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Opioid Addiction/Heroin Overdose Committee Hearing  
Donora Municipal Building  
603 McKean Avenue  
Donora, PA 15033

Good morning Representatives Cook and Benninghoff and members of the Policy Committee. I am Mike Cipoletti, currently the Forensic Science Program Director at Waynesburg University, and formerly a Forensic Scientist and Drug Identification Lab System Quality Specialist with the PA State Police Crime Lab. Thank you for inviting me to speak with you today concerning the ongoing opioid drug abuse epidemic effecting our region and commonwealth.

I believe Representative Cook asked me to attend today because I may be of some assistance in providing the committee with scientific and/or technical perspective concerning the chemistry and recent history of the opioids at the center of this problem. I'll focus on three primary substances: heroin, opioid pain medicines, and fentanyl analogs.

All opioids are extracted or derived from the opium poppy plant (*Papaver Somniferum*), or chemically synthesized in a lab for the purpose of effecting the brain in a similar manner to the natural poppy alkaloids. For example, morphine is found naturally in the opium poppy. Heroin is chemically derived from morphine extracted from the poppy. Commonly prescribed pain management prescription drugs like oxycodone and hydrocodone are derived from other naturally occurring opium poppy alkaloids like thebain and codeine, respectively. Fentanyl is a purely synthetic opioid, conceived in a laboratory and designed to occupy pain receptors in the brain very rapidly, and to act for only a short period of time.

Morphine extractions were first marketed in the early 1800's. Heroin was synthesized from morphine in the 1870's and was thought to be a safer alternative to morphine. Indeed, heroin got its name because officials hoped it would rescue some of the many morphine-addicted Civil War soldiers from their drug dependencies. Hydrocodone and oxycodone were derived and sold in the 1920's. Fentanyl was synthesized in 1960. I believe this brief chemical history points out that these opioids causing all this trouble today are all very chemically-similar and have been available for many years. So, why have these drugs that have been on the pharmaceutical and illicit markets for so many years now being abused in epidemic proportions?

Heroin abuse has been a known problem in the US since the early 1900's. However, it only seemed to impact people in the so-called margins. In the mid-1990's, cheaper, more concentrated heroin product began to circulate in the northeast US. Also in the mid-90's, pharmaceutical companies began to market oxycodone and hydrocodone as long-term treatments for patients with chronic pain. Fentanyl manufacturers also began to market their products for chronic pain sufferers in the mid-90's in the form of epidural patches,



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trans-mucosal lollipops and lozenges, and sublingual sprays. The combination of better, illicit heroin product and the massive increase in availability of opioid pain medicines over the last 25 years is, in my opinion, why we are facing this epidemic today.

I'd like to direct your attention to a slide entitled, "Heroin – Prescription Pain Medicine Cycle." This is a relatively recent graphic developed by DEA Diversion and Control. I think it aptly describes the connection between these substances and their complicity in perpetuating or compounding the opioid addiction phenomenon. Multiple data collection sites indicate that hydrocodone is the most prescribed drug in the US. The CDC and DEA, among others, have alerted that prescription opioid abuse has been the country's fastest growing drug problem since at least the early 2000's. In 2010, the CDC reported that enough prescription pain medicines were prescribed that year to medicate every American adult every 4 hours for 30 days. I think it's fairly clear that a better understanding of the opioid epidemic starts with mining data related to the substances in the heroin-prescription pain medicine cycle.

I encourage the committee to consider policies that utilize such data. PA's Prescription Drug Monitoring Program is a step in the right direction. But what are we doing with this data and what other kinds of data can we collect? OverdoseFreePA is a taxpayer-funded program that collects overdose data from coroner's offices in nine counties (at the time of this writing). The PA Coroners Association Drug Overdose Report publishes overdose data from each county in the commonwealth. How is that data being utilized? Many overdose deaths have been averted more recently with the increased availability of prescription or emergency naloxone treatment (like Narcan). Are we collecting data related to naloxone usage? Are we collecting data from hospital emergency rooms where overdose patients are treated and released? Is that data available to multiple agencies? Again, I would encourage the committee to consider supporting policies that not only collect this type of data, but also publish the data so that it could be correlated and analyzed with other factors by multiple agencies.

Another growing area of concern that I believe should capture the committee's attention is the presence of illicit fentanyl (as opposed to diverted pharmaceutical preparations) and fentanyl analogs in the northeast US and the commonwealth. Although encountered sporadically at various times since the early 1980's, illicitly manufactured fentanyl and fentanyl analog seizures have risen dramatically over the last 5 years according to the National Forensic Laboratory Information System (NFLIS). In the mid 90's, if we encountered fentanyl analogs in case work at the PSP crime lab in Greensburg, it was unusual. Now, according to NFLIS, approximately 10% of the suspected heroin cases submitted to reporting labs in the northeast region actually contained illicit fentanyl or fentanyl analogs. This is concerning because many of the fentanyl analogs, like carfentanil (large animal tranquilizer), 3-methylfentanyl, and acetylfentanyl are thousands of times more potent than fentanyl itself. Microgram quantities can be fatal. These synthetic substances have become more available through channels of the internet known as the dark web or dark net, where special software can enable users to electronically buy



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and sell illicit or illegal products anonymously and in many cases untraceably. It is likely that the availability of these types of drugs through anonymous, dark web sources will only increase.

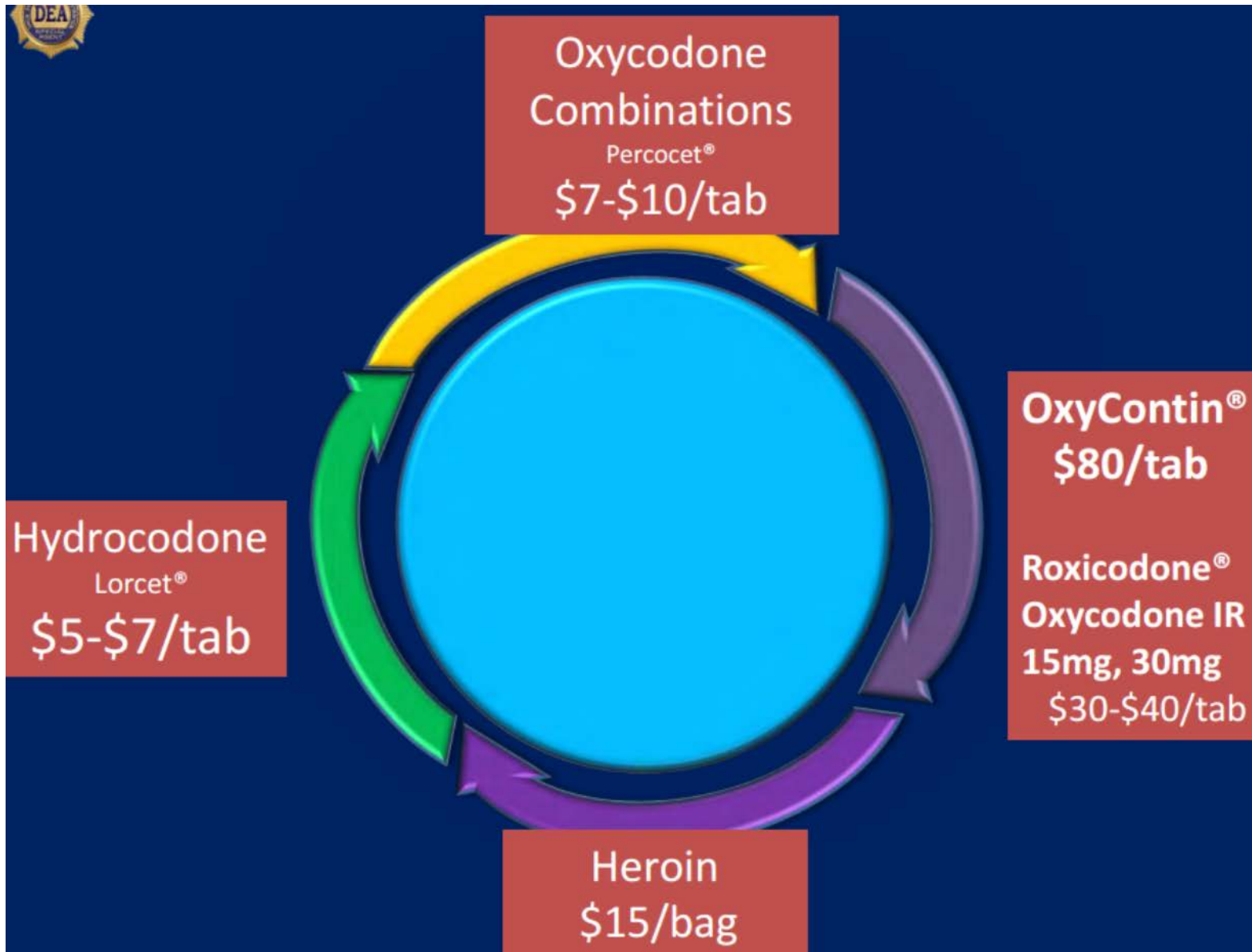
The supply of drugs of abuse will always be present as long as demand exists. I believe we can decrease the demand but we need to increase our drug education IQ's, particularly with our children. The better community leaders as well as parents understand the data which informs this epidemic, the better equipped we will be to anticipate or remediate these types of drug problems. The last statistic I would like to present to you is from The Medicine Abuse Project (Partnership for Drug-free Kids) which reported that although 80% of parents discuss alcohol and marijuana use with their children, only 33% discuss hard drugs like cocaine or heroin. Merely 14% discuss prescription drug abuse with their kids. It's estimated that more than half of the people considered new-users of heroin each year started out by abusing prescription drugs. Understanding the risks involved with prescription drug abuse can only help to inform the decisions that people are likely to face. I think the committee should consider policies that support drug education and again, I think it is vitally important to collect and publish data related to these types of programs. I believe we would find many positive correlations with better informed agencies and communities and lower incidents of opioid drug overdose and abuse.

In closing, I would like to again thank members of the committee as well as Representatives Cook and Benninghoff for allowing me to testify today. I admire your service to your communities and I hope that the information I have provided to you today is of some benefit.

Sincerely,

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Heroin – Prescription Pain Medicine Cycle



- **81%** of teens have discussed marijuana use with their parents
- **80%** of teens have discussed alcohol use with their parents
- *Only* **33%** of teens have discussed drugs like cocaine or heroin with their parents
- *Only* **14%** of teens have discussed prescription drug abuse with their parents
  
- As a result of this lack of information:
  - **33%** of teens think “it’s ok to use prescription drugs that were not prescribed to them.”
  - **24%** of teens have misused or abused a prescription drug at least once.
    - 33% increase from 2008
  - **Nearly 50%** of young people that abuse heroin started their addictions by abusing prescription drugs.