The Economic Impact of the Opioid Use Disorder Epidemic in America: Nurses’ Call to Action

Kathleen Neville
Marie Foley

Presently, the United States is in the midst of a major, unprecedented public health opioid epidemic that traverses race, ethnicity, gender, age, health status, and socioeconomic level (Brinkley-Rubinstein et al., 2018; Chimbar & Moleta, 2018; Cox & Naegle, 2019). The opioid epidemic, now a crisis in America, reflects the deadliest in history with predictions the death toll will continue to escalate in years to come (Bennet et al., 2018). Despite billions of dollars allocated to address the opioid epidemic, the crisis has worsened, with more deadly outcomes (Johnson, 2018). More opioid-related deaths occur per year than mortality from recent wars, motor vehicle accidents, gun violence, and human immunodeficiency virus (Centers for Disease Control and Prevention [CDC], 2019a; Siegel, 2018; Velander, 2018). In 2016, the national death rate from opioid overdose was 21.7 deaths per 100,000, reflecting a dramatic increase since 2013 when the U.S. rate was 7.6 deaths per 100,000 (National Institute of Drug Abuse, 2019).

Recognizing that nurses are the most trusted of health professionals, account for the largest number of healthcare providers, and have the most frequent interpersonal contact with patients and families, the important role of nurses in combatting the opioid crisis has been recognized (American Association of Colleges of Nursing [AACN], 2019a; American Nurses Association, 2016). The purpose of this integrative review is to examine the economic burden of this national crisis, nurses as frontline providers are called to action to combat the opioid epidemic through the provision of comprehensive, cost-effective, humanistic levels of prevention, including primary, secondary, and tertiary care.

Method

In this integrative review, the authors used interprofessional academic and federal analysis literature published in English between 2013 and 2019. Seven electronic databases were used to identify relevant published articles and included Directory of Open Access Journals, EBSCOhost, Elsevier, Google Scholar, ProQuest Document,
Background

OUDs are so prevalent in the United States that a national emergency to address this public health crisis was declared in 2017 (Broglio & Matzo, 2018; Hedegaard, Wärner, & Minino, 2017). According to CDC data, there were 42,249 opioid-related deaths in 2016 (CDC, 2019b), accounting for more than 66% of all overdose deaths (CDC, 2018). Every day 115 Americans die from opioid overdoses (CDC, 2019a). The mortality rate has increased to 130 deaths per day (AACN, 2019b). More than 1,000 people are treated in emergency departments for misusing prescription opioids (CDC, 2017). “From 1999 to 2016, greater than 630,000 individuals died from a drug overdose, with opioid-related overdoses increasing five times since 1999” (Fornili, 2018, p. 215).

The current opioid epidemic involves the misuse and abuse of both prescription drugs and illegal drugs such as heroin and fentanyl. While it is not the first drug crisis in America, it is the deadliest and most costly in terms of lives lost, decreased life expectancy, lost productivity, crime, violence, and the devastating impact of addiction on families and communities. In earlier epidemics, in the 19th and 20th centuries, the liberal use of laudanum to treat pain and the influx of opium dens from Chinese immigrants in America created a state of alarm, and physicians began addiction management with the use of opioids (Velander, 2018). It was not until the Harrison Act of 1914 that restrictions of opioids for pain management existed. Similar to current, albeit hopefully changing views, the Harrison Act depicted opioid dependence as criminal activity, representing a moral weakness, and was not viewed as a medical condition (Velander, 2018). Under this act, the use of opioids for addiction treatment was prohibited and 30,000 physicians were then prosecuted for unlawful use of prescribing opioids.

It was not until the 1970s that methadone became a legal opioid to treat addiction management in the United States and was authorized to be dispensed in federally designated clinics (Velander, 2018). Buprenorphine, an opioid partial agonist, was developed in the 1970s as an alternative to methadone. Buprenorphine prevents withdrawal symptoms and cravings, prevents abuse of other opioids, and requires less federal regulations for dispensing (can be prescribed in office settings) than methadone. In 2000, the Drug Addiction Treatment Act (DATA) authorized physicians via a DATA waiver to prescribe medication-assisted treatment (MAT) for OUDs. Upon obtaining a DATA waiver, legislation has expanded buprenorphine prescribing practices for nurse practitioners and physician assistants for initial treatment of 30 patients, followed by 100 patients annually (Cadet & Tucker, 2019). In summary, from a historical perspective, “opioid addiction has been recognized as a difficult problem to treat with low recovery rates” (Velander, 2018, p. 1), and remains so today.

This current escalating epidemic has its origins beginning in the 1980s when pharmaceutical companies misinformed physicians that addiction from narcotic use was unlikely. A letter on the risk of opioid addiction published in 1980 in the New England Journal of Medicine concluded that addiction was indeed rare when long-term opioids were prescribed for pain management (Leung et al., 2017). Additionally, Purdue Pharma extensively marketed Oxycontin® (oxycodone) to physicians, providing lucrative incentives for increased prescription use (Macy, 2018). “In 2000, throughout the pharmaceutical industry, $4.04 billion was spent on direct marketing to physicians” (Macy, 2018, p. 32). However, in 2007, “the manufacturers of Oxycontin, along with senior executives...
pled guilty to misleading regulators, physicians and patients regarding the risks of addiction with Oxycontin” (Leung et al., 2017, p. 2194).

Other major factors responsible for this escalating crisis relate to practice changes that occurred in the 1990s. In response to the need to more effectively treat pain, pain assessment as a fifth vital sign became a standard nursing practice initiative in acute care settings, followed by the liberal use of prescribing narcotics to treat patient-reported pain. What followed was a dramatic increase in opioid prescription use, accompanied by highly publicized false security and the myth opioid addiction was not probable and highly unlikely when used for pain management. It is now well known that addiction can occur quickly, even with short-term use; the possibility exists that some individuals can become addicted with only one opioid prescription (Barnett et al., 2017).

Consequently, along with increased prescription use came significantly increased mortality affecting children, teens, adults, and even newborns, who were exposed to opioids in utero and born suffering from neonatal abstinence syndrome.

Especially vulnerable to the risks of opioid use are the elderly, who due to opioid-sedating effects, may succumb to falls, fractures, and other potentially life-threatening events as well as addiction (Barnett et al., 2017). Young adults, equally prevalent among males and females, represent the largest numbers of heroin users (Gicero et al., 2014; Fogger & McGuiness, 2015).

However, the greatest mortality due to opioid-analgesia has occurred in the 55-64 age group (Chen et al., 2014). Between the years 1999 and 2013, the mortality rate from opioid use for analgesia resulted in a nearly quadrupled overdose rate (Sofer, 2019; Substance Abuse and Mental Health Services Administration [SAMHSA], 2019a). Over the last 3 years, there has been a decline in the rate of opioid prescriptions, a 19% reduction since 2006 (Sofer, 2019). However, this decrease in prescribing has not significantly impacted opioid use and related overdoses.

Additional factors fueling the epidemic are illicit drugs. These drugs include the influx of heroin from Mexico, as well as the rise of extremely potent synthetic opioids such as fentanyl and carfentanil, which is 10,000 times more potent than morphine, and tramadol (CDC, 2019c; Velander, 2018). Once prescription drugs became unattainable, a typical pattern resulted in illicit street drug use, consisting of predominantly heroin, but frequently combined with additional potentially lethal substances resulting in an increased mortality rate from overdose since 2010 (CDC, 2017).

### The Economic Consequences of the Opioid Epidemic

The opioid crisis in America has created a tremendous economic burden. According to the Council of Economic Advisors (CEA, 2017), “in 2015, the economic cost of the opioid crisis was $504.0 billion or 2.8% of the gross domestic product” (p. 1) and has risen substantially (see Table 1). Since 2001, figures reflect the costs exceeding $1 trillion (Rhyan, 2017). These figures may reasonably be underestimated, predominantly due to underreporting of fatalities due to heroin and other illicit drug use, as well as the associated incidence of suicide.

In 2018, the estimated costs to the U.S. economy from the opioid epidemic rose to $631 billion (Siegel, 2019). Critical components of this financial burden and estimates of percentage of specific expenditures are as follows: health care (33%), premature death (40%), criminal justice (6%), child and family assistance and educational programs (6%), and lost productivity (15%) (see Table 2).

The cost of premature fatalities is due to lost potential earnings. It is estimated by the “value of a statistical life” (CEA, 2017, p. 3), which is age-depen-
dent and can range from $221.6 billion to $549.8 billion. It was estimated the total cost of nonfatal opioid use as a result of lost productivity, health care, and criminal justice system costs were $72.7 billion in 2015 (CEA, 2017) and an estimated overall societal cost of $78.5 billion in 2016 (Leslie et al., 2019). Lost productivity, specifically, absenteeism and work impairment, involves not only the abuser, but also family members, close friends, and associates.

Criminal Justice Costs

A substantial cost related to nonfatal consequences involves the criminal justice system, which consists of the following components: police protection, legal and adjudication, correctional facilities, and property loss due to crimes (Florence et al., 2016; Rhyan, 2017). Crime and violence as a sequela to opioid use is a significant cost and involves both the abusers and the victims. It is estimated the opioid epidemic has increased criminal justice costs in America by $7.8 billion (Florence et al., 2016), and a more recent finding reveals the current cost to be $8 billion (Ropero-Miller & Speaker, 2019).

Healthcare Costs

The opioid epidemic has fueled an excessive financial burden to the nation, including federal, state, and local governments as well as private healthcare plans and society at large. Between the years of 2001 and 2017, U.S. healthcare expenditures topped $215.7 billion (Litton, 2018). Federal costs (Medicare, Medicaid, SAMHSA, and CHAMPVA) accounted for 14% of the financial burden related to the epidemic. Combined with the criminal justice costs, this accounts for 25% of the total economic weight funded by society (Florence et al., 2016). Additionally, healthcare plans have endured significant financial burdens. Two federal laws, the Affordable Care Act and the Mental Health Parity and Addiction Equity Act, expanded behavioral health plans and provision of services, and eliminated lifetime monetary limits, substantially increasing the use of services.

Concomitantly with the opioid epidemic, new drug treatment programs developed nationwide, some of which engaged in unscrupulous and unethical practices to increase revenue (Johnson, 2018). In many cases, these private treatment programs were out of network, and individuals and families incurred excessively high financial costs. Similar to the pharmaceutical industry, these private treatment programs utilized skillful marketing techniques to attract vulnerable patients with financial resources.

Rates and costs of opioid-related admissions have increased dramatically and the escalation in numbers, and costs of hospitalizations indicate a threat to the financial solvency of U.S. hospitals (Hsu et al., 2017). These costs stem primarily from emergency services, emergency room visits to manage overdoses, hospital admissions, and the increased costs of associated illnesses (Litton, 2018). In comparison to treatment costs for other illnesses such as diabetes or renal disease (range $3,560-$5,624), MAT for OUDs reflects substantially higher costs ($5,980-$14,112) per year (Agency for Healthcare Research and Quality, 2016).

International Opioid Epidemic

While OUDs exist worldwide, the United States is facing a substantially larger epidemic. While the United States represents 4% of the world’s population, 27% of the world’s mortality from drug overdose occurs in the United States (United Nations Office on Drugs and Crime, 2016). Residents in the United States consume more opioids than any other population in the world. For example, in France and Italy, the inci-

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Costs from 2015-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care</td>
<td>$205 billion</td>
</tr>
<tr>
<td>Premature deaths</td>
<td>$253 billion</td>
</tr>
<tr>
<td>Criminal justice</td>
<td>$39 billion</td>
</tr>
<tr>
<td>Childcare/Family assistance</td>
<td>$39 billion</td>
</tr>
<tr>
<td>Lost productivity</td>
<td>$96 billion</td>
</tr>
</tbody>
</table>

Source: Managed Healthcare Executive Staff, 2019; Siegel, 2019.
The incidence of chronic pain is similar to the per capita rate in America. Yet, consumption of opioids in the United States is six to eight times greater (Humphreys, 2018). Nearly 100% of hydrocodone and 81% of oxycodone are consumed by Americans and are prescribed for pain management. Another contributing factor related to over-prescription in the United States is that fewer regulations exist for drug manufacturers and distributors, as compared to other developing nations (Humphreys, 2018). An additional factor contributing to the increase in opioid use in the United States is related to the healthcare industry’s focus on addressing patient needs and satisfaction, which has resulted in health professionals’ liberal over-prescribing and often resulting in unused medications including opioids.

### Table 3.
**Call to Action: Advocacy in Nursing**

<table>
<thead>
<tr>
<th>Policy</th>
<th>1. Endorse organizational initiatives and advocate for policy development to address the opioid epidemic through local, regional, state, and national development of OUD programs.</th>
</tr>
</thead>
</table>
| Education | 1. Develop and implement curricula based on best practice for treatment of OUDs in undergraduate and graduate nursing programs nationwide.  
2. Introduce a new paradigm of OUD as a chronic neuropsychobiological disease capable of recovery to decrease stigma.  
3. Increase the number of nurse practitioners to prescribe medication-assisted treatment. |
| Nurse leaders | 1. Design and provide continuing education programs for practicing nurses to treat individuals with OUDs with best evidence interventions.  
2. Foster assimilation of the new paradigm of OUD as a disease with recovery, rather than moral defect.  
3. Establish health economics competencies to manage exorbitant costs of OUD treatment. |
| Research | 1. Engage in the conduct of diverse research methodologies to expand broad body of nursing knowledge in humanistic treatment of OUDs, including psychosocial aspects of treatment.  
2. Conduct research investigations on stigma, and development of interventions to mitigate stigma among individuals, families, communities, societal, and healthcare professionals. |
| Practice: Levels of prevention | 1. Primary Prevention  
a. Protect the public through education on risks, challenges, and need for support/community services for those in recovery from OUDs.  
b. Provide education to mitigate stigma to improve access to treatment for individuals with OUDs.  
2. Secondary Prevention  
a. Facilitate early detection and intervention for those at risk (biophysical, psychological, or social determinants) for all subgroups of population in all healthcare settings.  
3. Tertiary Prevention  
a. Provision of nursing services to maximize health states, despite living with a chronic illness.  
b. Provide supportive services to reduce long-term sequela of OUDs. |

OUD = opioid use disorder
These unused opioids, available in household medicine cabinets nationwide, have facilitated increased recreational use of opioids by patients, family members, and friends (diversion); thereby, furthering the escalation of opioid addiction in the United States.

Nurses’ Call to Action

Because nurses represent the largest number of healthcare providers, are the most trusted among health professionals, have the greatest interaction with patients and families, and deliver comprehensive, excellent, cost-effective care, nurses are ideally suited to engage in action to address the opioid epidemic in America. To combat the opioid epidemic, there is a call to action for nurses in all settings, including academia and practice at all levels of prevention, to engage and advocate for change to advance science, policy, education, and practice (see Table 3).

Policy

Recognizing the severity and magnitude of the opioid epidemic, national healthcare organizations from diverse disciplines have joined forces to identify solutions for this public health crisis. The National Academy of Medicine’s Action Collaborative on Countering the U.S. Opioid Epidemic along with the AACN and 55 private and federal participating network organizations have engaged in partnerships to develop solutions to the opioid crisis and to ultimately improve individual, family, and community outcomes for those impacted by the opioid crisis (AACN, 2019b). Through policy, AACN has focused on workforce development and further access to MAT for individuals with OUD. Goals include increasing healthcare professional education and training; advancing research and adoption of evidence-based substance use disorder (SUD) treatment, providing safe guidelines for prescribing opioids for acute and chronic pain, and increasing outreach to disseminate the urgent need to address this growing epidemic (AACN, 2019b).

The American Nurses Association (ANA) has communicated similar goals as AACN, including expanded access to MAT and prescriber education and training. Additionally, ANA (2016) has called for further prevention research, increased utilization of prescription drug monitoring programs, and increased availability of naloxone (Narcan®), an opioid antagonist used to counter the effects of opioid overdose, for first responders, family, friends, and caregivers of individuals with OUD. All nurses in practice and academia need to endorse these initiatives and advocate for policies to support these services at the local, regional, state, and national levels to improve outcomes for individuals with OUD.

Education

The need to educate nurses in practice and academia to treat individuals with OUD with interventions based on best evidence is well documented (ANA, 2016; American Psychiatric Nurses Association, 2016; Klimas, 2017; Livingston et al., 2011; Martello et al., 2018; Neville & Roan, 2014). The American Society of Addiction Medicine (ASAM, 2015) has advocated for a change in perspective in how society and healthcare providers view individuals with OUD; transitioning from the negative perception of moral weakness to a treatable chronic neuropsychobiological disease. In essence, ASAM addresses the need to decrease stigma and use best scientific evidence to treat patients with OUD using the most humanistic approach to confront this disease. Through this changed perspective, education focusing on treating SUDs and OUD as a disease will ultimately result in lessening stigma, more positive healthcare professional attitudes, and improved recovery rates (van Boekel et al., 2013).

In academia, the call to action is to impart knowledge of best practice for treatment of individuals with OUD. This encompasses knowledge acquisition of OUD risk factors, etiology, psychosocial components, and treatment modalities, using the framework of OUD as a chronic condition, characterized by exacerbation, remission, and recovery. Nurse faculty need to embrace this new paradigm supportive of recovery, and develop and implement curricula in undergraduate and graduate nursing programs. An imperative call to action is for nurse faculty nationwide to compre-
hensively integrate OUD content into nursing curricula.

Research

To advance science, nurses should engage in research using diverse methodologies to expand the body of knowledge in OUD. A shortage of literature exists related to the role of nurses in the care and treatment of individuals with OUD. Further inquiry regarding barriers, interventions to reduce stigma, and the design and efficacy of comprehensive nursing interventions, including the use of MAT, along with psychosocial support services, is needed.

Practice

Nurses, as frontline practitioners, are ideally situated to address the opioid epidemic through their close interactions with patients and families in community and healthcare settings. However, consistent with public stigma, many healthcare professionals have negative attitudes toward working with patients with SUDs, including perceptions of aggression, manipulation, and lack of motivation as factors that impede effective care delivery (van Boekel et al., 2013). Furthermore, van Boekel and colleagues substantiate that healthcare professionals are unable to empathize, and report dissatisfaction when caring for patients with SUDs, ultimately resulting in suboptimal care. Literature supports that many nurses have condemning attitudes and negative beliefs such as distrust, powerlessness, anger, futility, and intolerance when working with patients with SUDs and OUD (Tierney, 2016). Neville and Roan (2014) reported nurses perceived patients with addictions as “manipulative, rude, aggressive and unsafe” (p. 344). However, these practicing nurses also identified being unprepared to care for this population and a need for increased education.

In healthcare agencies, there is a call to action for nurse leaders to address this epidemic. Based on the identified factors of stigma and need for further education, nurse leaders should advocate for continuing education, providing state of the art best evidence to guide practice to improve outcomes for individuals with OUD. Additionally, the creation and monitoring of a therapeutic milieu to support nurses during the transition toward the adoption of this paradigm of recovery is vital.

In addition to the need for nurses to provide excellent care to individuals with OUD, nurse leaders need to be aware of costs related to OUD treatment. Recently, Platt and colleagues (2019) identified the importance for nurses to gain understanding of economics in health care to promote cost-effective delivery of care. Given the tremendous economic burden the opioid epidemic has created nationwide, health economics competency is of paramount importance for nurses, especially nurse leaders.

Levels of Prevention

Nurses promote and maximize health states across the lifespan and health and well-being continuum, including primary, secondary, and tertiary prevention. Nurses in primary care, community health, and school settings can be key advocates in protecting the public by education on the risks of substance abuse, as well as the challenges and need for support of individuals in recovery, the changing perception of individuals with OUD, and the importance of mitigating public and health professionals stigma to facilitate individuals with OUD to seek and receive adequate treatment to prevent relapse.

Nurse educators in the community can serve as highly valuable resources in the prevention of drug misuse, as well as provide naloxone training and education to first responders, teachers, family members, and caregivers. Additionally, nurses can provide extensive education to teachers, counselors, coaches, and students on prevention and identification of risk and individuals confronting this disease.

In secondary prevention, knowledge and recognition of persons with OUD should not be confined to mental health professionals but should include education for all healthcare professionals. Early detection and intervention must be available to identify those at risk (biophysical, psychological, or social determinants) for all subgroups within the population across all ages and in all types of healthcare settings. Increased efforts to promote safe prescribing practices are underway, and prescriber and clinician education on safe opioid use and detection of potential misuse is essential (Salmond & Allread, 2019).
In tertiary prevention, nurses have a vital role in helping individuals with OUD maximize health despite living with a chronic disease. In the past, drug dependence was characterized by individuals from lower socioeconomic classes and was considered a sign of moral weakness. It is now imperative that a change in perception by society and, importantly, by health professionals must occur. Stigma, associated with negative attitudes, can dramatically impact treatment, recovery, and ultimately relapse. Recognizing that addiction is a brain disease, individuals with OUD must be treated with respect and compassion as a patient with a disease, without judgment and not viewed as morally deficient.

Although multiple treatments are available, evidence reveals that only an approximate 11% receive specialty care in treatment centers (Busch et al., 2017). Based on the escalating opioid misuse crisis, there is a dire need to educate practitioners on MAT, the safest and most effective treatment for OUD. MAT efficacy is increased with a holistic approach, including therapeutic counseling and other behavioral therapies (Moore, 2018; SAMHSA, 2019b). According to Moore (2018), survival rates are improved, patients remain in treatment longer, have increased levels of employment, and have improved overall quality of life with MAT. While deemed the most effective treatment for OUD, MAT underutilization continues to exist predominantly due to the inadequate number of providers and lack of OUD education among healthcare professionals.

To address the need for increased providers, in 2016 the U.S. Congress, through the Comprehensive Addiction and Recovery Act, facilitated expansion of prescriptive privileges for nurse practitioners to provide MAT (SAMHSA, 2019b). Through education, increased numbers of nurse practitioners who can treat individuals with OUD will dramatically assist in combatting the opioid epidemic.

Conclusion

The need to address this unprecedented opioid epidemic is increasingly being recognized. Finding ways to treat OUD has become a national priority (Mumba et al., 2018). OUD affects individuals across the lifespan, including those of diverse ethnic, racial, and socioeconomic backgrounds, in rural, urban, and suburban settings throughout the country. As frontline providers of care, it is imperative nurses take comprehensive action to combat this epidemic to improve outcomes as well as to mitigate the rising healthcare costs associated with this crisis. $ 

Kathleen Neville, PhD, RN, FAAN  
Associate Dean of Graduate Studies and Research  
Seton Hall University College of Nursing  
Nutley, NJ

Marie Foley, PhD, RN  
Dean and Professor  
Seton Hall University College of Nursing  
Nutley, NJ

References

Busch, S., Fellin, D., Charwarski, M., Owens, P., Pantalon, M., Hawk, K., Bernstein, S., O’Connor, P., & D’Onofrio, G.
(2017). Cost-effectiveness of emer-
gency department-initiated treatment
for opioid dependence. Addiction,
112(11), 2002-2010.

Cadet, M., & Tucker, L. (2019). NP roles in
medication-assisted treatment for opioid
use disorder. American Nurse Today,

Centers for Disease Control and Prevention
(CDC). (2017). Addressing the prescrip-
tion opioid crisis. Retrieved from
https://www.cdc.gov/rxawareness/pdf/
Overview-RxAwareness-Resources.pdf

Centers for Disease Control and Prevention
deaths continue to rise; increase fueled
by synthetic opioids. Retrieved from
https://www.cdc.gov/media/releases/20
18/p0329-drug-overdose-deaths.html

Centers for Disease Control and Prevention
(CDC). (2018a). Accidents or uninten-
tional injuries. https://www.cdc.gov/
ncs/fastats/accidental-injury.htm

Centers for Disease Control and Prevention
https://www.cdc.gov/drugoverdose/dat
a/statedeaths.html

Centers for Disease Control and Prevention
(CDC). (2019c). Understanding the epi-
drugoverdose/epidemic/index.html

Drug-poisoning deaths involving
opioid analgesics: United States, 1999-

effectiveness: A systematic review.
Journal of Addiction Nursing, 29(30),
157-171.

The changing face of heroin use in the
United States: A retrospective analysis
of the past 50 years. JAMA Psychiatry,
7(7), 821-826.

Council of Economic Advisers (U.S.).
Executive Office of the President of the
United States. (CEA). (2017). The under-
estimated cost of the opioid crisis.
Retrieved from https://www.white
house.gov/briefings-statements/cea-
report-underestimated-cost-opioid-
crisis/

Message: The opioid crisis. Nursing
Outlook, 67(1), 3-5.

Florence, C.S., Zhou, C., Luo, F., & Xu, L.
(2016). The economic burden of pre-
scription opioid overdose, abuse, and
Medical Care, 54(10), 901-906.

Adolescents at risk: Pain pills to heroin:
Part II. Journal of Psychosocial Nursing
and Mental Health Services, 53(2), 27-
30.

Forni, K. (2018). The opioid crisis, suicides,
and related conditions: Multiple clus-
tered syndemics, not singular epi-
demics. Journal of Addictions Nursing,
29(3), 214-220.

Hedegaard, H., Warner, M., & Minino, A.M.
(2017). Drug overdose deaths in the
United States, 1999-2015. NCHS Data
data/databriefs/db273.pdf

Hsu, D.J., McCarthy, E.P., Stevens, J.P., &
Mukaram, K.J. (2017). Hospitalizations,
costs and outcomes associated with
heroin and prescription opioid overlod-
es in the United States 2001-

Humphreys, K. (2018). Americans take more
pain pills but not because they’re in
https://www.washingtonpost.com/news
/work/wp/2018/03/23/americans-take-
more-pain-pills-but-not-because-theyre-
in-more-pain/?utm_term=.be20005
e9ba4

Johnson, A. (2018). Curbing the high cost of
opioid abuse treatment. Benefits
Magazine, 14-19.

One solution to the opioid crisis.
http://theconversation.com/better-
medical-education-one-solution-to-the-
opioid-crisis-81019

Leslie, D. L., Djibril, M., Agbese, E., Xueyi, A.,
& Guodong, L. (2019). The economic
burden of the opioid epidemic on
states: The case of Medicaid. American
ajmc.com/journals/supplement/
2019/deaths-dollars-diverted-
resources-opioid-epidemic/the-
economic-burden-opioid-epidemic-on-
states-case-of-medicaid

Leung, P., MacDonald, E., Stanbrook, M.,
letter on the risk of opioid addiction.
New England Journal of Medicine, 376,
2194-2195.

Lifton, S. (2018). Economic toll of opioid cri-
sis in U.S. Exceeded $1 trillion since
tial-societal-benefit-eliminating-opioid-
crisis-exceeds-95-billion-year

Salmond, S., & Allread, V. (2019). A popula-
tion health approach to America's opi-
demic. Orthopaedic Nursing, 38(2),
95-108.

Siegel, E. (2018). Opioid epidemic so dan-
gersous, says CDC, it’s finally killing as
many Americans as guns. Forbes.
https://www.forbes.com/sites/startswith
abang/2018/03/20/opioid-epidemic-so-
dangerous-says-cdc-its-finally-killing-as-
many-americans-as-guns/#3448b
69c2c1

continued on page 51
Nurses Call to Action
continued from page 15


