Examination of the Opioid Crisis - Part II by Julie Denton and Sandra Wood

The physical consequences of chronic opioid use

As early as 1996, Seddon and Savage (1996) identified several issues with the long-term use of opioids for chronic pain management, stating, "physical dependency, tolerance, alterations in endogenous pain modulatory systems, reinforcement of pain, the occurrence of addiction, and the solicitation of opioids by patients for non-pain treatment purposes" (p. 277). The fact that most of the medical community did not heed this warning contributed significantly to the current opioid epidemic. Obviously, responsibility also lies with the person abusing the drugs, because they often medicate away pain rather than doing the hard work of rehabilitation. Rehabilitation involves exercise, diet, and other alternative methods of pain relief, and our culture is focused on "a pill" to fix ailments.

Prevalent effects of chronic opioid use are acute toxicity, respiratory suppression, constipation, depression, and increased perceptions of pain. Ballantyne and Mao (2003) identified that "prolonged opioid use may have hormonal effects that result in reduced fertility, libido, and drive" (p. 1947). Hormonal changes can cause elevated prolactin levels and can lead to lowered levels of estrogen and testosterone, and long-term use can result in immunosuppression with effects on individuals such as infection and cancer, which further diminish health (Ballantyne and Mao, 2003). While the extent of the above effects has not been determined, it is necessary to consider their contribution to comorbid health problems described previously.

Opioid abuse carries additional risks for women, including endocrinopathy, reduced fertility, premature labor, and neonatal risks, as well as greater risk for polypharmacy, cardiac risks, poisoning, and unintentional overdose. Risks for women appear to vary by age, and psychosocial factors may play a significant role in opioid use. Moreover, in addition to the individual health risks, the global burden associated with the disease impacts all of those around the abuser, such as family, co-workers, and the community (Darnall, Stacey, and Chou, 2012).

Increased mortality related to overdose and consequences from disease include HIV, Hepatitis C, and Hepatitis B (Degenhardt-Prof & Prof, 2012). In addition to global disease burden, an increased risk of traffic accidents, falls, drowning, suicides, and violence occurs with opioid use. Driving impaired is common, given that most users see this as a medication they must use around the clock. Baldacchino, Balfour, Passetti, Humphris, and Matthews (2012), in a meta-analysis on the neuropsychological effects of chronic opioid use, found robust impairment in three domains: verbal working memory, cognitive impulsivity (risk taking), and cognitive flexibility (verbal fluency). While providers are encouraged to warn clients regarding operating heavy machinery, there is no mechanism to ensure those who are prescribed opiates will voluntarily refrain from driving or have their driver's licenses suspended.

As healthcare providers, we have all heard people labeled as, "med seeking" and sometimes this label is used to negate or minimize the presence of pain. Unfortunately, a consequence of long-term opioid use is change in pain perception, as the brain provides signals that users need

more pain medication. Long-term use of opioids can lead to development of abnormal sensitivity to pain and tolerance, which is a desensitization and a pro-nociceptive (the perception of pain) process (Ballantyne and Mao, 2003). Inappropriate failure to address pain may lead to illegal means of getting the medication. Providers must assist people in identifying other pain management strategies.

There are some identifiers in looking at increased complaints of pain. Opioid-induced pain can exacerbate the initial pain condition. To help determine the root of the pain, an exacerbation of the underlying health condition would result in focused complaints of pain, while opioid-induced pain tends to be diffuse in nature (Mao, 2002). To complicate this issue, there are emotional aspects to increased pain perceptions, including patients spending more time focusing on their pain, which contributes to their seeking opiates. Another issue to address is whether the pain is a physical manifestation of their depression, anxiety, or other mental health concerns. For many people, identifying a physical symptom is easier than addressing their feelings or working on a traumatic event that is causing their focus to shift towards pain.

A barrier to quantifying the actual physical and emotional effects is that many people who are opiate-dependent combine their use with alcohol, benzodiazepines, tobacco, and cannabis. The current state of the opioid epidemic does not allow data from longitudinal studies. It is an unpleasant reminder of the need to not only assess those medications prescribed, but also substances the person may be using illicitly. Unfortunately, there is no way to know if data regarding trauma resulting in death with those using opiates are collected as part of deaths resulting primarily from opioid use (Degenhardt-Prof & Prof, 2012).

Helping patients confront and manage emotional and mental health aspects of their pain experience is much more complicated than merely teaching providers how to prescribe opioid medication. The identification and management of the underlying emotional components in addiction are vital components of addressing the opioid epidemic.

Social/economic effects of opiate abuse on patients, families, and communities

Chronic pain leads to a desire for relief, prompting use of opioids, giving rapid relief without effort by the person experiencing the pain. That fuels more medication taking, leading to abuse, then dependence. The opiate abuser decreases social interaction while focusing on obtaining and using the prescribed opiate to relieve pain. With chronic use, visits to the emergency department to obtain more opiates increase. The person inevitably is denied opiates, leading to a switch to street opiate-like drugs, such as heroin, which are cheaper and easier to obtain than prescription opiates. The spiral into full scale addiction is complete. The process starts with prescription pills, moves to heroin and many times ends in overdose from fentanyl, which is many times stronger than heroin or any other opioid related substance (O'Donnell and De Mio, 2018).

Due to the strong pull of dependence, the quality of the opioid abusing person's work declines and absenteeism increases. With increasing amounts being spent on drugs, there is less money for food, clothing, shelter, and other essentials. The abuser may lose a job and become

homeless due to inability to pay rent or mortgage payments. This can lead to estrangement from spouse and family. Homelessness further endangers physical and mental health. Due to addiction or possibly underlying mental illness, the person's behavior may become depressed, paranoid, and erratic as the drug hijacks self-control, increases desperation to end withdrawal in any way possible, and increases suspiciousness of those nearby, even those who were previously trusted (Kasarla, 2017).

These negative effects are multiplied if the abuser/addict is a teen or young adult. Because their brains are not fully developed, younger abusers become more easily dependent and are more likely to experience permanent brain changes, diminishing their future capacity to learn and develop mentally and emotionally. Their earning potential and long-term employment success can be jeopardized by such brain changes (Smith, 2018). Additionally, young people are less likely to get treatment, so obtaining an accurate picture of youth use/abuse is challenging (O'Donnell and De Mio, 2018).

As mentioned previously, the lost productivity of the abuser has significant economic effects upon a family in terms of a lower quality of life for all, rather than only the addict. Costs for healthcare and attempts at treatment of the dependency reduce funds available to meet the family's obligations and burden the spouse, if there is one, with increased responsibility as "breadwinner" and primary parent of the family (Meyer, Patel, Rattana, Quock, and Moody, 2014). The decrease in interaction of the addicted individual with spouse and children denies the non-addicted spouse and children of the interaction and parenting previously provided by the abuser. In the case of both parents being opiate dependent, the burden shifts to grandparents, other relatives, or the foster care system that, in many states, is overwhelmed with cases, in great part due to the opioid crisis (Hoban, 2017).

A family may have their healthcare insurance strained due to medical issues of the dependent individual. They may lose coverage if the drug abuser loses a job that previously provided health insurance (Meyer et al., 2014.) The non-addicted spouse's health also declines due to increased responsibilities and stress of dealing with their drug-abusing spouse.

Children born to an opioid-dependent mother suffer Neonatal Abstinence Syndrome (NAS) which causes pain and suffering for the newborn, costs a significant amount to treat, and involves additional hospital days after birth due to the effects on the newborn of the opioid and its withdrawal. NAS can have long-lasting effects on bonding, attachment, attention, activity level, and self-regulation. Such issues can negatively affect academic performance and success later in life. The number of babies born in the United States needing drug withdrawal treatment has quadrupled in the last 15 years - a frightening statistic regarding the future of the U.S. (Hoban, 2016).

As children grow up in a home in which a parent is opioid-dependent, they face anxiety and fear about their life. They may take on the role of parenting their siblings or parents, which greatly increases their stress. If they are removed from their home to care in a relative's home or foster care, they not only miss their parent, but also fear what the future might bring. Children in this situation often have mental health issues such as depression, anxiety, post-traumatic stress,

and other conditions generally not identified or treated, which further puts their lives at risk as adults (Levine, 2018).

Not only do young children and teens suffer from the lack of parenting of the drug-dependent person and a decline in overall living conditions when a parent abuses or is dependent, they may also be at risk for intoxication or overdose due to the presence of unsecured drugs in a home. A young child can find and take opioids, not knowing the danger of such an action. Teens in a family can experiment with drugs left in the home and become dependent themselves or overdose due to a lack of knowledge of the potential dangers of the drugs ingested (Levine, 2018).

When a person is addicted, the entire community suffers. The lost productivity due to unemployment is significant (Fee, 2018). Deaths of addicted individuals because of overdose or serious health-related issues deprive the community of productive contribution to the community's welfare resulting in a town or city that is less successful. Fee (2018) indicated that total societal costs of the opiate epidemic in 2013 were $78.5 billion, and in 2015, just two years later, had increased to $504 billion.

Areas where opiate abuse is high are often pockets of poverty in which few individuals have a chance for a successful life. While some of these places were mired in poverty before the opioid crisis, the level of poverty and despair has worsened since the opioid epidemic began. The taxes lost because these addicted people are not in the work force contribute to a decline in services in an area when public services are more needed than ever (Fee, 2018).

Increased hospitalization costs, which addicted persons often cannot pay, and other serious long-term illness sequelae, such as endocarditis and kidney disease, seriously compromise health, healthcare resources, and public health. A flood of overdoses such as many urban and rural first responders have been experiencing, strains their capacity to deal with other emergencies in their catchment area that also deserve a rapid response to preserve life and minimize harm (Kasarla, 2017).

When a person abuses, then becomes dependent upon opioids, the addict reaches a point of being unable to pay for the needed drug(s). The desire/need for the drug is so strong and withdrawal so painful, many opiate dependent individuals turn to crime to gain the money to buy the drugs they feel they need. Thefts, assaults, robbery, forgery, as well as selling narcotics, can become ways for drug dependent persons to quickly obtain needed cash (Kasarla, 2017). These crimes further diminish the neighborhoods in which they occur and often result in injury or death for others involved or innocent bystanders. Further, switching to the cheaper drug heroin puts abusers in contact with criminals and increases the likelihood they become incarcerated or die of an overdose of an illicit drug (Kasarla, 2017).

Conclusion

As has been detailed above, opioid abuse threatens the abuser, their family, and the community. All people are affected by the crisis, whether or not they experience it first-hand.

The loss in wages and productivity, the rise in health care costs and increased spending necessary by towns, cities, states, and federal governments to deal with the health welfare and criminal justice fallout from this epidemic is significant and will be long lasting (Chavez, 2018).

The opioid epidemic results in more than the addiction process and the sequalae associated with addiction to any substance. The longer the trend continues of overtreatment of pain using opiates, the more the long-term medical and emotional consequences will burden our over-taxed medical systems. A recent article in *USA Today* from the National Center for Health Statistics reports the National Safety Council found the lifetime odds of dying of an accidental opioid overdose were 1 in 96, and the odds of dying by motor vehicle crash were 1 in 103 according to a 2017 report of the Centers for Disease Control (Molina, 2019).

Too little has been done in terms of prevention and treatment of opioid abuse, and therefore, the crisis grows. Part 3 of the series on opioids, will focus on effective current prevention and treatment in dealing with this crisis, as well as what else might be done to address this issue and decrease its hold on our people and country.

References

Baldacchino, A., Balfour, D., Passetti, F., Humphris, G., & Matthews, K. (2012). Neuropsychological consequences of chronic opioid use: A quantitative remiew and meta-analysis. *Neuroscience and Biobehavioral Reviews, 36*, 2056-2068.

Ballantyne, J. C., & Mao, J. (2003). Opioid Therapy for Chronic Pain. *The New England Journal of Medicine, 349*(20), 1943-1953.

Birnbaum, H.G., White, A.G., Schiller, M., Waldman, T., Cleveland, J.M., and Roland, C.L. (2011).Costs of prescription opioid abuse, dependence and misuse in the United States. *Pain Medicine, 12,* 657-667.

Chavez, K. (2018, May 2). The opioid epidemic is a social and economic crisis rising above $1 trillion. Our Pursuit.com. Retrieved from https://ourpursuit.com/the-opioid-epidemic-is-a-social-and-economic-crisis-rising-above-1-trillion/

Darnall, B. D., Stacey, B.R. & Chou, R. (2012, August). Medical and psychological risks and consequences of long-term opioid therapy in women. *Pain Medicine*, 1-31. Retrieved from https://www.researchgate.net/profile/Beth_Darnall2/publication/230705992_Medical_and_Psychological_Risks_and_Consequences_of_Long-Term_Opioid_Therapy_in_Women/links/5a1b9a37a6fdcc50adec8801/Medical-and-Psychological-Risks-and-Consequences-of-Long-Term-Opi_doi10.1111/j.1526-4637.2012.01467x

Degenhardt-Prof, L., & Prof, W. H. (2012, 01 07). Extent of illicit drug use and dependence, and their contributions tot he global burden of disease. *Lancet, 379*(9810), 55-70.

Fee, K. (2018, May 31). The opioid epidemic and its effects: A perspective on what we know from the Federal Reserve Bank of Cleveland. Retrieved from https://www.clevelandfed.org/newsroom-and-events/publications/community-development-briefs/db-20180531-the-opioid-epidemic.aspx

Hoban, B. (2017, October 25). The far reaching effects of the U.S. opioid crisis. *Brookings Now.* Retrieved from https://www.brookings.edu/blog/brookings-now/2017/10/25/the-far-reaching-effects-of-the-us-opioid-crisis/

Kasarla, M. (2017, October 24). The opioid epidemic and its impact on the health care system. *The Hospitalist by Society of Hospital Medicine*. Retrieved from https://www.the-hospitalist.org/hospitalist/article/149858/mental-health/opioid-epidemic-and-its-impact-health-care-system/page/0/1

Kolhatkar, S. (2017, September 18). The cost of the opioid crisis. *The New Yorker, The Financial Page*. Retrieved from https://www.newyorker.com/magazine/2017/09/18/the-cost-of-the-opioid-crisis

Levine, C. (2018, January 2). The statistics don't capture the opioid epidemic's impact on children. *Stat.* Retrieved from https://www.statnews.com/2018/01/02/opioid-epidemic-impact-children/

Mao, J. (2002, December). Opioid-induced abnormal pain sensitivity: implications in clinical opioid therapy. *PAIN, 100*(3), 213-217.

Meyer, R., Patel, A.M., Rattana, S.K., Quock, T.P., and Moody, S.H. (2014, December 1). Prescription opioid abuse: A literature review of the clinical and economic burden in the United States. *Population Health Management, 17* (6), 372-387. Retrieved from https://doi.org/10.1089/pop.2013.0008.

Molina, B. (2019, January 15). Odds of opioids death higher than car carsh. *USA TODAY, p 2B*.

ODonnell, J. and DeMio, T. (2018, December 30). Opioids killing more kids, researchers say. USA Today, p 2B.

Seddon, R., & Savage, M. (1996, May). Long-term Opioid therapy: Assessment of Consequences and Risks. *Journal of Pain and Symptom Management, 11*(5), 274-286. doi:SSDI 0885-3924(95)00202-2

Smith, L. (2018, February 2). The opioid epidemic and its effect on young children. *Bipartisan Policy Center.* Retrieved from https://bipartisanpolicy.org/blog/the-opioid-epidemic-and-its-effect-on-young-children/