparities. This research proposes that structural stigma may occur in the healthcare setting,

specifically in the pre and perinatal environment. Such attitudes of healthcare providers may be affected by the above models, of which they may not be cognizant. Thus, provider beliefs regarding drug use may lead to stigma. Stigma can affect all areas of an individual's life, including housing, employment, and relationships (Livingston et al., 2012).

Health disparities are largely exacerbated by stigma which leads to a lack of resources, poor social relationships, negative psychological and behavioral responses, and increased stress (Hatzenbuehler, Phelan, & Link, 2013). Stigma encompasses a broad range of factors including, but not limited to, race, ethnicity, disabilities, HIV status, sexual orientation, mental health, obesity, and drug use (Hatzenbuehler, et al., 2013). Leading stigmatized health conditions include substance use disorders (Livingston et al., 2012). However, when substance use disorder co-occurs with pregnancy, the potential for stigmatization increases (Sun, 2004). Studies have shown that women self-report lower levels of drug and alcohol use during pregnancy (Jacobson et al., 1991). This may largely be in part due to stigma associated with use during pregnancy and fear of healthcare worker's judgment (Jacobson et al., 1991). The healthcare needs of the individuals may be negatively affected if they believe they cannot be honest with their healthcare provider. Research has shown that the stigma of prenatal drug use acts as a deterrent for prenatal healthcare (Crawford et al., 2015; Stone, 2015). Stigma also includes all labeling and stereotyping (Hatzenbuehler et al., 2013). Stigma leads to isolation due to fear of provider reaction and rejection (Hatzenbuehler et al., 2013; Marangoni & Felix de Oliveria, 2015), which may lead to poor maternal and fetal care, poor hospital visitation, or lack of attentiveness in the NICU.



Stigma occurs for varying reasons. Link and Hatzenbuehler (2016) identified three contributory factors leading to stigma, namely: “keeping people down,” “keeping people in,” and “keeping people away” (pp. 656-657). “Keeping people down” is attributed to the mindset that one group must be superior. If one group is able to be oppressed then that ensures the power/status of the remaining group (Link & Hatzenbuehler, 2016). Conversely, “keeping people in” helps to enforce social norms thus keeping social order (Link & Hatzenbuehler, 2016). Lastly, “keeping people away” is not allowing the affected individual near. This is not only the physical disease (coughing, sneezing, etc.) but the internal disease of addiction (Link & Hatzenbuehler, 2016). The three factors are not mutually exclusive (Link & Hatzenbuehler, 2016). All three or any combination likely plays a role in the manifestation of stigma within a healthcare setting.

Within the healthcare field, structural stigma is well-documented in the HIV/AIDS population (Pescocolido & Martin, 2015). According to Stringer et al.’s (2016) quantitative study on stigma towards the HIV/AIDS population among health professionals, increased structural stigma occurs when employees do not feel that policies are enforced to ensure safety, education is not provided, and healthcare worker’s access to safety supplies is limited. The “keeping people away” factor may then arise as healthcare workers do not feel safe and thus react negatively. Additionally, such examples in a healthcare setting may include the drug misusing mother not being encouraged to visit or participate in the care of her baby because of fear from healthcare providers that she may be under the influence, despite a lack of evidence of current drug misuse. This may contribute to “keeping people away” as she is considered an unfit

caregiver. In an effort to maintain social order, the staff may continue to place blame on the parent and become highly critical of her. Because the mother is viewed as the abuser, the staff may see themselves as the baby's protector and the best one to care for the baby.

**Varying types of stigma.** There are varying types of stigma: self, social, and structural (Livingston et al., 2012). Self-stigma can be conceptualized as negative thoughts and feelings regarding one's self, acceptance of one's stereotypes due to past experience, and the expectation of negative attitude/reactions of others due to status or health condition (Livingston & Boyd, 2010). Self-stigma can lead to self-destructive behaviors and may contribute to poor health outcomes (Hatzenbuehler et al., 2013). A vicious cycle ensues; individuals believe the negative attributes that are assigned which causes continued maladaptive emotional coping strategies (Hatzenbuehler et al., 2013), leading to a self-fulfilling prophecy thereby giving credence to the stigmatizer's beliefs. Social stigma occurs when a large group engages in stereotyping and negative actions against an already stigmatized group (Corrigan, Kerr, & Knudsen, 2005). The individuals do not fit the social norm of society and are thus excluded (Overton & Medina, 2008). For individuals with drug misuse, their actions toward sobriety may not be seen as genuine as they have been rendered a "drug abuser" and morally flawed. Lastly, structural stigma includes public institutions with agents that promote negative actions and attitudes towards a group (Corrigan et. al, 2005; Corrigan, Watson, Heyman et al., 2005; Link & Hatzenbuehler, 2016). This type of stigma suppresses opportunities for the stigmatized group, promotes a loss of status, labeling, discrimination, and stereotyping (Corrigan et al., 2005; Corrigan et al., 2005; Link & Hatzenbuehler, 2016). Structural stigma largely follows an "us versus them" narrative.

**Structural stigma.** Structural stigma broadly encompasses the policies and the culture within an institution. Structural stigma may occur both directly and indirectly causing the stigmatized group to not be able to fully experience all resources (Corrigan, Markowitz, & Watson, 2004; Corrigan et al., 2005). An example of indirect occurrence includes staff reluctance to include the post-partum mother in the day-to-day care of her newborn experiencing NAS. Additionally, substances that are viewed as more egregious, like heroin or cocaine, lead to policy (both formal and informal) implications that criminalize the behavior, which thus perpetuate the stigmas (Ahern, Stuber, & Galea, 2007). Substance use disorders are also linked to structural stigma as, overwhelmingly, people with such disorders are viewed as having the ability to stop the drug use and such actions to not do so are thought to demonstrate their negative moral compass (Corrigan, Kuwabara, & O'Shaughnessy, 2009), circling back to the Moral Model of Addiction. Ahern et al.'s (2007) quantitative study, which included more than 1,000 individuals currently misusing substances, reports that nearly 77% of respondents feel that people believe they are a bad person because of their drug use. Additionally, 24% of respondents felt that they were unable to receive needed medical care due to their drug addiction (Ahern et al., 2007).

***Fundamental Cause Theory.*** Within the stigma field, several additional theories surface. Fundamental Cause Theory examines not only the socio-economic factors but also the access to knowledge, money, power, prestige, beneficial social connections, health inequalities, and outcomes for addiction (Hatzenbuehler et al., 2013). The general context is that individuals with more money, power, prestige, and social connections have

greater advantages and health services/outcomes (Hatzenbuehler et al., 2013). Such ramifications can be observed within the NICU setting.

Relationships play a major role within a NICU, and if the individual is perceived as “bad,” the individual’s power to be a part of the medical team can be affected. The prestige of being the baby’s mother diminishes and staff usurps the parental role. The parent thereby may have limited social connection to staff or baby. This can cause the parents to develop negative feelings towards the NICU staff and thus limit their desire to remain connected.

Hospitals around the country are beginning to reassess the treatment of NAS and have found promising results by humanizing the individual. In a Tennessee hospital, the program functions under the paradigm of addiction as a disease over a moral flaw (Busenbark, 2016). By decreasing providers’ disapproval and subsequent anger toward the mother’s drug use, providers are able to better support the baby and parent (Busenbark, 2016). Such changes in the treatment of NAS lowered the length of stay (LOS) from 34 days to 23 days in a Tennessee area NICU (Busenbark, 2016). The decrease in LOS is attributed to staff and community education and a shift in the beliefs about addiction (Busenbark, 2016). Similarly, the Yale-New Haven Children’s hospital changed the underlining belief system of drug-exposed babies and placed the parents in the center of the treatment/care process (Busenbark, 2016). The parents are included in the treatment plan to help administer the non-pharmacological support. The hospital team is empowering women to become the healing component which helps to increase the trust and relationship between staff and caregiver (Busenbark, 2016). After two years of implementing this approach, Yale-New Haven Children’s Hospital experienced a \$4

million reduction in costs due to a decrease in length of stay from 27.5 days to 7.5 days (Busenbark, 2016).

***Status Characteristics Theory.*** Status Characteristics Theory posits that the stigma of the individual must be proven untrue before the group will accept an alternative belief (Hatzenbuehler et al., 2013). For example, the medical team deems a parent unable to care for the drug-exposed baby; collectively, the group believes this as truth. The burden lies on the parent to disprove the belief and regain the power to care for the baby. For this to occur, the individual must be able to overcome self-stigma and not fall into the perpetual cycle.

Continued research on structural stigma is necessary to better understand the consequences of structural stigma and potential interventions (Hatzenbuehler, 2016; Link & Hatzenbuehler, 2016). Stigma, structural or otherwise, does not solely affect one domain of a person's life (Link & Hatzenbuehler, 2016). There is limited research available on structural stigma and healthcare facilities for women pre/perinatally. However, research in other areas of healthcare, like HIV, showed a higher link to favorable treatment when the individual experienced limited structural stigma (Hatzenbuehler, 2016). Although emerging research is available on structural stigma, it remains in the early stages of understanding and development (Hatzenbuehler, 2016). Further study of structural stigma, particularly in the maternal/fetal domain, will enhance the understanding of health inequalities and increased success of interventions (Hatzenbuehler, 2016).

## **Study Rationale**

Although the field of research surrounding general NAS and addiction is robust, there is a dearth of research regarding healthcare provider attitudes across disciplines and potential structural stigma regarding prenatal substance misuse (Fonti, Davis, & Ferguson, 2016). Beyond the traditional healthcare providers of medical doctors and nurses, there is a host of ancillary staff such as social workers, chaplains, supportive care workers, case managers, ultrasound technicians, dietary services, physical therapists, speech therapists, occupational therapists, managerial nurses, lactation consultants, and volunteers. All of these providers play a role in the hospital experience of pregnant women. Each group may have a different understanding or belief and can negatively or positively affect the outcome. The case manager's role is often to gain insurance approvals for hospital stays and procedures while the physical/speech/occupational therapy roles assist with education around current and ongoing physical needs. Social workers are the gatekeepers to notify Child Protective Services, provide referrals to addiction and community resources, as well as support. Chaplains offer emotional and spiritual support while dietary helps to improve nutrition for the mother while also serving to ensure maximum growth for the baby. Directors assist with policy and procedures, and managers often provide supervision. All of these different disciplines, whether directly or indirectly, play a vital role in the mother and baby's life. Yet, there stands a major gap in the literature as to the effects, beliefs, and attitudes of the healthcare team when working with substance-exposed babies and their families.

No studies were found that assessed the attitudes of the multi-disciplinary team of healthcare workers who are involved in the care of women suffering with substance

misuse and their babies. A few studies like Selleck and Redding's study from the mid-1990s examined the attitudes towards prenatal substance misuse of 392 nurses. The results indicated that more than half of nursing staff reported negative or punitive attitudes towards the women. However, staff with greater education on addiction had more positive attitudes (Selleck & Redding, 1998). The study included only nursing staff, which reflects a limitation as many different disciplines are involved in the care of both mother and baby. Similarly, Fonti et al.'s (2016) survey of nurses indicated neutral to slightly positive overall attitudes towards prenatal substance misuse (Fonti et al., 2016). Additionally, the majority of healthcare providers indicated that they believe they have the power, professionally, to make a positive difference for the mother (Fonti et al., 2016). Raeside's (2003) quantitative study also examined attitudes of midwives and nursing staff (n=50) relating to prenatal substance misuse and found negative staff attitudes. The self-report results indicated that 98% believe it is important to encourage the maternal/baby bond though 76% report anger towards the mother (Raeside, 2003). Additionally, 76% of participants reported feeling that they were unable to effectively meet the psychological needs of the new mothers. Howell and Chasnoff (1999) conducted 33 focus groups of hospital and community workers and women with prenatal substance misuse. The focus of the study was to better understand the needs of women with prenatal substance misuse rather than staff attitudes and structural stigma.

Other such research examines attitudes on substance use disorders in pregnancy. Bland, Oppenheimer, Brisson-Carroll, Morel, and Holmes (2001) reviewed attitudes of medical students (n=84) towards substance misusing pregnant women. The results indicated a positive change in medical student attitudes after education regarding

addiction was presented (Bland, et al., 2001). Silins et al. (2007) surveyed more than 400 medical students about their attitudes towards drug misuse. The survey was administered prior to an intensive educational intervention regarding substance misuse (Silins et al., 2007). The education included not only classroom work but also focus groups with individuals experiencing substance misuse (Silins et al., 2007). The survey was administered again at the end of the educational series (Silins et al., 2007). Silins et al. (2007) used an adapted Alcohol and Alcohol Problems Perception Questionnaire (AAPPQ) to assess student attitudes. The medical students' overall attitudes toward substance misuse improved with increased education (Silins, et al., 2007). However, Ford, Brammer, and Becker's (2003) cross-sectional survey of nursing attitudes indicated that education alone is not sufficient to improve the attitudes of staff when working with maternal substance misuse. It is likely that additional emotional and social supports are necessary.

Social workers have a unique ability to be leading researchers and practitioners by developing and implementing programs, changing policy, and guiding development practices. The goal of this study was to assess the attitudes and structural stigma across multiple disciplines within a healthcare system towards women who use illicit substances pre/perinatally. Such research may lead to a greater understanding as to proactive measures to decrease the structural stigma of prenatal substance misuse and increase support for healthcare providers. Research is necessary to assist in identifying support and education gaps for providers and to recognize the unique challenges facing healthcare providers across disciplines who work with drug-exposed babies. Overall, families and healthcare providers may not be receiving the needed support which can then impact



care, performance, and safety. Prenatal substance misuse is a public health concern and it is necessary to continue the research to ensure best practices and supports, both for the mother/baby and the healthcare providers.

### **Research Question and Hypotheses**

This project examined several variables to explore structural stigma towards women with prenatal substance misuse within a healthcare unit. The research question is a broad inquiry about the relationship among the study variables (Creswell, 2008). What are the healthcare practitioners' perceptions, attitudes, and level of structural stigma towards prenatal substance misuse?

The following hypotheses build on the research question and test some of the conceptual framework of the body of knowledge (Creswell, 2008) about the effects of working with babies suffering with NAS and attitudes of prenatal substance use. See Table 1 for a complete list of hypotheses, variables, and analysis methods.

*H1:* The area of employment practice and level of supervision will be predictive of healthcare providers' attitudes and level of structural stigma towards women with prenatal substance misuse.

*H2:* Healthcare providers' expressed statement of their belief of causation of substance misuse will be predictive of their attitudes towards women with prenatal substance misuse.

## **Chapter Three: Research Methods**

### **Research Design**

The design of the study was a cross-sectional, exploratory survey. The survey design allowed for a greater ability to estimate from the sample to the population (Dillman, 2007). Other design modes like focus groups, small group experiments, content analysis, and historical analysis do not allow for such estimation (Dillman, 2007). The study was exploratory in nature because it sought to shed light on the emerging connection between attitudes towards drug-exposed babies and their families and structural stigma (Rubin & Babbie, 2011). Although a cross-sectional design with a one-time sample of participants allowed for insights into association within the study (Hatzenbuehler, 2016), this type of design was not able to capture changes over time (Rubin & Babbie, 2011).

### **Study Participants**

The group under investigation were healthcare practitioners within a maternal/fetal and prenatal healthcare setting. There are several reasons for focusing on this group of practitioners. The care provided for babies experiencing NAS and their mothers requires a team approach (Busenbark, 2016). As such, the hospital staff that provides care includes nursing, neonatology, dietary, social work, chaplaincy, high risk obstetric care, speech/physical/occupational services, case management, ultrasound, lactation specialty, language services, and NICU general staff. Thus, multiple disciplines are involved in the care of mother and baby. All medical practitioners, regardless of discipline within the maternal fetal setting, are ideal for the study because these practitioners are most likely to be delivering clinical intervention, are at risk of perpetuating structural stigma, and may experience burnout associated with the highly

stressful environment. The main inclusion criteria for this sample was actively practicing in the healthcare field (employed either part-time or full-time) at the time of data collection. Participants who are not currently practicing in the healthcare field were excluded from the study. Additionally, they were required to practice within the maternal, neonatal, or pediatric areas. Due to the format of the survey participants also were required to be able to read English.

The sample was a non-representative, convenience sample of healthcare professionals in Indiana. Although probability sampling increases the potential for non-biased sampling due to the nature of the study, due to financial and resource constraints, it was not feasible (Henry, 1998).

To recruit healthcare providers willing to complete the survey, the researcher sought contact with the largest pediatric hospital in the state of Indiana. The Indiana University Hospital System including Riley Children's Hospital, Eskenazi Health, Methodist at Indiana University, and University Hospital at Indiana University, is the largest pediatric hospital and offers the highest level of care (level IV) in the state. The researcher contacted the individual medical directors and department managers directly and offered an opportunity to participate in the study. A personalized invitation e-mail was sent (see Appendix A). The medical directors and managers were asked to send the survey to their staff via the Internet through a participant recruitment e-mail written by the researcher (see Appendix B). By asking the medical directors and managers to send out the recruitment e-mail and survey link, the protection of staff information was better ensured. A follow-up e-mail with a study time frame and a message of appreciation was sent to all agreeing medical directors and managers (see Appendix C).

## **Sample Size**

To determine an appropriate sample size, multiple factors including type of statistical test, the significance level, the expected effect size, the targeted value of power, and the estimated response rate for the survey was assessed (Olejnik, 1984). The conventional social science alpha level of .05 was used; thus, there is a 5% chance that false significance, or type 1 error, will occur (Olejnik, 1984). A medium effect size, the strength of difference between two or more variables, was used as this is conventional in social science research (Olejnik, 1984). A factorial Multivariate Analysis of Variance (MANOVA) was used to analyze the data to test the first hypothesis. Based on the use of the MANOVA, a medium effect size of .15 was used in this study (Newton & Rudestam, 1999). The generally accepted minimum for power is .80, to decrease the possibility of Type II error, thus, an 80% chance of finding statistical significance when there is significance. The Daniel Soper Statistical Calculator (2011) was used to calculate the sample size with the above criteria and the five predictor variables. The survey required a target sample of 91 participants. Since response rates for Internet surveys can be as low as 25% (Munoz-Leiva, Sanchez-Fernandez, Montoro-Rios & Ibanez-Zapata, 2010), the goal was to reach 364 potential participants to get a sample size of 91. Initially 135 individuals opened the survey link, 127 individuals started the survey, and 117 completed the survey. The participants came from pediatric and maternal medicine units of Indiana University Health. The researcher was unable to report the number of employees who may have received the survey as the number of employees in each department was not known.

IRB approval was granted from Indiana University. Additionally, the Riley Hospital for Children medical director reviewed the survey and IRB approval prior to allowing data collection.

The survey was disseminated to healthcare providers, via their manager or medical director, by an e-mail with a web link to the survey software tool. Staff were invited to participate in all departments that may have interactions with women with prenatal substance misuse and children affected by prenatal substance misuse. For example, a woman with substance misuse may be staying on a cardiac unit rather than obstetrics to ensure proper medical safety if she has additional needs. It was important to capture all staff that may interact with the mother and baby, even if the instances were minimal. A reminder e-mail about the survey with the link was sent 10 days after it was initially sent (see Appendix D). One medical director reported after she received the reminder e-mail she realized she had failed to send out the original survey. She then sent out the original survey and contacted the researcher after she sent the reminder email, 10 days later. The directors/managers were not contacted with a second reminder as the desired sample size was reached. In addition, more than one reminder may have been difficult for the director to send out on behalf of the researcher. Individual contact information was not available thus sending the reminder e-mails relied on the directors/managers. The researcher was available if directors/managers had questions or concerns. Respondents had the opportunity to enter a drawing to win a \$10 Amazon gift card. One participant per every 250 respondents in the drawing was randomly selected for the gift card. In this case, one respondent was chosen as there were 117 participants. After completing the survey, respondents had the opportunity to choose to enter the

drawing. Respondents were taken to a new survey to enter only the contact information of name and email address. The respondents name was not linked to the initial survey. The winner was selected using the “sweepstakes generate winner” function through Qualtrics. Individuals were also encouraged to participate to help increase the body of literature surrounding healthcare providers’ attitudes and perceptions of prenatal substance misuse.

## **Measures**

The key variables in this study included healthcare provider attitudes and perceptions of prenatal substance misuse, structural stigma, and beliefs about causation of substance misuse. A practitioner’s employment discipline and level of supervision were used as predictor variables. Of particular interest was the variable of employment discipline, as little to no research is available on this factor. Demographics served as additional control variables.

**Healthcare provider attitude and stigma.** To assess healthcare provider attitudes, a request was sent to Ms. Lavinia Raeside for access to her questionnaire from 2003. However, after reaching out by e-mail and through ResearchGate message board, there was no return contact from Ms. Raeside. No new contact information for Ms. Raeside was available. The full survey was not found in the public domain. However, a request to Mr. Edmund Silins for the use and modification of the questionnaire from Alcohol and Alcohol Problems Perception Questionnaire (AAPQ) was made and granted (Silins, Conigrave, Ravkin, Dobbins, & Curry, 2007). Mr. Silins provided written documentation allowing for the use and modification of the survey (see Appendix E).

The researcher developed a new measure to assess belief of causation of substance misuse, stigma, and attitudes toward prenatal substance misuse based upon the work of multiple contributors (see Appendix F) (Raeside, 2003; Silins et al., 2007; Stringer, 2016). The measure is a 35-item scale broken into 3 groups, attitudes scale, structural stigma scale, and causation of substance misuse scale. Each of the items, which included statements such as “I am uncomfortable working with pregnant cocaine users” and “I believe more punitive measures should be taken against a mother with pregnancy drug misuse,” are rated on a 5-point Likert scale (1 = strongly agree to 5 = strongly disagree). Six items were reverse-coded. Lower scores indicate more negative attitudes and stigma related to prenatal substance misuse. The items used to assess provider attitudes were modified from Silins (2007) (Q13-Q28). Questions 40 and 47 were added to the attitudes scale as they were specific to this study. Eleven items were developed to assess structural stigma (Q32, Q35, Q36, Q47, Q48, Q49, Q50, Q51, Q53, Q54, Q55). The items were based upon previous available research (Raeside, 2003; Stringer, 2016). For full reference of the survey items used for each scale, please see Table 2.

**Control variables.** Twenty-two (22) additional questions were added for demographics and greater understanding of respondents’ views. Demographic items inquired about respondents’ education level, position status (full or part-time), professional licensure status, race, ethnicity, age, practice location, length of time in practice, and gender.

**Pretesting.** To best assess if the questions were relevant, easy to understand, and applicable to the target sample, pre-testing of the survey was completed (Czaja & Blair, 2006). This study had multiple levels of pre-testing. The first was a review from the

dissertation committee who provided essential feedback on the instrument. Additionally, Dr. Glassburn reviewed the survey and offered vital feedback. In addition to committee review, the researcher asked eight professionals in the healthcare field, including social work, nursing, dietary, and speech therapy to fill out the survey. An e-mail was sent with a Qualtrics link to the survey. Respondents reported survey completion was around 10 minutes and no concerns were noted. The pilot-test process allowed for additional feedback and to assess the initial face validity and reliability of the tool (Czaja & Blair, 2006). The scales for Attitudes, Structural Stigma, and Causation of Substance Misuse were tested for internal consistency using Cronbach's Alpha coefficient. The Attitudes Scale ( $\alpha=.89$ ), Stigma Scale ( $\alpha=.785$ ), and Causation of Substance Misuse Scale ( $\alpha=.802$ ), met the parameters for appropriate internal consistency at the acceptable to high range.

### **Data Collection**

Data analysis was conducted using the SPSS software (IBM SPSS, 2011) as it is compatible with Qualtrics. To reduce the potential error of entering data by hand, the information was uploaded directly from Qualtrics to SPSS. Factorial MANOVA, correlations, and descriptive analyses were used to assess the data. Factorial MANOVA was used as it allows for testing mean differences between levels of two independent variables with two dependent variables (French et al., n.d.) and reduces the Type 1 error rate (Daui Wei Ling, 2011).

**Independent variables.** The research study examined two independent variables: employment discipline and perceived level of supervision. Both were examined at the categorical level. Specifically, employment discipline was nominal. Employment



discipline consisted of 24 possible selection options, including an “other” category. Within the employment discipline question, 13 different positions were selected by participants. As some employment discipline groups contained as little as one member, the employment disciplines were consolidated to six fields. The consolidated categories included Medical Doctor, Nurse Practitioner/ Physician Assistant, Direct Care Nurse, Administration, Social Work, and Support Staff. Table 3 shows the complete representation of all employment disciplines and the consolidated groups. To assess the perceived level of supervision, respondents were asked to choose from a 5-point Likert scale (1= strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree). As a numerical difference could not be identified between the five groups, perceived supervision was used as an ordinal variable (Hinkle, Wiersma, & Jurs, 2003).

**Dependent variables.** The dependent variables, Structural Stigma and Attitudes, served as continuous variables. The Attitude Scale was created by using the sum score of questions Attitude 1-Attitude 18. Attitude 18 was reverse-coded. Respondents chose from a 5-point Likert scale (1= extremely agree, 2=agree, 3=neutral, 4=disagree, and 5=extremely disagree). The sum score was then computed. The sum numbers were divided into 5 groups: Extremely Negative Attitudes (18-32), Negative Attitudes (33-47), Neutral Attitudes (48-62), Positive Attitudes (63-77), and Extremely Positive Attitudes (78+). The mean score ( $m=-60.19$ ,  $SD=14.85$ ) of all participants represents a generally neutral attitude toward prenatal substance misuse. Reliability was tested with Cronbach Alpha of 0.959, which indicated excellent internal consistency (see Table 4 for inter-item correlation matrix).

The Structural Stigma Scale was created by using the sum score of Stigma items 1-11. Stigma 2, 3, and 9 were reverse-coded. Respondents chose from a 5-point Likert scale (1=extremely agree, 2=agree, 3=neutral, 4=disagree, 5=extremely disagree). The sum score was then computed. The sum numbers were divided into 5 groups: Extremely High Stigma (11-19), High Stigma (20-28), Neutral (29-37), Low Stigma (38-46), and Extremely Low Stigma (47-55). The mean score ( $m=34.70$ ,  $SD=5.07$ ) of all respondents represented a generally neutral level of structural stigma toward prenatal substance misuse. Reliability was tested with Cronbach Alpha of 0.72, which indicated acceptable internal consistency (see Table 5 for the inter-item correlation matrix).

Descriptive statistics were calculated to determine study participant characteristics and qualities. These findings provided a contextual framework of the study sample and the relationship between participants and their beliefs and attitudes toward prenatal substance misuse (see Table 6).

**Assumption testing.** In preparation for the factorial MANOVA for research question 1, a series of tests were completed to ensure the assumptions for the MANOVA analysis were met. The Assumption of Multivariate was assessed as employee scores were independent of one another and all participants could only complete the survey one time. The employee discipline affiliations were condensed to yield a higher sample size for each group. The groups, as noted earlier, were reconfigured to include Medical Doctor, Nurse Practitioner/Physician Assistant, Direct Care Nurse, Social Work, Administration, and Support Staff.

The dependent variables were continuous and measured at the interval level while the independent variables were categorical, each with five mutually exclusive and

exhaustive groups. Across the dependent variables, the measure of skewness and kurtosis, histograms, and normal Q-Q plots were examined. The results indicate a normal distribution and kurtosis is not significant (-0.66). Additionally, Mahalanobis Distance (8.70) was used to test for multivariate outliers, which is within the critical value range ( $2(13.816)$ ),  $p < .001$  (Hinkle, Weirsmas, & Jurs, 2003).

The Pearson Correlation was used to test the assumptions that each dependent variable was moderately correlated. Pearson Correlation was performed on the dependent variable scales: Attitude Scale and Structural Stigma Scale. The results indicate the appropriate use of the MANOVA as the dependent variables -- attitude and structural stigma -- were significantly correlated ( $r = 0.602$ ,  $p < .01$ ), indicating a strong correlation without multicollinearity (see Table 7).

The assumption of homoscedasticity, i.e., that the covariances of all dependent variables across the levels of independent variables are equal, was measured using Box's M test. The Box's M value of 44.67 ( $p = .688$ ) indicates the covariate matrices between the groups were assumed equal for the MANOVA (see Table 8).

The homogeneity of variance assumption was tested for Attitude Scale and Structural Stigma Scale. Using Levene's F test, the assumption that all dependent variables has equal variance across all independent variable(s) groups, was satisfied as neither were statistically significant (Attitude Scale,  $p = .355$  and Structural Stigma Scale = .514). All assumptions were met thus rendering MANOVA an appropriate statistical analysis.

Additionally, correlations were calculated for the perceived causation of substance misuse scale and attitude scale of prenatal substance misuse. The causation

scale was created by using the sum score of C1-C5, with C1 reserve-coded. The sum scores were calculated and then five groups were formed: Highly Moral Flaw (5-8), Moral Flaw (9-12), Unsure (13-17), Disease (18-21), and Highly Disease (22+). The mean score ( $m=13.38$ ,  $SD=3.72$ ) of all respondents represented a generally unsure belief of cause of substance misuse (disease vs moral). For this study the Learning Model was not measured. Reliability was tested with a Cronbach Alpha of 0.798, which indicated acceptable internal consistency. See Table 9 for the inter-item correlation matrix. The variables for causation of substance misuse and attitudes -- were continuous. The attitudes scale was used as previously described. The Q-Q plots for Attitudes Scale and Causation Scale were reviewed and revealed a linear pattern.

## Chapter Four: Results

### Study Participants

**Demographics.** The study sample (n=135) included respondents from a large hospital system in Central Indiana. However, after data cleaning to remove incomplete surveys, the sample size was reduced (n=117). The sample was overwhelmingly female (94%) and Caucasian (92%). Participant ages ranged from 21 to 73 years. See Table 10 for a full review of demographic characteristics of respondents.

**Practice and employment.** Of the 24 employment disciplines listed, the most common positions reported were Direct Care Nurse (41%), Medical Doctor (13%), Nurse Practitioner (14%), or Social Worker (13%). In terms of employment status, more than 94% of respondents were actively practicing in a maternal, fetal, or pediatric setting and 86% were currently working with a mother or baby affected by NAS. Most respondents reported they were full-time (73%) employees, and 20% reported spending more than 51% of their work week in direct contact with substance misusing mothers. Of the respondents, 55% reported they had been in their current position for more than 10 years.

**General attitudes and beliefs.** Several survey questions were used to gain a better understanding of the medical system, as a unit, in terms of beliefs related to prenatal drug misuse. More than 43% of respondents viewed their hospital system as providing a supportive environment, and more than 72% were satisfied with the level of communication between disciplines. Additionally, only 8% of respondents reported burnout from working with mothers who misuse substances, and more than 43% reported their schooling provided them with adequate education to discuss health risk behaviors. While 36% of respondents believed that the person could quit illicit substances if they

wanted to and 36% reported a person who misuses substances cares more about the drugs than the baby, roughly 9% of respondents reported no empathy towards women with substance misuse. Interestingly though, 49% of respondents viewed substance misuse as a disease, and only 10% reported substance misuse as a moral flaw. Forty percent of respondents believed the state should impose greater sanctions overall, with an additional 35% requested more punitive consequences. Additionally, 32% of respondents reported the hospital provides better non-medical care than mothers with substance misuse. Refer to Table 6.

### **Hypotheses Findings**

**Hypothesis 1.** For hypothesis 1, the area of employment practice and level of supervision will be predictive of healthcare providers' attitudes and level of structural stigma towards women with prenatal substance misuse, the results of the factorial MANOVA showed an overall significant difference between an employee's attitudes and stigma levels among different disciplines (Pillai's Trace= 3.24,  $F_{(10, 198)}=.28$ ,  $p=.001$ ) with a power of 0.987. However, there was no significant difference between an employee's attitudes and stigma levels among perceived levels of supervision (Pillai's Trace= 2.04,  $F_{(6,198)}=.116$ ,  $p=.062$ ). Additionally, no significant differences were found between an employee's attitudes and stigma levels among perceived level of supervision combined with discipline (Pillai's Trace=1.3,  $F_{(18, 198)}=.211$ ,  $p=.194$ ) (see Table 11).

The results of the post hoc analyses between-subjects indicated attitudes ( $F_{(10,198)}=4.63$ ,  $p=.001$ ,  $\eta^2=0.141$ ) and stigma levels ( $F_{(6,198)}=2.64$ ,  $p < .05$ ,  $\eta^2=0.118$ ) differs significantly based on employment discipline. The employee's discipline accounted for 11.8% of the variance in attitudes ( $\eta^2=0.118$ ). While, employee's

discipline accounted for 18.9% of the variance in structural stigma ( $\eta^2=0.189$ ). Medical Doctors indicated less negative attitudes ( $MD=9.80, p< 0.05$ ),  $CI95= (1.71, 17.89)$  and decreased structural stigma ( $MD=3.73, p> 0.05$ ),  $CI95= (-1.84, 8.78)$  compared to Direct Care Nurses. Direct Care Nurses indicated more negative attitudes ( $MD=-14.37, p< 0.001$ ),  $CI95= (-22.27, -6.48)$  and more structural stigma ( $MD=-3.45, p< 0.05$ ),  $CI95= (-6.17, -0.74)$  over Social Workers. Direct Care Nurses indicated more negative attitudes ( $MD=-9.94, p< 0.05$ ),  $CI95= (-17.66, -2.22)$  and more structural stigma ( $MD=3.91, p< 0.005$ ),  $CI95= (-6.52, -.95)$  than Nurse Practitioners/Physician Assistants. Social Workers indicated fewer negative attitudes ( $MD=13.19, p< 0.05$ ),  $CI95= (3.49, 22.88)$  than Support Staff. However, there was not a statistically significant difference among levels of structural stigma between Social Work and Support Staff ( $MD=.25, p=0.882$ ),  $CI95= (-3.09, -3.59)$ . Direct Care Nurses indicated higher structural stigma ( $MD=-3.20, p< 0.05$ ),  $CI95= (-5.92, -0.49)$  than Support Staff but there was no significant difference among attitudes ( $MD=-1.19, p=0.766$ ),  $CI95= (-9.08, 6.71)$ . There were no other significant findings between type of discipline and attitudes and structural stigma (see Table 12).

The results of the factorial MANOVA showed there were no significant differences between attitudes ( $F_{(10,198)} = 1.93, p > 0.05, \eta^2 = 0.055$ ) and structural stigma ( $F_{(10,198)} = 1.92, p > 0.05, \eta^2 = 0.055$ ) and the perceived level of workplace supervision, with a power of .732. The level of perceived workplace supervision accounted for 5.5% of the variance in structural stigma ( $\eta^2 = 0.055$ ). There was no significant finding between the perceived level of supervision and discipline among staff attitudes ( $F_{(18,198)} = 1.25, p > 0.05, \eta^2 = 0.102$ ). Additionally, there were no significant findings

between perceived level of supervision and discipline among structural stigma (Pillai's Trace= 0.211,  $F_{(18,198)} = 1.58$ ,  $p > 0.05$ ,  $\eta^2 = 0.126$ ). The employment discipline and level of supervision together did not influence the attitudes and level of structural stigma among employees. Please refer to Table 13 for full multivariate means.

**Hypothesis 2.** For hypothesis 2, healthcare providers' expressed statement of their belief of causation of substance misuse will be predictive of their attitudes towards women with prenatal substance misuse, a Pearson Correlation was conducted to determine a correlation between the perceived view of the cause of substance misuse and attitudes of practitioners. Prior to completing the correlation analysis, the distribution and linear relationship was checked and passed the assumptions. There was a high positive correlation ( $r=0.612$ ,  $p < 0.01$ ) between the belief in the causation of substance misuse and attitudes of practitioners. As the causation of substance misuse increased towards a disease model, attitude scores increased. Higher attitudinal scores indicated a more positive perception of women with prenatal substance misuse. Higher scores on the causation scale indicated a belief that substance misuse is a disease versus a moral flaw. Thus, the null hypotheses, that no relationship between a person's belief of the causation of substance misuse and attitudes towards maternal substance misuse, was rejected (see Table 14 for cause of substance misuse and attitudes correlation).



## **Chapter Five: Conclusion**

### **Summary of Findings**

Women with prenatal drug misuse need medical care and emotional support at the time of delivery of their baby and may be genuinely interested in changing their path in life. Enabling women to break the cycle of substance misuse and care for their babies is of benefit to society as it can decrease the financial costs for taxpayers and increase the overall health of society (Logan et al., 2013; Patrick et al., 2012; Stein, 2002; Whitman et al., 2014). Healthcare workers have an opportunity to help change a woman's life positively or to reinforce the woman's negative feelings of self-worth and continuing her destructive path. Increased parental support from healthcare providers is a prime factor in improving positive outcomes for the baby, mother (Seattle Children's, nd), and arguably, society. Consequently, how the healthcare workers feel about working with the women and how they treat them, is of utmost importance.

A common scenario at the birth of a baby is that the medical facility encourages the bonding of the new family while teaching baby care skills to the parents as they plan for the departure home. Unfortunately, sometimes the health of the baby may delay the release and then parents will receive support and education during the difficult time. However, if the parent is perceived negatively or if they feel they are being treated negatively, this could alter the traditional training time and the opportunity for positive outcomes. Women who are unable to positively bond with their baby can have added psychosocial stressors, including increased drug misuse and depression (De Bortoli et al., 2014; Stein, 2002). By engaging new mothers and actively including them in the

treatment plan for their child, women can gain skills while the babies benefit from the parental contact.

In this study, a practitioner's comfort in working with women with prenatal substance misuse and feelings of empathy for them are indicators of a greater degree of positive attitudes. The majority of respondents (60%) indicated feelings of empathy towards women with substance misuse with social workers (87%) reporting the highest level of empathy among employees. See to Table 15 for complete list of empathy scores by discipline.

However, this verbalization of empathy may not transcend to an overall reduction of stigmatization in the treatment of new mothers. In this study, a healthcare practitioner preferring to not allow a baby to be discharged to a mother with a history of substance misuse, a desire to impose greater sanctions on the parent, or allowing less privacy for the family, are some indicators of a greater degree of structural stigma. These characteristics demonstrated informal and formal levels of structural stigma, which broadly encompasses the policies and the culture within the institution by impacting the mother's ability to utilize all resources/supports (Corrigan, Markowitz, & Watson, 2004; Corrigan et al., 2005). The stigma placed on the women with substance misuse is shown indirectly by the fact that 32% of respondents believed that the hospital provides better non-medical care than the mothers. Further, 25% of the respondents reported mothers deserve less privacy. These beliefs are unfortunate as several programs across the country have found success in humanizing and empowering women with substance misuse which led to decreased hospital length of stay and diminished overall taxpayer costs (Busenbark, 2016). This lack of faith in the mother to care for her baby and the invasion of her

privacy, are factors that can undermine a mother's ability to learn and improve her parenting skills. Such actions can deter mothers from seeking follow-up care and reinforce a sense of distrust in the healthcare system (Howell & Chasnoff, 1999; Seattle Children's, n.d.). One survey respondent shared, "There is a big stigma with prenatal substance misuse clients. We as providers tend to only focus on the here and now instead of trying to understand what has led to these choices for this client." This type of thinking is detrimental as often the substance misuse manifests from a combination of mental health needs, family addiction, poor social and psychological influences, poor coping mechanisms, sexual abuse, and physical abuse (Ngo, n.d.; NIDA, 2014a; Stein, 2002).

The initial research question sought to explore not only the respondents' attitudes and whether structural stigma was imposed upon women with prenatal substance misuse, but whether this occurrence differed by healthcare discipline and supervision (or institutional support). It was unknown whether the various employment positions might reflect different results because of the specific education, training, or experience of such disciplines. Interestingly, discipline did indicate significant differences when reviewing attitudes and structural stigma. Lower scores indicated negative attitudes and higher levels of structural stigma towards women with prenatal substance misuse. As a collective group, the respondents reported an overall positive attitude ( $m=60$ ) yet neutral levels of structural stigma ( $m=34.7$ ) toward women with substance misuse. Looking at the various disciplines, however, Direct Care Nurses had significantly lower scores for attitude ( $m=55$ ) and structural stigma from their counterparts: Nurse Practitioners ( $m=64.76$ ), Medical Doctors ( $m=64.8$ ), and Social Workers ( $m=69.3$ ) (see Table 16 for a

complete list of attitude scores by discipline). Additionally, Direct Nursing Staff on average reported having an overall neutral to negative attitude towards women with prenatal substance misuse while Medical Doctors, Social Workers, and Nurse Practitioners reported an overall neutral to positive attitude. Higher levels of structural stigma were significant between Direct Care Nurses ( $m=32.7$ ) and support staff ( $m=35.9$ ). See Table 17 for a complete list of structural stigma scores by discipline. Although this study alone cannot determine why disciplines vary, the results are not necessarily surprising. Often Direct Care Nurses spend more direct time working in day-to-day contact with the mothers and babies affected by prenatal substance misuse which may lead to a more stressful work environment or greater levels of burnout, as providers feel they are ineffective in changing a mother's behavior (Stein, 2002). Though only 9% of respondents indicated that they were burned out from working with prenatal substance misuse, respondents commented on the stressful environment they often encounter in the hospital:

“NAS and fetal alcohol syndrome often create issues in the NICU because these babies are often inconsolable. It often causes distress in NICU caregivers as we feel somewhat helpless to aid our patients.”

“Staff have to put up with verbal abuse from families that they are caring for. Takes away the joy of caring for patients they have dedicated their life's work.”

“All cases are different; some moms are a lot harder to deal with than others.”

If the hope is to improve the situation for women with prenatal substance misuse so that they will be more nurturing to their baby and improve their lives, this heightened imposition of structural stigma imposed by Direct Care Nurses may be problematic to achieving the desired outcome. This may reflect a need for greater education, especially

at the Direct Care Nursing level. Additional factors that may influence a provider are the levels of support perceived and the hospital system cohesiveness. While level of supervision did not yield a significant finding between employment discipline, attitude, and structural stigma levels, it is promising that 87% of respondents reported positive supervision. Although 87% viewed the level of supervision as positive, respondents shared specific concerns with supervision:

“Medical upper level staff never exam(sic) these babies. They rely on Finnegan scores too much. Nursing leadership does not understand how much time the NAS baby needs.”

Supervision is powerful when the relationship is viewed as supportive by the supervisee (Frimpong et al., 2011), but such lack of understanding by leadership of these comprehensive issues regarding NAS can negatively affect both the practitioner and the mother/baby. Thus, although it is favorable that the healthcare practitioners feel supported by their institutions, it is unknown whether the institutions are supporting a positive or negative view of the women with prenatal substance misuse.

Though the overall view of supervision is promising, other factors that can affect a healthcare practitioner are the perception of job training/education and the level of communication between disciplines. Of the respondents, 79% reported they received adequate education and training for the current position, and 72% reported satisfaction with the level of communication between disciplines. This is promising as research indicates increased levels of communication between healthcare practitioners often leads to increased job performance and overall health of an organization (Pincus, 1986; Ruck & Welch, 2012). Understanding and recognizing best practice methods in working with prenatal substance misuse is a prime factor in increasing positive outcomes (Butler et al.,

2002; Stein, 2002; Worley, 2014), and possibly may protect against burnout. Thus, it is promising that the majority of respondents reported adequate levels of education and training.

Beliefs about the cause of maternal substance misuse were also tested. There were strong correlations ( $r=0.612$ ) between the perceived cause of substance misuse and one's attitude towards prenatal substance misuse. See Table 18 for a complete list of perceived causes of substance misuse scores by discipline. The more favorable attitude towards mothers with prenatal substance misuse indicated higher beliefs of disease as a cause for substance misuse. The results indicated that 10% of respondents viewed substance misuse as a moral flaw and 41% were unsure if it was a moral flaw. It is concerning that nearly 50% of respondents do not view substance misuse as a medical issue. Healthcare workers operating under the belief that drug misuse is a moral flaw can often lead to a punitive and criminal approach for the mother (Stein, 2002). In fact, 44% of staff report more punitive measures should be taken against a mother with substance misuse, with an additional 24% unsure. Respondents reported that 37% believe a mother cares more about drugs than her baby, while 16% of respondents were unsure. Additionally, 36% believe a mother could quit substance misuse if she wanted to, with another 22% unsure if a mother could quit. Forms of structural stigma increase within substance misuse when providers view the individual as refusing to stop their use of drug (Corrigan et al., 2009). Respondents shared many concerns regarding the attitudes and beliefs of their colleagues:

“...I do feel, though, on the unit where I work, there is a lack of respect/understanding for mother who have substance abuse/addiction problems.”

“I think that prenatal substance misuse mothers are judged by medical staff. I believe a large part is due to staff being ignorant of other individuals’ background. I wish the atmosphere in the hospital was more accepting and loving than judgmental...”

“...Addiction is a real problem and it doesn’t just go away by willing it to. I wish they could see addiction as they see any disease so that it can be adequately treated.”

Unfortunately, the belief in the cause of substance misuse may impact a healthcare practitioner’s ability to provide a supportive, judgement-free experience. Only 43% of respondents believed hospitals provide a supportive place for mothers with substance misuse issues. This is concerning as pregnancy can be an igniting factor for a woman to seek substance misuse treatment (Crawford et al., 2015; Marangoni & Felix de Olivera, 2015; Stein, 2002). Furthermore, when hospitals adapt a humanistic approach to substance misuse, improved outcomes for the baby are more likely to occur (Busenbark, 2016). Positively, some providers were able to acknowledge their potential bias but still strive to provide the best care,

“I consider myself experienced in caring for babies with substance exposure and their families; however, I still find it hard to overcome my own biases and feelings about the situation. I know I will never be able to fully understand how a mother with substance use disorder feels/acts/thinks, given that I have never used a substance, have never experienced major trauma in my life, etc. By talking to these moms on a personal level and asking the hard questions without judgement, I feel like I am getting closer to providing the most compassionate care I can.”

By recognizing one’s own biases, the healthcare worker is then better able to work through his/her personal feelings and provide the most effective care for the mother and baby.

The overall findings indicate that, although there are some positive attitudes towards mothers with prenatal drug misuse, negative structural stigma exists across all

disciplines. The pervasive nonadherence to the disease model (51%) of drug misuse, may, in part, be responsible for this situation. This mindset may negatively impact patient care by creating an increased hostile environment and lack of support for the family.

There is also an indication that the healthcare provider's discipline may influence their attitudes and levels of structural stigma. This may, in part, be due to the type of discipline and general teachings within each area, as well as, the potential effects of working directly with the population. However, further research is needed to examine directly why different healthcare disciplines vary in their attitudes and stigma level toward prenatal substance misuse. The potential lack of modeling behavior at the higher employment levels may also impact the implementation of non-stigmatizing behavior. Although respondents reported adequate supervision, future research to assess the type of supervision and what behavior is being supported, as well as knowing the model of addiction to which the supervisors and leadership ascribe, would be interesting. Such information may lead to additional understanding of the hospital systems beliefs in total.

### **Limitations**

The research study had some limitations that may have affected the results. The first is the use of a convenience sample of healthcare practitioners from a central Indiana hospital system. The hospital was not randomly selected and not representative of the general population of healthcare practitioners as the sample was overwhelmingly female (94%) and Caucasian (92%). Additionally, not all disciplines were able to be adequately included. Such disciplines absent in the sample include: obstetrics, chaplains, dieticians, and ancillary workers. Direct Care Nurses were the most represented group (41%). It is



not shocking that nursing had a higher presence, as more nurses are employed over the other disciplines. However, the other disciplines were not adequately represented. More hospitals will need to be included to gain a greater sample of ancillary departments like lactation consultants, chaplains, administration, etc. There are no current studies examining provider attitudes and stigma levels across disciplines, yet, all have unique perspectives which may affect the results.

An additional limitation relates to the use of a new survey instrument. While reliability for the scales demonstrated at least an acceptable degree of reliability, additional testing and scale adaptations may yield greater reliability. The single survey item questions like: burnout and supervision satisfaction, among others, may not have been able to account for the full scope of other variables that impact attitudes and stigma levels. Additionally, the effect size for employment disciplines (0.142) and level of supervision (.058) was small, which was concerning as it posed a challenge in estimating the true relationship between variables. However, the power for employment discipline (.987) was well within the appropriate range.

There is a lack of prior research exploring practitioner structural stigma and attitudes of prenatal substance misuse across hospital disciplines. Thus, this research is exploratory in nature and cannot be taken as explanatory. Additionally, response bias may also have affected the results. Respondents may have felt a need to report more positive attitudes, potentially skewing results. The overall quantitative nature of the study limited respondents from expressing additional details, concerns, and attitudes. By following up with additional qualitative research, greater understanding and themes may develop.

## **Implications for Future Research**

Understanding the effects of prenatal drug use on healthcare practitioners offers implications for education, policy, research, and clinical practice. Drug use in pregnancy is a public health concern (Stone, 2015), and this research study indicates that healthcare practitioners' beliefs and attitudes may negatively affect a mother's hospital experience. As hospitals are at times the front-line defense for substance misuse, creating a supportive environment for both staff and mother, the needs of the mother and baby will likely be met with increased effectiveness. Creating a supportive environment is necessary for the mother but also for the practitioner. A supportive environment for the practitioner may include additional peer support when working with a baby experiencing NAS, as often such babies are inconsolable and irritable (Chasnoff et al., 1987). This likely includes upper management being educated and offered the resources needed for the practitioner to promote insight as to the needs of the baby and healthcare practitioner. Additional research is needed to address hospital policies and the implications of those policies. By examining specific policies, procedures, and protocols, like the use of education and support for staff, a greater understanding of potential structural stigmas may emerge. Beyond the formal policies, investigating the potential of informal stigmas adopted by the hospital system may lead to a better understanding of possible improvements and educational opportunities. Further research to explore what practitioners would like to change in the hospital, including support, policy, and practice initiatives may lead to better services for patients but also decrease potential burnout and negative attitudes. Such research can better assess the levels of burnout staff may be experiencing.

A major area for further research and education implementation is understanding the causes of substance misuse. With more than 50% of respondents not reporting drug misuse as a medical issue, greater education for practitioners is needed to help explore the cause and perpetuation of substance misuse. With greater education and understanding of the causes of substance misuse, improved policy and practice models can emerge, which could lead to healthier outcomes for mothers, babies, and healthcare relationships.

Also, this study examined the attitudes and stigma levels of the healthcare practitioners and not the perceptions of families. Perceptions of the family may yield different results regarding structural stigma levels within the healthcare field. By conducting research with both healthcare practitioners and women struggling with prenatal substance misuse, a greater understanding of the experiences for all parties can be achieved. Additionally, more comprehensive programming for healthcare practitioners and families can be instituted.

### **Policy Recommendations**

To assist in improving the attitudes and stigma levels of providers within a hospital environment, policy recommendations and an action protocol are derived from this research. Ultimately, a three-tiered policy and practice protocol emerged. Phase 1 is the *Education Protocol*. The objective is to promote a hospital culture of support and education for employees, across disciplines, working with NAS. First, regular (yearly) dissemination of the Attitudes, Stigma, and Causation Tool is completed by all employees. The tool is a modified version of the survey used in this study. Only the attitude, stigma, and causation scales remain. Next, if an employee scores within the

Extremely Negative to Neutral categories, they are then referred for increased education and support. Increased education focuses on the causes of substance misuse, the supports available to mothers, and understanding the ramifications of one's own attitudes and stigma towards a mother with substance misuse. The education is provided by the social workers and leadership who have advanced training in maternal substance misuse. Support is equally important to increased education. The individual will have support from their supervisor and be allowed to receive and offer feedback as to their own needs when working with NAS. If the individual scores within the Positive categories, then they are referred to the support section. Receiving continued support and being encouraged to offer feedback within their work environment will help continue the positive attitude. The tool allows the leadership team to be aware of the climate within the hospital and for employees to have increased self-awareness and opportunity for education. As the protocol is intended for yearly dissemination, the hospital system will have a baseline for the current climate among their employees. The concerns cannot be improved or changed when one does not know the actual problems, issues, and challenges.

Phase 2, *Prenatal Substance Misuse Inclusive Services Protocol*, is the next step. The objective for Phase 2 is to promote an inclusive, supportive, and safe environment for mothers and caregivers with babies experiencing NAS (see Figure 1). First, the policy should enforce that mothers be allowed or encouraged to stay crib side with the baby. Often this is called "rooming-in." Rooming-in will increase parent interaction and allow staff to train and gain better insight to the parent's ability and needs. Secondly, when the baby is medically stable, the mother is able to provide the majority of feeds for

the baby, give medication as appropriate, change diapers and clothes, and bathe the baby. Social workers will follow and support the family a minimum of three times per week. Social workers can then identify strengths, barriers, and needs of the mother. Social work will meet with the Department of Child Services to assist with wrap around services. Additionally, the protocol requires weekly supervision for all employees working with mothers and babies with NAS. By recognizing an NAS specific policy for all employees, the expectations and culture of the hospital can begin to shift to a more positive framework.

Lastly, Phase 3, *Expectations and Engagement Protocol*, allows for documentation of both mother and employee when caring for the baby (see Figure 2). The parent will document the day, time, service provided, and their current comfort level with the service. The parent will complete the form for every action. The parent should be encouraged to decide their comfort level using a numerical scale, facial scale, or free text. This is necessary as mothers will have different abilities to explain comfort. Next, the staff will complete the same form with the added section to state the supports the staff offered. This allows staff to specifically identify concerns and increase accountability for staff to engage with the mother and provide support by decreasing the acceptance that the “mother is not able to do it,” despite a lack of education or support by staff.

By incorporating the three Phase Protocol, a follow-up study can then be completed to assess if the system can improve the hospital culture and improve services for mothers. This evidence-based research can support the Protecting Our Infants Act of 2015.

Overall, further research is necessary to better understand how the families view the healthcare system and their experiences within the maternal/fetal care setting. By recognizing the unique experiences of the families, specific needs and concerns can then be identified. Staff may believe they are supporting an individual, but if the support they are offering is not the type needed, it may deter a mother's desire to receive help from healthcare providers. Such feelings can diminish the potential for outreach prior to and after delivery. By creating policy change, increasing education, and continuing research, social workers have an opportunity to develop responsive outreach programs for women struggling with substance misuse.

### **Concluding Remarks**

Prenatal substance misuse, which is found in 5% of all pregnancies, affects not only the health of the baby but has implications for the mothers, healthcare practitioners, and the community at large (NIDA, 2017). At a minimum, mothers face legal ramifications, concerns for parent/child bonding, negative provider attitudes, and stigma. Meanwhile, healthcare practitioners face stressful work environments as extensive care must be provided to the affected babies and due to working in a situation that is potentially antithetical to the practitioner's belief system. The initial contact of the mother with the healthcare providers could grossly affect how the mother will ultimately care for herself and her baby. If the drug misuse during pregnancy is perceived so negatively by the healthcare practitioner, the care provided potentially becomes compromised.

Understanding the needs of the mother and the healthcare worker ultimately affects society. Lastly, the community faces high financial costs due to lengthy hospital

admissions and ongoing supports needed for the baby. Yet, there is a dearth of literature investigating prenatal substance misuse stigma and attitudes across healthcare disciplines. This study provided a better understanding of healthcare practitioners' attitudes and levels of structural stigma within the maternal/fetal healthcare setting. Continued research is imperative to ensure best practice and provider support. Hospital staff, at times, are the first interaction a mother has to help her through her substance misuse. The mother, baby, and community at large deserve us to work towards an open and conducive experience. Substance misuse is not slowing down, but with proper policies, practice, support, and outreach, mothers and their babies can be better served.

## Chapter Six: Tables and Figures

<b>Table 1: Hypotheses, Variables, and Statistical Tests</b>			
<b>Hypotheses</b>	<b>IV</b>	<b>DV</b>	<b>Statistical Test</b>
<i>H1: The area of employment practice and level of supervision will be predictive of healthcare providers' attitudes and level of structural stigma towards women with prenatal substance misuse.</i>	Area of practice  Level of supervision	Structural Stigma Scale  Attitudes of Healthcare Practitioner Scale	MANOVA
<i>H2: Healthcare providers' expressed statement of their belief of causation of substance misuse will be predictive of their attitudes towards women with prenatal substance misuse</i>	Expressed statement of causation of addiction	Attitude toward women with prenatal substance misuse	Correlation



<b>Table 2: Hypotheses, Variables, and Survey Items</b>			
Hypothesis	Scale/Variable	Survey Items	Reverse-Coded
H1: The area of employment practice and level of supervision will be predictive of healthcare providers' attitudes and level of structural stigma towards women with prenatal substance misuse.	<i>Provider Attitudes</i>	<i>Q13-Q28, Q40, Q47</i>	<i>Q47</i>
	<i>Provider Structural Stigma</i>	<i>Q32, Q35, Q36, Q47, Q48, Q49, Q50, Q51, Q53, Q54, Q55</i>	<i>Q32, Q35, Q36, Q53</i>
	<i>Area of Practice</i>	<i>Q4</i>	
	<i>Level of Supervision</i>	<i>Q31</i>	
H2: Healthcare providers' expressed statement of their belief of causation of substance misuse will be predictive of their attitudes towards women with prenatal substance misuse	<i>Belief of Causation</i>	<i>Q41, Q42, Q43, Q44, Q45</i>	<i>Q41</i>
	<i>Provider Attitudes</i>	<i>Q13-Q28, Q40, Q47</i>	<i>Q47</i>

<b>Table 3: Employment Disciplines</b>			
Employment Discipline	Original n/%	Employment Discipline	Consolidated n/%
MD-Direct	17 (12.6%)	Medical Doctor	18 (13.3%)
MD-Admin	1 (0.7%)	Administration	5 (3.7%)
Administration	1 (0.7%)	Direct Care Nursing	52 (38.5%)
Direct Care Nursing	52 (38.5%)	Nurse Practitioner/PA	18 (13.3%)
Nurse Practitioner/PA	16 (11.9%)	Social Work	17 (12.6%)
Case Manager	4 (3.0%)	Support Staff	17 (12.6%)
Nursing Management	3 (2.2%)		
Social Work	17 (12.6%)		
Respiratory Therapist	6 (4.4%)		
Music Therapist	1 (0.7%)		
Lactation Consultant	2 (1.5%)		
Pharmacy	1 (0.7%)		
Other	6 (4.4%)		

**Table 4: Inter-Item Correlation, Attitudes Scale**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Hard to like cigarette smokers	1	.437	.703	.399	.638	.398	.636	.434	.650	.467	.643	.487	.653	.482	.676	.491	.378	.379
Uncomfortable working with cigarette smokers		1	.381	.582	.329	.529	.337	.533	.411	.661	.355	.586	.367	.601	.375	.605	.294	.227
Hard to like pregnant problem drinkers			1	.568	.757	.420	.775	.469	.698	.427	.798	.498	.750	.522	.607	.465	.377	.440
Uncomfortable working with pregnant problem drinkers				1	.484	.706	.514	.752	.436	.668	.521	.732	.463	.734	.363	.704	.355	.367
Hard to like pregnant heroin users					1	.529	.969	.526	.679	.445	.953	.548	.885	.563	.698	.504	.248	.467
Uncomfortable working with pregnant heroin users						1	.526	.929	.513	.757	.519	.922	.491	.872	.523	.828	.338	.521
Hard to like pregnant cocaine users							1	.561	.704	.455	.972	.563	.880	.572	.689	.513	.313	.460
Uncomfortable working with pregnant cocaine users								1	.519	.752	.547	.938	.492	.883	.503	.839	.356	.490
Hard to like pregnant marijuana users									1	.623	.717	.530	.689	.547	.672	.539	.456	.374
Uncomfortable working with pregnant marijuana users										1	.459	.774	.453	.766	.488	.749	.405	.328

**Table 4: Inter-Item Correlation, Attitudes Scale (continued)**

[illegible]

Table 5: Inter-Item Correlation Matrix for Structural Stigmas

[illegible]

<b>Table 6: General Beliefs and Attitudes</b>					
<b>QUESTION</b> n=117	<b>STRONGLY AGREE</b>	<b>AGREE</b>	<b>UNDECIDED</b>	<b>DISAGREE</b>	<b>STRONGLY DISAGREE</b>
Believe hospital staff can provide better, non-medical care	8 (6.8%)	30 (25.6%)	44(37.6%)	28 (23.9%)	7 (6.0%)
State should impose greater sanctions on a mother with substance misuse during preg...	14 (12.0%)	44 (37.6%)	33 (28.2%)	15 (12.8%)	11 (9.4%)
Schooling prepared me to discuss health risk behaviors with patients	18 (15.1%)	62 (52.1%)	13 (10.9%)	24 (20.2%)	2 (1.7%)
Satisfied with the level of communication between disciplines	23 (19.3%)	63 (52.9%)	14 (11.8%)	17 (14.3%)	2 (1.7%)
Organization provides a supportive environment for mothers	12 (10.1%)	40 (33.6%)	41 (34.5%)	26 (21.8%)	0 (0%)
Believe more punitive measures should be taken against	11 (9.4%)	40 (34.2%)	33 (28.2%)	21 (17.9%)	12 (10.3%)
Burned out working with mothers and babies with drug use/exposure	1 (0.9%)	9 (7.7%)	11 (9.4%)	82 (70.1%)	14 (12.0%)
Person could quit illicit drug use if they really wanted to	3 (2.6%)	39 (33.3%)	26 (22.2%)	35 (29.9%)	14 (12.0%)
Person who uses illicit drugs during pregnancy cares more about drugs than the baby	7 (6.0%)	36 (30.8%)	19 (16.2%)	44 (37.6%)	11 (9.4%)
Empathy for a pregnant/post-partum woman with substance misuse	14 (12.0%)	68 (58.1%)	25 (21.4%)	10 (8.5%)	0 (0%)

<b>Table 7: Correlation of Stigma and Attitudes</b>		
	Attitudes Scale	P
Stigma	.602**	.000

*Correlation is significant at the 0.01 level (2 tailed)*

<b>Table 8: Box's M Test of Equality of Covariance Matrices</b>					
Box's M	44.633	F (0.876)	df1=39	Df2=1480.015	p>0.688

<b>Table 9: Inter-Item Correlation Causation Matrix</b>					
	1	2	3	4	5
Believe addiction is a medical condition.	1.000	.357	.346	.280	.466
Believe addiction is caused by a moral flaw.		1.000	.391	.397	.467
Believe addiction is selfish.			1.000	.508	.527
Person could quit illicit drug use if they really wanted to.				1.000	.641
Person who uses illicit drugs during pregnancy cares more about drugs than the baby.					1.000

<b>Table 10: General Demographics of Respondents</b>		
<b>Demographic Characteristics</b>	<b>N</b>	<b>%</b>
<b>Race</b>		
American Indian or Alaska Native	1	.8
Black or African American	6	4.7
Asian	3	2.4
White/ Caucasian	117	92.1
<b>Ethnicity</b>		
Hispanic or Latino	3	2.4
Not Hispanic or Latino	124	97.6
<b>Gender-Identify</b>		
Female	117	93.6
Male	8	6.4
<b>Currently working with mother with substance misuse or affected baby</b>		
Yes	110	86.6
No	17	13.4
<b>Percentage of work week in direct contact</b>		
0-25%	63	49.6
26-50%	39	30.7
51-75%	16	12.6
76-100%	9	7.1
<b>Practiced in Healthcare Field</b>		
0-4 years	33	26.0
5-9 years	24	18.9
10-14 years	22	17.3
15-19 years	13	10.2
20-24 years	8	6.3
25+ years	27	21.3



<b>Table 11: MANOVA-Difference in Attitudes and Stigma for Employment Disciplines and Supervision Level</b>							
Variable	Pillai's Trace	F	Hypothesis df	Err df	P	Partial Eta Squared	Observed Power
Employment Discipline	0.281	3.243	10	198	.001*	.141	.987
Supervision	0.116	2.039	6	198	.062	.058	.732
Employment Discipline* Supervision	0.211	1.295	18	198	.194	.105	.837

*Statistically significant difference:  $p < 0.05$ \**

<b>Table 12: Post-Hoc Analysis Test for Factorial MANOVA</b>					
Dependent Variable	Current Employment Discipline		Mean Difference	SD	P
Attitude Scale	MD	Administration	-.70	7.777	1.00
		Direct Care	9.80	4.078	.165
		Nurse	-.14	4.895	1.00
		Nurse	-4.58	4.967	.940
		Practitioner/PA	8.61	4.967	-.513
		Social Worker			
	Administration	Support Staff			
		Medical Doctor	.70	7.777	1.00
		Direct Care	10.50	7.186	.690
		Nurse	.56	7.680	1.00
		Nurse	-3.88	7.725	.996
		Practitioner	9.31	7.725	.833
	Direct Care	Support Staff			
		Medical Doctor	-9.80	4.078	.165
		Administration	-10.50	7.186	.690
		Nurse	-9.94	3.890	.118
		Practitioner/PA	-14.37	3.979	.006*
		Social Worker	-1.19	3.979	1.00
	Nurse	Support Staff			
		Medical Doctor	.14	4.895	1.00
		Administration	-.56	7.680	1.00
		Direct Care	9.94	3.890	.268
		Nurse	-4.43	4.814	.973
		Social Worker	8.75	4.814	.654
	Practitioner	Support Staff			
		Medical Doctor	4.58	4.967	.973
		Administration	3.88	7.725	.988
		Direct Care	14.37	3.979	.029*
		Nurse	4.43	4.814	.973
		Nurse	13.19	4.866	.211
	Social Worker	Practitioner/PA			
		Support Staff			
		Medical Doctor	-8.61	4.967	.699
		Administration	-9.31	7.725	.917
		Direct Care	1.19	3.979	1.00
		Nurse	-8.75	4.814	.654
	Support Staff	Nurse	-13.19	4.886	.211
		Practitioner/PA			
		Social Worker			

Stigma	MD	Administration	3.47	2.676	.787
		Direct Care	3.73	1.403	.093
		Nurse	-.18	1.685	1.00
		Nurse	.28	1.709	1.00
		Practitioner/PA	.53	1.709	1.00
		Social Worker			
	Administration	Support Staff			
		Medical Doctor	-3.47	2.676	.787
		Direct Care	.27	2.473	1.00
		Nurse	-3.65	2.643	.739
		Nurse	-3.19	2.658	.836
		Practitioner/PA	-2.94	2.658	.878
	Direct Care Nurse	Social Worker			
		Support Staff			
		Medical Doctor	-3.73	1.403	.098
		Administration	-.27	2.473	1.00
		Nurse	-3.91	1.339	.048*
		Practitioner/PA	-3.45	1.369	.128
	Nurse Practitioner/PA	Social Worker	-3.20	1.369	.189
		Support Staff			
		Medical Doctor	.18	1.685	1.00
		Administration	3.65	2.643	.739
		Direct Care	3.91	1.339	.048*
		Nurse	.46	1.656	1.00
	Social Worker	Social Worker	.71	1.656	.998
		Support Staff			
		Medical Doctor	-.28	1.709	1.00
		Administration	3.19	2.658	.836
		Direct Care	3.45	1.369	.128
		Nurse	-.46	1.656	1.00
	Support Staff	Nurse	.25	1.681	1.00
		Practitioner/PA			
		Support Staff			
		Medical Doctor	-.53	1.709	1.00
		Administration	2.94	2.658	.878
		Direct Care	3.20	1.369	.189
		Nurse	-.71	1.656	.998
		Nurse	-.25	-.25	1.00
		Practitioner/PA			
		Social Worker			

$p < 0.05^*$

<b>Table 13: Multivariate Means</b>			
Attitudes Scale	Role	Supervision	Mean(SD)
	Medical Doctor	Strongly Agree Agree	66.67 (17.5) 62.00 (11.3)
	Administration	Strongly Agree Agree	64.00 (22.9) 70.00 (-)
	Direct Care Nurse	Strongly Agree Agree Undecided Disagree	57.33 (17.44) 56.00 (12.62) 32.00 (11.31) 39 (-)
	Nurse Practitioner/PA	Strongly Agree Agree Undecided	71.33 (20.11) 65.15 (10.77) 40 (-)
	Social Worker	Strongly Agree Agree Undecided	73.4 (10.09) 65.67 (5.16) 69.80 (15.35)
	Support Staff	Strongly Agree Agree Undecided Disagree	59.25 (16.52) 49.17 (12.48) 56.00 (18.08) 66.33 (7.64)
Stigma Scale	Medical Doctor	Strongly Agree Agree	37.67 (5.22) 34.67 (3.45)
	Administration	Strongly Agree Agree	32.33 (10.50) 35 (-)
	Direct Care Nurse	Strongly Agree Agree Undecided Disagree	33.33 (5.31) 32.88 (4.15) 32.50 (2.12) 21 (-)
	Nurse Practitioner/PA	Strongly Agree Agree Undecided	35.67 (4.619) 37.54 (4.52) 28 (-)
	Social Worker	Strongly Agree Agree Undecided	35.60 (3.44) 34.67 (3.98) 38.60 (5.94)
	Support Staff	Strongly Agree Agree Undecided Disagree	39.00 (5.35) 34.33 (5.13) 34.67 (2.89) 36.33 (5.86)

Attitudes Scale ( $F_{(10,198)}=4.63, p=.001, \eta^2=0.189$ )

Stigma levels ( $F_{(6,198)}=2.64, p < .05, \eta^2=0.118$ )

<b>Table 14: Correlation-Causation of Substance Misuse</b>		
	Attitudes Scale	P
Causation of Use	.612**	.000

*Correlation is significant at the 0.01 level (2 tailed)*

<b>Table 15: Empathy Score by Discipline</b>					
POSITION	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
MD-All (n=15)	0 (0%)	0 (0%)	2 (13.33%)	9 (60.00%)	4 (26.67%)
Administration (n=4)	0 (0%)	1 (25.00%)	1 (25.00%)	1 (25.00%)	1 (25.00%)
Direct Care Nursing (n=49)	0 (0%)	6 (12.24%)	13 (26.53%)	30 (61.22%)	0 (0%)
NP/PA (n=17)	0 (0%)	2 (11.76%)	2 (11.76%)	11 (64.71%)	2 (11.76%)
Social Work (n=16)	0 (0%)	0 (0%)	2 (12.50%)	10 (62.50%)	4 (25.00%)
Support Staff (n=16)	0 (0%)	1 (6.25%)	5 (31.25%)	7 (43.75%)	3 (18.75%)
Total (n=117)	0 (0%)	10 (8.55%)	25 (21.37%)	68 (58.12%)	14 (11.97%)

<b>Table 16: Overall Attitudes by Employment Discipline</b>					
POSITION	EXTREMELY NEGATIVE	NEGATIVE	NEUTRAL	POSITIVE	EXTREMELY POSITIVE
MD-Direct (n =14)	1 (7.14%)	1 (7.14%)	5 (35.71%)	5 (35.71%)	2 (14.29%)
MD-Admin (n=1)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Direct Care Nursing (n=49)	7 (14.29%)	10 (20.41%)	21 (42.86%)	10 (20.41%)	1 (2.04%)
NP/PA (n=17)	0 (0%)	3 (17.65%)	6 (35.29%)	6 (35.29%)	2 (11.76%)
Case Manager (n=4)	0 (0%)	3 (75.00%)	0 (0%)	1 (25%)	0 (0%)
Nursing Management (n=3)	0 (0%)	1 (33.33%)	1 (33.33%)	1 (33.33%)	0 (0%)
Social Work (n=16)	0 (0%)	1 (6.25%)	8 (50.00%)	5 (31.25%)	2 (12.50%)
Respiratory Therapist (n=5)	0 (0%)	4 (80.00%)	1 (20.00%)	0 (0%)	0 (0%)
Music Therapist (n=1)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Lactation Consultant (n=2)	0 (0%)	0 (0%)	1 (50.00%)	1 (50.00%)	0 (0%)
Nursing Educator (n=1)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)
Pharmacy (n=1)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Non Clinical (n=3)	0 (0%)	0 (0%)	1 (33.33%)	2 (66.67)	0 (0%)
Total (n=117)	8 (6.84%)	23 (19.66%)	44 (37.61%)	34 (29.06%)	8 (6.84%)

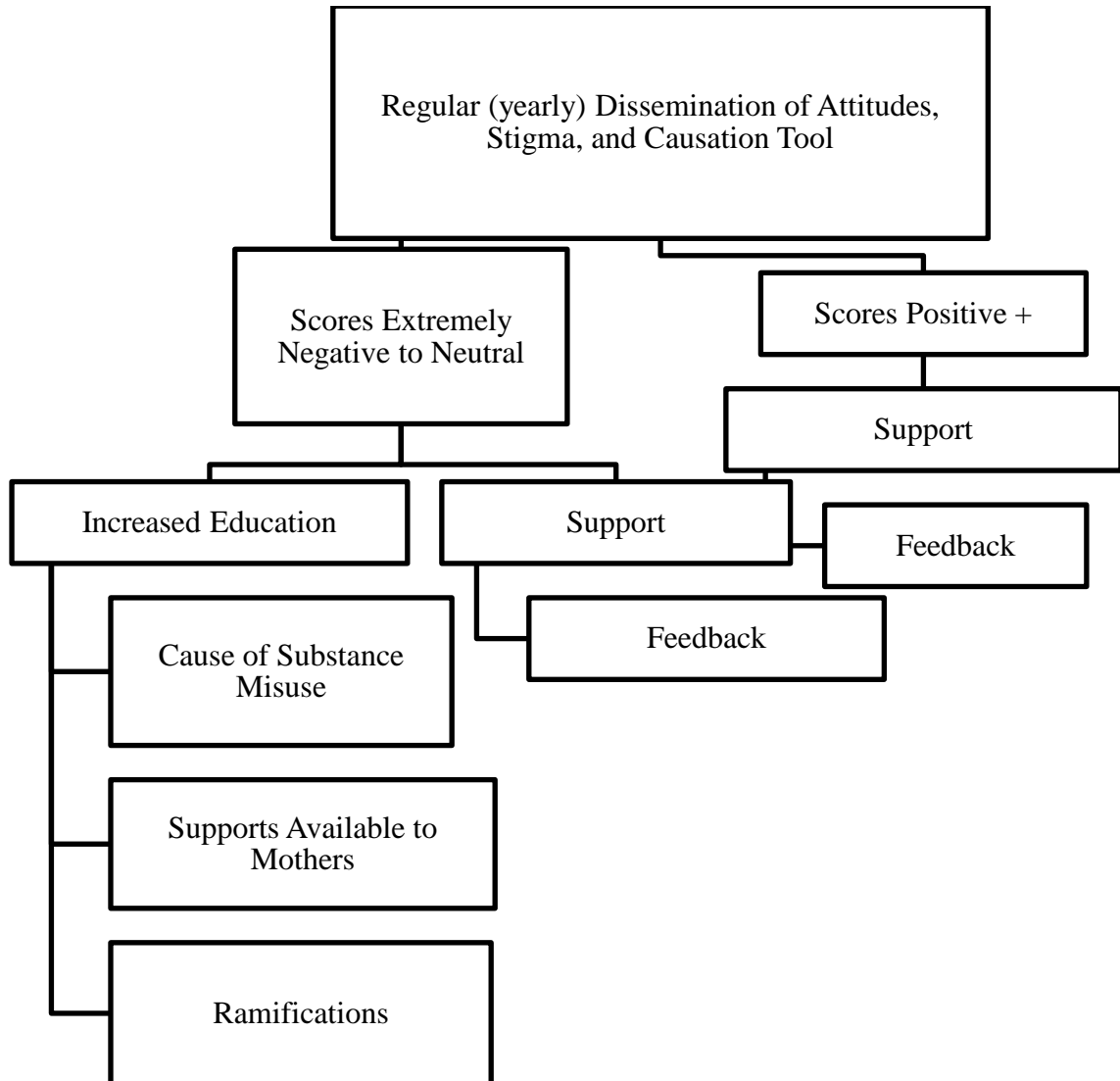
<b>Table 17: Overall Stigma Level by Discipline</b>					
POSITION	EXTREMELY NEGATIVE	NEGATIVE	NEUTRAL	POSITIVE	EXTREMELY POSITIVE
MD-Direct (n =14)	0 (0%)	0 (0%)	9 (64.29%)	5 (35.71%)	0 (0%)
MD-Admin (n=1)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)
Direct Care Nursing (n=49)	0 (0%)	11 (22.45%)	31 (63.27%)	7 (14.29%)	0 (0%)
NP/PA (n=17)	0 (0%)	1 (5.88%)	8 (47.06)	8 (47.06%)	0 (0%)
Case Manager (n=4)	0 (0%)	1 (25.00%)	2 (50.00%)	1 (25.00%)	0 (0%)
Nursing Management (n=3)	0 (0%)	1 (33.33%)	2 (66.67%)	0 (0%)	0 (0%)
Social Work (n=16)	0 (0%)	0 (0%)	12 (75.00%)	4 (25.0%)	0 (0%)
Respiratory Therapist (n=5)	0 (0%)	1 (20.00%)	3 (60.00%)	1 (20.0%)	0 (0%)
Music Therapist (n=1)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Lactation Consultant (n=2)	0 (0%)	0 (0%)	2 (100%)	0 (0%)	0 (0%)
Nursing Educator (n=1)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Pharmacy (n=1)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Non Clinical (n=3)	0 (0%)	0 (0%)	1 (33.33%)	2 (66.67%)	0 (0%)
Total (n=117)	0 (0%)	15 (12.82%)	71 (60.68%)	31 (26.50%)	0 (0%)

<b>Table 18: Causation of Substance Misuse by Employment Discipline</b>					
POSITION	HIGHLY MORAL FLAW	MORAL FLAW	NEUTRAL	DISEASE	HIGHLY DISEASE
MD-All (n=15)	0 (0%)	0 (0%)	4 (26.67%)	8 (53.33%)	3 (20.00%)
Administration (n=4)	0 (0%)	1 (25.0%)	1 (25.00%)	2 (50.00%)	0 (0%)
Direct Care Nursing (n=49)	0 (0%)	8 (16.33%)	28 (57.14%)	11 (22.45%)	2 (4.08%)
NP/PA (n=17)	0 (0%)	1 (5.88%)	4 (23.53%)	9 (52.94%)	3 (17.65%)
Social Work (n=16)	0 (0%)	0 (0%)	1 (6.25%)	9 (56.25%)	6 (37.50)
Support Staff (n=16)	0 (0%)	2 (12.50%)	10 (62.50%)	2 (12.50%)	2 (12.50%)
Total (n=117)	0 (0%)	12 (10.26%)	48 (41.03%)	41 (35.04%)	16 (13.68%)



**Figure 1: Education Protocol**

Objective: To promote a hospital culture of support and education for employees, across disciplines, working with NAS.



**Figure 2: Expectation and Engagement Protocol**

<b>Caregiver</b>				
Caregiver	Day	Time	Services	Comfort Level
Mother			Bath	2/5
Father			Bottle Feed	😊😊😊😊😊
Mother			Diaper Change	I was scared, It was hard, I feel good...

<b>Staff</b>						
Caregiver	Day	Time	Services	Comfort Level	Support Offered	Provider
Mother			Bath	2.5	Education; Verbal praise	KET
Mother			Bottle Feed	4/5	Demonstrated Feed	KET

## **Appendix A: Invitation to Participate (institution)**



### **SCHOOL OF SOCIAL WORK**

INDIANA UNIVERSITY

Greetings,

I am writing to request your institution's participation in an important research study aimed at discovering new information about the effects on healthcare providers whom work with prenatal substance misuse. The information is important for many reasons. Drug use during pregnancy is a public health crisis. Healthcare providers face highly stressful work situations. More needs to be done to support healthcare providers and exploring the attitudes and perceptions of healthcare providers may offer insight to aid those in the workforce and the families affected by prenatal substance misuse. In addition, this project will provide information that may inform the way healthcare institutions approach prenatal substance misuse.

Data collection will consist of an internet-based survey, eliciting no identifying information. The goal is for the survey to be distributed to all employees, across disciplines (I.e. neonatologist, nursing, social work, chaplains, physical/occupational/speech therapy, dietary, lactation consultants, respiratory therapists, interpreters, management, HROB, family care, specialty departments, etc.). The survey will be available to be sent as a link on the hospital e-mail distribution list serve. The research study will undergo rigorous review through a panel of doctoral level researchers as well as the Indiana University IRB.

Participation in the study is voluntary and participants may stop at any time. I will not have employee personal information and will not contact them for further information.

If you have any questions about this survey, please contact Kristin Trainor. Thank for your commitment to the healthcare profession and for your consideration to participate.

Respectfully,

Kristin Trainor, MSW, LCSW  
Indiana University School of Social Work  
902 W New York Street ES 4138  
Indianapolis, Indiana

## Appendix B: Invitation to Participate (individual)



### SCHOOL OF SOCIAL WORK

INDIANA UNIVERSITY

Greetings Healthcare Providers,

I am writing to request your participation in an important research study aimed at discovering new information about the effects on healthcare providers who work with prenatal substance misuse. The information is important for many reasons. Drug use during pregnancy is a public health crisis. Healthcare providers face highly stressful work situations. More needs to be done to support healthcare providers and exploring the attitudes and perceptions of healthcare providers may offer insight to aid those in the workforce and the families affected by prenatal substance misuse. In addition, this project will provide information that may inform the way healthcare institutions approach prenatal substance misuse. This study is called Prenatal Substance Misuse Attitudes and Perceptions. This web-based study should take 10-15 minutes to complete. I would appreciate it greatly if you would complete the survey.

Participation in the study is voluntary and you may stop at any time. You are receiving this e-mail through your employer's listserv. I do not have your personal information and will not contact you for further information. I will not know who took the survey and who did not.

If you have any questions about this survey, please contact Kristin Trainor. In addition, more information about the study can be found by reading the study information sheet on the first page of the survey.

If you would like to participate, please click on the following link:

I look forward to your participation and am thankful for your commitment to the healthcare profession.

Respectfully,

Kristin Trainor, MSW, LCSW  
Indiana University School of Social Work  
902 W New York Street ES 4138  
Indianapolis, Indiana

## Appendix C: Study Timeframe Letter



**SCHOOL OF SOCIAL WORK**  
INDIANA UNIVERSITY

Greetings!

I would like to take the opportunity to thank you for your support in the Prenatal Substance Misuse Attitudes and Perceptions study. I greatly appreciate the time that your institution has spent forwarding the survey to your associates. I will begin data analysis on \_\_\_\_\_. If you have not yet had a chance to forward the survey, I would ask that you do so before the survey closes on \_\_\_\_\_.

Again, thank you for your help and support. Please contact me requesting study results if you are interested in the outcomes of this study. Should you have any questions or concerns, please do not hesitate to contact me.

Respectfully,

Kristin Trainor, MSW, LCSW  
Indiana University School of Social Work  
902 W New York Street ES 4138  
Indianapolis, Indiana

## Appendix D: Participant Reminder Letter



Greetings Healthcare Providers,

This e-mail is a reminder request for your participation in an important research study aimed at discovering new information the effects on healthcare providers whom work with prenatal substance misuse. The information is important for many reasons. Drug use during pregnancy is a public health crisis. Healthcare providers face highly stressful work situations. More needs to be done to support healthcare providers, and exploring the attitudes and perceptions of healthcare providers may offer insight to aid those in the workforce and the families affected by prenatal substance misuse. In addition, this project will provide information that may inform the way healthcare institutions approach prenatal substance misuse. This study is called Prenatal Substance Misuse Attitudes and Perceptions. This web-based study should take only 15-30 minutes to complete. I would appreciate it greatly if you would complete the survey.

Participation in the study is voluntary and you may stop at any time. You are receiving this e-mail through your employer's listserv. I do not have your personal information and will not contact you for further information. I will not know who took the survey and who did not.

If you have any questions about this survey, please contact Kristin Trainor. In addition, more information about the study can be found by reading the study information sheet on the first page of the survey.

If you would like to participate, please click on the following link:

I look forward to your participation and am thankful for your commitment to the healthcare profession.

Respectfully,

Kristin Trainor, MSW, LCSW  
Indiana University School of Social Work  
902 W New York Street ES 4138  
Indianapolis, Indiana

## **Appendix E: Modification Consent**

**Kristin Trainor**

to e.silins

Dear Mr. Silins,

I am doctoral candidate at Indiana University School of Social Work in Indianapolis, Indiana, USA. My research area lies in attitudes of health care providers (across disciplines) of prenatal substance misuse.

I am seeking access and permission to use your questionnaire from your study on: The influence of structured education and clinical experience on the attitudes of medical students towards substance misusers. The questionnaire may be slightly modified.

If you would like further information regarding the proposed study, I am happy to oblige. I appreciate your consideration.

Best regards,  
Kristin Trainor MSW, LCSW  
Doctoral Candidate  
Indiana University School of Social Work

**Edmund Silins**

Oc  
t 8

Hi Kristin. Sorry for the delay in getting back to you on this but I wanted to run your request past the CI. You are more than welcome to use the survey or a modified form of it, please cite the paper as the source if relevant.

Best of luck with your research!

Cheers,

Ed

## **Appendix F: Indiana University Study Information Sheet for Research**

### **Prenatal Substance Misuse Attitudes and Perceptions**

#### **About this research**

You are being asked to participate in a research study. Scientists do research to answer important questions which might help change or improve the way we do things in the future.

#### **Taking part in this research study is voluntary**

You may choose not to take part in the study or may choose to leave the study at any time. Deciding not to participate, or deciding to leave the study later, will not result in any penalty or loss of benefits to which you are entitled and will not affect your relationship with Ascension Health.

This form will give you information about the study to help you decide whether you want to participate. Please read this form, and ask any questions you have, before agreeing to be in the study.

#### **WHY IS THIS RESEARCH BEING DONE?**

The purpose of this study is to offer insight to aid health care practitioners and the families affected by prenatal substance misuse.

You were selected as a possible participant because of your employment within the healthcare field.



### **WHAT WILL HAPPEN DURING THE STUDY?**

The study is being conducted by Kristin Trainor, Indiana University School of Social Work.

If you agree to be in the study, you will complete a 10-15 minute web-based survey. You may end the survey at any time. There is limited potential harm to participate. However, you may have the potential to experience negative or uncomfortable thoughts associated with subject materials. There is limited risk of loss of confidentiality as the researcher will not have your personal information.

### **HOW WILL MY INFORMATION BE PROTECTED?**

Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. No information which could identify you will be shared in publications about this study. Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates, the Indiana University Institutional Review Board or its designees and the Office for Human Research Protections (OHRP), who may need to access the research records.

### **WILL I BE PAID TO PARTICIPATE?**

Upon completion of the survey you will have the opportunity to participate in a drawing to win a \$10 Amazon gift card. One (1) participant per every 250 participants in the drawing will be randomly selected for the \$10 Amazon gift card. After completing the survey, if you choose to enter the drawing, you will be taken to a new survey to enter ONLY your contact information of name and e-mail address. Your name will not be

linked to your survey answers as it will be entered into a new domain for the drawing opportunity. The drawing is OPTIONAL.

### **WHO SHOULD I CALL WITH QUESTIONS OR PROBLEMS?**

For questions about the study or a research-related injury, contact the researcher, Kristin Trainor. If you cannot reach the researcher, please contact the IU Human Subjects Office at 800-696-2949 or at [irb@iu.edu](mailto:irb@iu.edu)

For questions about your rights as a research participant, to discuss problems, complaints, or concerns about a research study, or to obtain information or to offer input, please contact the IU Human Subjects Office at 800-696-2949 or at [irb@iu.edu](mailto:irb@iu.edu).

### **CAN I WITHDRAW FROM THE STUDY?**

If you decide to participate in this study, you can change your mind and decide to leave the study at any time in the future. The study team will help you withdraw from the study safely. If you decide to withdraw, you may simply stop taking the survey.

Incomplete surveys will be terminated.

☐ I understand and choose to continue.

☐ I DO NOT choose to continue.

## Prenatal Substance Misuse Attitudes and Perceptions Tool

This survey is intended to elicit your responses to questions related to basic demographic information and attitudes towards drug use in pregnancy. Your participation is greatly appreciated.

### A. BACKGROUND INFORMATION

**Please check the most accurate response.**

1. I currently practice in a maternal, fetal, or pediatric setting?

\_\_\_\_\_ *Yes*      \_\_\_\_\_ *No*

2. I hold the following degree/licensure: **Please check the highest level of degree attained.**

High School: \_\_\_\_\_ *Diploma*      \_\_\_\_\_ *GED*

College: \_\_\_\_\_ *Associates*      \_\_\_\_\_ *B.A./B.S.*      \_\_\_\_\_ *B.S.W. (Social Work)*

Masters: \_\_\_\_\_ *MSW*      \_\_\_\_\_ *MBA*      \_\_\_\_\_ *MPH*      \_\_\_\_\_ *MHA*

Nursing: \_\_\_\_\_ *L.P.N*      \_\_\_\_\_ *R.N.*      \_\_\_\_\_ *B.S.N.*      \_\_\_\_\_ *N.P.*

Physicians: \_\_\_\_\_ *M.D.*      \_\_\_\_\_ *D.O.*

Advanced training:

\_\_\_\_\_ *OB/GYN*      \_\_\_\_\_ *Neonatology*      \_\_\_\_\_ *Other*

Other: \_\_\_\_\_ *Physical Therapist (P.T.)*

\_\_\_\_\_ *Occupational Therapist(OTR/L)*

\_\_\_\_\_ *Pharmacist (Pharm D)*

\_\_\_\_\_ *Registered Dietician (RD)*

\_\_\_\_\_ *Speech/Language Pathologist (SLP)*

\_\_\_\_\_ *Other (Please specify:\_\_\_\_\_)*

3. My current area of practice is: **Please check the most appropriate response.**

\_\_\_\_\_ *NICU*      \_\_\_\_\_ *PICU*      \_\_\_\_\_ *High Risk Obstetrics*

\_\_\_\_\_ *Pediatrics*      \_\_\_\_\_ *CCN*      \_\_\_\_\_ *Family Care*

\_\_\_\_\_ *Outpatient Clinic*      \_\_\_\_\_ *Other (specify\_\_\_\_\_)*

4. My current employment role is: **Please check the most appropriate response.**

\_\_\_\_\_ *Medical Doctor-Direct Care*      \_\_\_\_\_ *Medical Doctor-Administration only*

\_\_\_\_\_ *Direct Care Nurse*      \_\_\_\_\_ *Nurse Practitioner*

\_\_\_\_\_ *Case Manager*      \_\_\_\_\_ *Lactation Consultant*

<input type="checkbox"/> <i>Nursing Management</i>	<input type="checkbox"/> <i>Nursing Educator</i>
<input type="checkbox"/> <i>Social Worker</i>	<input type="checkbox"/> <i>Pharmacy</i>
<input type="checkbox"/> <i>Child Life</i>	<input type="checkbox"/> <i>Chaplain</i>
<input type="checkbox"/> <i>Dietary</i>	<input type="checkbox"/> <i>Radiology/Imaging</i>
<input type="checkbox"/> <i>Language/Interpretive Services</i>	<input type="checkbox"/> <i>Speech Therapist</i>
<input type="checkbox"/> <i>Respiratory Therapist</i>	<input type="checkbox"/> <i>Occupational Therapist</i>
<input type="checkbox"/> <i>Physical Therapist</i>	<input type="checkbox"/> <i>Music Therapist</i>
<input type="checkbox"/> <i>Unit Representative (UR)</i>	<input type="checkbox"/> <i>Environmental Services</i>
<input type="checkbox"/> <i>Administration</i>	<input type="checkbox"/> <i>Other (Specify: _____)</i>
<input type="checkbox"/> _____)	

5. In my current position, I spend the following percentage of my work week in direct contact (face to face or on the phone) with maternal/fetal or pediatric clients with pregnancy drug use or exposure:

☐ 0 – 25%      ☐ 26 – 50%      ☐ 51 – 75%      ☐ 76 – 100%

6. My current position is:

☐ *Full-time*      ☐ *Part-time*  
☐ *Other (Please specify \_\_\_\_\_)*

7. My race is:

☐ *American Indian or Alaska Native*      ☐ *Black or African American*  
☐ *Native Hawaiian or Other Pacific Islander*      ☐ *Asian*      ☐ *White*  
☐ *Multi-racial*      ☐ *Other (Please specify \_\_\_\_\_)*

8. My ethnicity is:

☐ *Hispanic or Latino*      ☐ *Not Hispanic or Latino*

9. I identify as:

☐ *Female*      ☐ *Male*      ☐ *Other*

**Please provide the most appropriate response.**

10. My age is:

\_\_\_\_\_

11. I have practiced in the health care field for:

☐ 0-4 years    ☐ 5-9 years    ☐ 10-14 years    ☐ 15-19 years    ☐ 20-24 years  
☐ 25+years

12. I currently work with mothers with substance misuse or their affected baby.

☐ yes    ☐ no

## B. Drug Use in Pregnancy

Please mark the circle that most accurately represents your response.

		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	In general, I find it hard to like pregnant cigarette smokers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	I am uncomfortable working with pregnant cigarette smokers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	In general, I find it hard to like pregnant heroin users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	I am uncomfortable working with pregnant heroin users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	In general, I find it hard to like pregnant cocaine users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	I am uncomfortable working with pregnant cocaine users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	In general, I find it hard to like pregnant marijuana users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	I am uncomfortable working with pregnant marijuana users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	In general, I find it hard to like pregnant methamphetamine users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	I am uncomfortable working with pregnant methamphetamine users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	In general, I find it hard to like pregnant opioid users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	I am uncomfortable working with pregnant opioid users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	In general, I find it hard to like pregnant subxone/subutex/methadone/ buphernorphine users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	I am uncomfortable working with pregnant subxone/subutex/methadone/buphernorphine users.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Employment Support

16.	My schooling has prepared me to discuss health risk behaviors with patients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	I receive adequate education and training, on the job, for my current position.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	I am satisfied with the level of professional supervision I receive in my current position.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	I am satisfied with the level of communication between disciplines (social workers, nursing, doctors, etc).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	My organization provides a supportive environment for mothers with prenatal substance abuse within the organization by having and promoting workplace policies that address issues of women and infants with substance abuse/exposure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Drug Use Outcomes

21.	I am satisfied with the level of community support for pregnant addicts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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22.	I am comfortable with the discharge plan for a mother with addiction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23.	I am comfortable with the discharge plan for a child with drug exposure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24.	I believe more punitive measures should be taken against a mother with pregnancy drug misuse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.	I believe hospital staff can provide better, non-medical care for a drug exposed infant than the mother					
26.	I believe mothers with pregnancy drug use should place the child for adoption.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27.	I have become burned out working with mothers and babies with drug use/exposure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28.	I believe addiction is a medical condition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29.	I believe addiction is caused by a moral flaw.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30.	I believe addiction is selfish.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31.	I believe a person could quit illicit drug use if they really wanted to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32.	I believe a person who uses illicit drugs during pregnancy cares more about drugs than the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33.	I believe women who use illicit drugs during pregnancy deserve less privacy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34.	I have empathy for a pregnant/post-partum woman with addiction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35.	I believe a drug exposed infant should never discharge with the mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36.	I believe a mother with illicit drug use should be regularly drug tested.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37.	I am not comfortable leaving a child in a room with their addicted parent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38.	I believe the hospital should impose greater sanctions on a mother with illicit drug use during pregnancy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39.	I believe the state should impose greater sanctions on a mother with drug use during pregnancy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40.	I would go out of my way to work with a mother or baby with drug use/exposure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41.	I prefer not to work with babies with drug exposure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42.	I prefer not to work with pregnant women with addictions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43.	Lastly, what other information would you like this researcher to know about prenatal substance misuse or the effects on health care providers.	None: _____ Response _____ _____				

**Thank you for your participation. Your responses are greatly appreciated.**

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## Curriculum Vitae

Kristin Elise Trainor

### Education:

#### Graduate

Indiana University, Indianapolis, Indiana	PhD	January 2019
Indiana University, South Bend, Indiana	MSW	May 2009

#### Undergraduate

Butler University, Indianapolis, Indiana	BA – Sociology	May 2006
Universidad de Salamanca, Salamanca, Spain		
Foreign Language Certificate		May 2004

### Licensure:

License in Clinical Social Work (LCSW)	Fall 2016
License in Social Work (LSW)	Fall 2009

### Professional Experience:

Private Practice and Training	2015 to present
Private practice for children, adults, and families.	
Contracted by MiniMinds for therapeutic services and adult education	
Contracted by Indiana Community Action Agency to provide training	

#### Ascension Health at St. Vincent

Peyton Manning Children's Hospital Indianapolis, Indiana	Social Worker	2013-2017
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- Medical social worker in Pediatric and NICU departments
- Performed grief counseling, crisis intervention, psychosocial assessments, and resource assistance.
- Provided regular supervision for MSW students
- Provide staff training and development, across disciplines.
- St. Vincent House Committee member, promoted and fundraised for the development of the St. Vincent House
- St. Louise de Marillac Award Nominee
- March of Dimes grant recipient

Unlocking the Spectrum Indianapolis, Indiana	Social Worker	2012-2013
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- Social worker for children with special needs, providing behavior modification programs and family support.

Indiana University Health System Indianapolis, Indiana	Social Worker	2009-2010
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- Medical social worker providing crisis intervention, psychosocial assessments, and discharge planning for patients and their families.

Youth Service Bureau Mishawaka, Indiana Worked with elementary students to identify and implement conflict resolution skills.	Conflict Resolution Specialist	2008- 2009
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Family and Children's Center Mishawaka, Indiana Organized and provided group therapy, play therapy, and individual therapy for children and adults.	Internship; Therapist	2008-2009
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Penn Harris Madison School Corporation Granger, Indiana Assisted with group and individual counseling and conflict resolution for elementary school students.	Internship; Therapist	2008
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Oaklawn Psychiatric Center Elkhart, Indiana Family case manager/visitation supervisor for families working with the Department of Child Services.	Case Manager	2006-2008
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Little Star Center Carmel, Indiana Behavior therapist for children with autism.	Behavior Therapist	2006
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United Way of Central Indiana Indianapolis, Indiana Reviewed grants submitted by youth groups for approval and funding.	Internship; Grant Review	2005-2006
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#### Academic Appointments:

Indiana University School of Social Work Ivy Tech Community College Sociology	Doctoral Research Assistant   Adjunct Faculty	2010-2012  2011-2012
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#### Professional Service:

Use What You've Got Prison Ministry Intern Program Development Created a pilot program for the Indiana Department of Corrections: Rebuilding for Reentry, in collaboration with Dr. Roger Jarjoura.	2012-2014
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Camp Kesem Camp therapist for children who have a family member with cancer.	Volunteer Therapist	2010
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#### Publications:

Bloomquist, K.R., Friedmeyer-Trainor, K., Wood, L., & Kim, H.W. (Fall, 2015).  
 Self-care and Professional Quality of Life: Predictive Factors among MSW  
 Practitioners. *Advances in Social Work*. (16) 2, 292-311.

Friedmeyer-Trainor, K., Vernon, R., & Lynch, D. (2012). Accessibility and agency website design: Stumbling Backwards? A follow up study. *Journal of Technology and Human Service*. (50) 2, 59-71.

Presentations:

Trainor, K.E. (2017, November). *Communication skills: Tools for Human Service Professionals*. Presentation at the Annual Indiana Community Action Association Meeting, French Link, IN.

Trainor, K.E. (2017, November). *Working with Difficult Clients: Strategies for the Front-Line Worker*. Presentation at the Annual Indiana Community Action Association Meeting, French Link, IN.

Trainor, K.E. (2017, September). *Setting Boundaries: Tools and Practice*. Presentation at the Indiana Community Action Association, Indianapolis, IN.

Trainor, K.E. (2015, April). *Prison Re-entry*. Presentation at the Indiana Community Action Association, Indianapolis, IN.

Trainor, K.E. (2015, April). *Cultural Competency*. Presentation at the Indiana Community Action Association, Indianapolis, IN.

Friedmeyer-Trainor, K.E., Vernon, R., & Lynch, D. (2013, November). *Accessibility and Agency Website Design: Implications for Practice and Education*. Presentation at the Annual Baccalaureate Program Directors Meeting on Social Work Education, Dallas, TX.

Trainor, K.E., Bloomquist, K.R., & Kim, H.W. (2012, November). *Social Worker Self-Care: A Tool for Professional Well-being and Effective Practice*. Presentation at the 58th Annual Program Meeting for the Council on Social Work Education, Washington, D.C.

Bloomquist, K.R., Friedmeyer-Trainor, K., & Wood, L. (2012, July). *Social Worker Self-care and Rural Practice*. Presentation at the 37th Annual National Rural Social Work Conference, Nashville, Indiana.

Bloomquist, K.R., Trainor, K., & Wood, L. (2012, April). *Social Worker Self-care and Professional Well-being*. Poster Session at the Indiana University School of Social Work Annual PhD Symposium, Indianapolis, Indiana.

Research:

Prenatal Substance Misuse: Exploring Health Care Providers  
Attitudes and Perceptions 2017-current

Criminal Justice and Evidenced Based Practice in  
Reentry Programming 2011-2014

Family, Inmates, and Reentry: Program Development Collaboration with Dr. Roger Jarjoura and Use What You've Got Prison Ministry	2012-2013
Masters Social Work Direct Accreditation Evaluation Collaboration with Dr. Robert Vernon	2012- 2012
Social Worker Self-Care and Job Satisfaction Collaboration with Kori Bloomquist, MSW, Leila Wood, MSW and Dr. Hea-Won Kim	2011-2012
Technology and Social Service Agencies Collaboration with Dr. Robert Vernon	2010-2011