Journal of
Anesthesia & Intensive Care Medicine
ISSN: 2474-7653

Juniper PUBLISHERS key to the Researchers

News
Volume 1 Issue 5 –March 2017
DOI: 10.19080/JAICM.2017.01.555575

J Anest & Inten Care Med
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Smart I Pill Dispenser

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Submission: February 21, 2017; **Published:** March 27, 2017

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News

The economic burden of the opioid epidemic cost the US $78.5 billion a year. A person dies from an opioid overdose every 20 minutes which totaled 30,091 people last year. It is an epidemic that difficult to treat. Opioid overdoses now outnumber the number of deaths from gun violence and motor vehicle accidents per year. Over 90% of patients who overdose on prescription painkillers are prescribed opioids again. Currently in the US there are 100 million people in chronic pain who are dependent on prescription opioids, 1 million veterans from war who are dependent on prescription opioids, 20 million who abuse prescription opioids and there is 30,000 who die from prescription overdoses.

Opioids are necessary to treat pain but the prescription opioid overdose has become a significant national problem. Life expectancy in the US has dropped to 73 years and 8 months largely because of it. The opioid epidemic was rooted by a US government agency JCAHO (Joint Commission on Accreditation of Healthcare Organizations now referred to as the Joint Commission) policy in 2001 that declared pain as the 5th vital sign which has now lead to make prescription opioid abuse/ addiction and the respiratory depression leading to death a complex problem primarily in US. 90% of the opioids consumed in the world are consumed in the United States. JCAHO began an education of the public and of the medical community that patients deserved to be pain free. Opioids were deemed safe to prescribe and deemed to have a low addiction potential. Hydrocodone was prescribed rather freely and the introduction of OxyContin compounded the growing problem. Treatment of Opioid abuse/ addiction and the respiratory depression leading to death is a complex problem to solve. 90% of those who overdose on prescription opioid pain medications are returned back on opioids by their physicians. 80% of the prescription opioids responsible for an overdose come from friends or family. Naloxone and Suboxone, two drugs touted as the solution to the opioid epidemic, unfortunately represents an afterthought. Naloxone an opioid antidote is designed to treat patients already actually overdosed on opioids and Suboxone is designed to treat patients already addicted on opioids. It is a little too late to be effective. In fact, studies report that 90% of patients who overdose on opioids do not get Naloxone or Suboxone. When realization by government agencies that chronic opioids could cause addiction and abuse it was too late. The whole country was basically taking opioids. In 2014 there were 261 million opioids prescribed for a US population of 319 million people. Every single adult in the US could have received a prescription for a bottle of opioids. The governmental policy to the opioid overdose crises was to limit access to opioids with REMS (Risk Evaluation and Mitigation Strategies) and CURES (Controlled Substance Utilization Review Evaluation System). Unfortunately, the policy to limit opioid access it has significantly worsened the problem and has created another problem. The opioid overdose death rate in the US quadrupled in the last 10 years and addicts desperate to recycle their euphoria with access to prescription opioids limited were forced to resort to the cheaper and easily accessible alternatives namely Heroin. The Heroin addiction in the US has quadruple in the last 10 years. Heroin is has become even more deadly because it is now being «cut» with fentanyl and the even more deadly counterpart, car-fentanyl which are at least 100 times more potent than Morphine.

There is no solution to prevent overdoses and allow safe treatment of pain. There are tamper proof opioids, extended release opioids, and abuse deterrent formulations of opioids on the market now to prevent overdoses. There is unfortunately no pivotal evidence to support their to use. All these tamper proof, extended release, and abuse deterrent formulation manipulations of opioids have one weakness - ingestion. The oral route is most common method of administration of opioids and it is the simplest method in which to abuse opioids. It is easy to ingest more drug than prescribed. Doctors prescribe opioid pills. Pharmacists fill opioid prescriptions. But when these patient obtain a bottle of pills from the pharmacy, there is nothing to prevent the patient from taking one pill or ten

pills or the whole bottle of pills. To treat a opioid addict with more opioids is intuitively illogical because the opioid addiction is not treated. It is tantamount to treating an alcoholic with more alcohol without treating the alcoholism. It is a disease that requires more than just a special type of pill. Rather than focusing just on the treatment of pain perhaps the focus should be on the treatment of the patient as whole.

The solution to the opioid epidemic could possibly involve ensuring compliance of of patient to the opioid prescription directions. Patients who are dependent, abuse, and addicted to opioids are different from other patients in terms of their level of compliance. These want to take their opioids, and they will never forget to take them. If they run out supply, they frequently attempt to get more prescription opioids from family members or friends who have an extra or an unused amount before going to illicit sources. Tamperproof, extended release and abuse deterrent formulation used as preventive measures may be employed but it must be understood that patients still overdose and die with these manipulations because of the simple method in which they can be abused. We know this information is likely correct because the death rate from prescription opioids has quadrupled since 2004 and still continues to climb even in their presence. Severely limiting or curtailing opioids amounts to ineffective treatment of pain and encourages patients to progress to Heroin to seek relief. This information suggest that perhaps the treatment paradigm needs to be altered by controlling the physical oral procedure of ingesting these drugs. This can be done with a smart pill dispenser that is biometric fingerprint controlled. The smart pill dispenser would enhance compliance to the prescription by dispensing of pills only as prescribed. The number of pills and the time interval between pills would be controlled preventing an overdose. The biometric fingerprint controller would ensure that only the patient would be able operate the device to dispense the opioid and would also serve to prevent sharing. The patients would receive their prescription opioid for treatment for their pain and forced into compliance by the smart pill dispenser that would prevent over ingestion of the opioid leading to an overdose. The patient would be alive to seek proper treatment of their addiction whether it would be a comorbid medical issue, psychosocial issue or a socioeconomic issue.

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