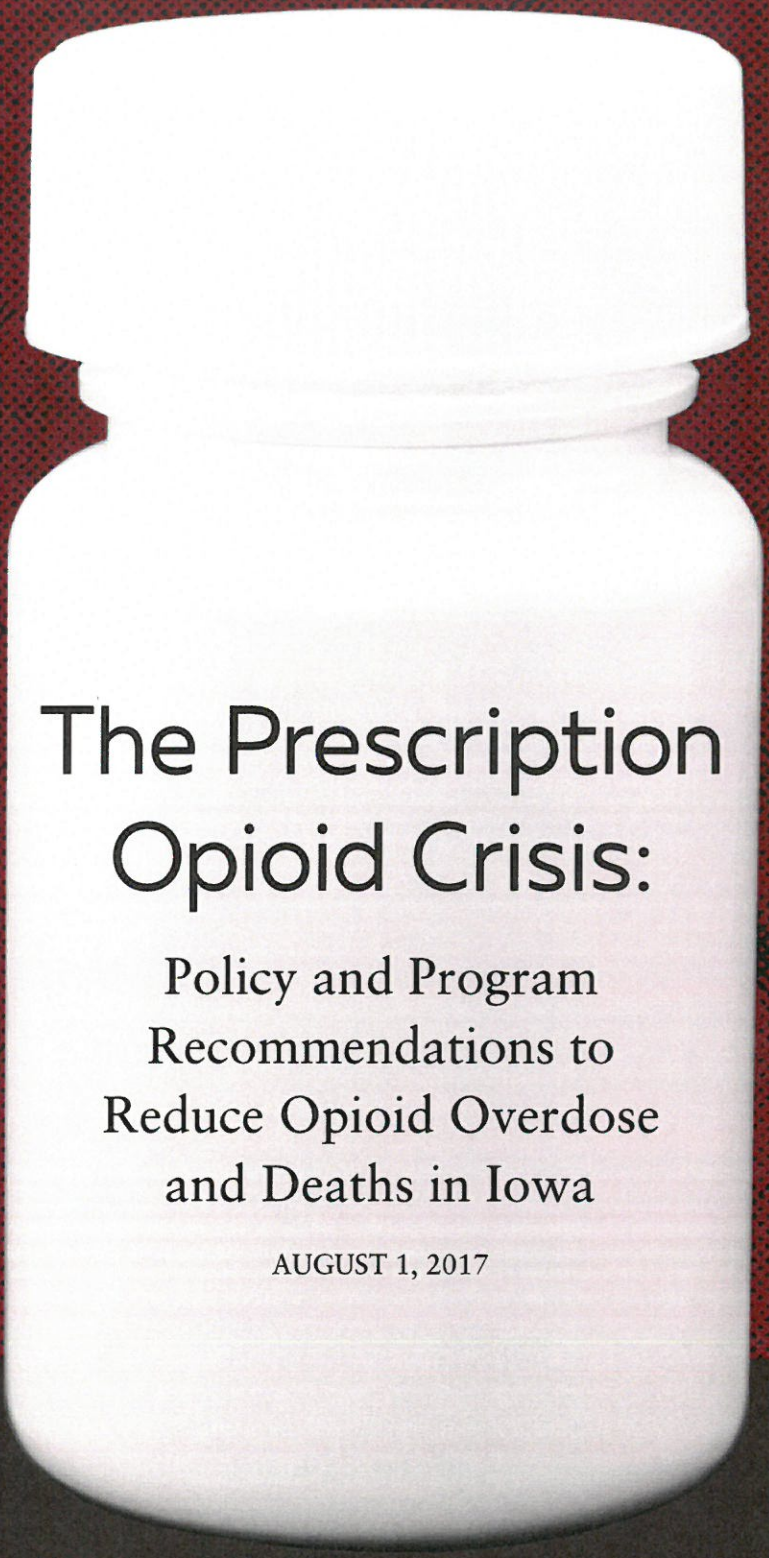
IPRC INJURY PREVENTION RESEARCH CENTER

THE UNIVERSITY OF IOWA | College of Public Health



The Prescription Opioid Crisis:

Policy and Program Recommendations to Reduce Opioid Overdose and Deaths in Iowa

AUGUST 1, 2017

STAKEHOLDERS

NOLA AIGNER
Polk County Health Department

LEE KRAL
University of Iowa Hospitals and Clinics

STEPHAN ARNDT
Iowa Consortium for Substance Abuse Research and Evaluation

TONY LEYS
Des Moines Register

ANGIE ASA-LOVSTAD
AC4C: Alliance of Coalitions for Change

JOHN LUNDELL
University of Iowa Injury Prevention Research Center

ERIC BAKER
Representative David Young's Office

ALISON LYNCH
University of Iowa Hospitals and Clinics

TESS BENHAM
National Safety Council

ANTHONY MILLER
University of Iowa Department of Psychiatry

CHRIS BURESH
University of Iowa Department of Emergency Medicine

JANET NELSON
Iowa Department of Public Health

BEN CARTER
Des Moines Police Department

CORINNE PEEK-ASA
University of Iowa Injury Prevention Research Center

CARRI CASTEEL
University of Iowa Injury Prevention Research Center

JAMES RAY
University of Iowa College of Pharmacy

AL FEAR
Eastern Iowa Heroin Initiative

LISA ROTH
University of Iowa Injury Prevention Research Center

FRANK FILIPPELLI
UCS Healthcare

ANN SABA
University of Iowa Injury Prevention Research Center

ERIN FOSTER
Area Substance Abuse Council

MATT SEXTON
Senator Joni Ernst's Office

SHANNON HARDEN
Wellmark Blue Cross Blue Shield

BARBARA ST. MARIE
University of Iowa College of Nursing

DAVE HAUPERT
Dubuque Drug Task Force

KEVIN TECHAU
Office of the U.S. District Attorney of Northern Iowa (formerly)

CHUCK ISENHART
Iowa House of Representatives (D- Dubuque)

JENNIFER TIFFANY
Iowa Board of Pharmacy

DAVID JACOBY
Iowa House of Representatives (D- Johnson)

MELISSA WALKER
Area Substance Abuse Council

BILL JAGIELLO
Wellmark Blue Cross Blue Shield

MELISSA WELSH
Iowa Counterdrug Task Force

LINDA KALIN
Iowa Poison Control Center

TODD WILSHUSEN
Des Moines Police Department

ALEC KENNEDY
Senator Chuck Grassley's Office

DALE WOOLERY
Iowa Office of Drug Control Policy

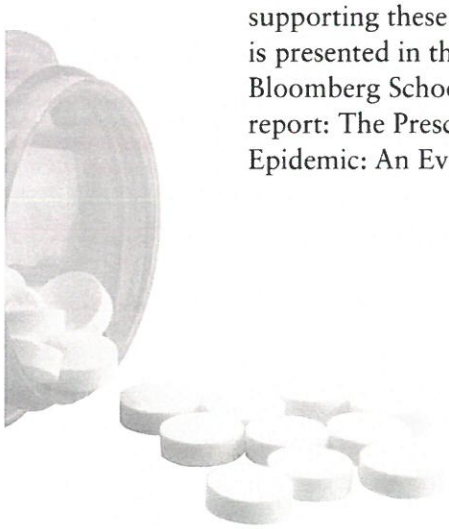
RICK KOZIN
Polk County Health Department

SARAH ZIEGENHORN
Iowa Harm Reduction Coalition

Executive Summary

Poisoning deaths have been rising since the early 1990s,[1] and in 2009, surpassed transportation-related events as the leading cause of injury death in the United States.[2] Use of prescription opioid pain relievers, such as oxycodone and hydrocodone, are primarily driving the increase in poisoning deaths.[1, 3] While prescription drug overdose deaths and rates of opioid prescribing in Iowa are low compared to other states, rates of prescription opioid overdose deaths have quadrupled in the past 20 years, making Iowa only one of four states with such a dramatic increase.[4]

The University of Iowa Injury Prevention Research Center (UI IPRC) was one of four injury control research centers in the U.S. that participated in a national project and information sharing network funded by the National Center for Injury Prevention and Control at the Centers for Disease Control and Prevention to make recommendations about preventing prescription opioid overdoses. Led by the Johns Hopkins Center for Injury Research and Policy (JHCIRP), each center in the network promoted evidence-based strategies for reducing the opioid epidemic in their state. The evidence supporting these recommendations is presented in the Johns Hopkins Bloomberg School of Public Health report: The Prescription Opioid Epidemic: An Evidence-based Approach.[5]



The UI IPRC examined how Iowa's policies and programs compared to the Johns Hopkins report recommendations, and presented this to stakeholders in Iowa via a stakeholder meeting. Through the meeting and a follow-up survey, the stakeholders then identified priorities for addressing the growing opioid crisis in the state. The following are the top five priorities:

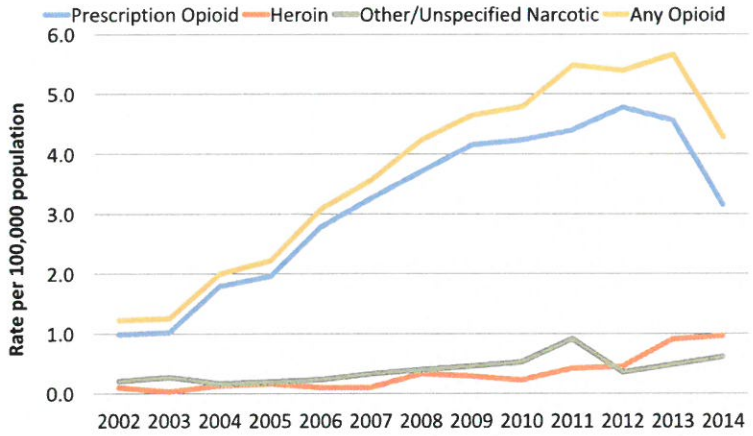
- Provide evidenced-based physician training in pain management and opioid prescribing at the point of medical education. For current licensed professionals, develop a presentation that will provide a historical perspective with up-to-date epidemiological data focusing on evidence-based solutions to alter the course of this epidemic.
- Educate physicians, nurses, pharmacists and other practitioners to ensure a strong knowledge base in recognizing patients at high risk for opioid abuse and addiction.
- Make the Iowa Prescription Monitoring Program (PMP) an accurate and effective clinical tool for all prescribers. Stakeholders need to work together to identify and enact measures that will eliminate current barriers preventing Iowa's PMP from reaching maximum use and effectiveness.
- Strengthen capacity to conduct opioid drug overdose surveillance and prescription opioid monitoring among multiple organizations and agencies.
- Ensure that Medicaid and other state health programs adequately cover all FDA-approved MAT (methadone, buprenorphine, naltrexone) and evidence-based behavioral interventions. Encourage or require commercial health plans to adopt similar policies.

Magnitude of the Prescription Opioid Crisis in Iowa

OPIOID DEATHS

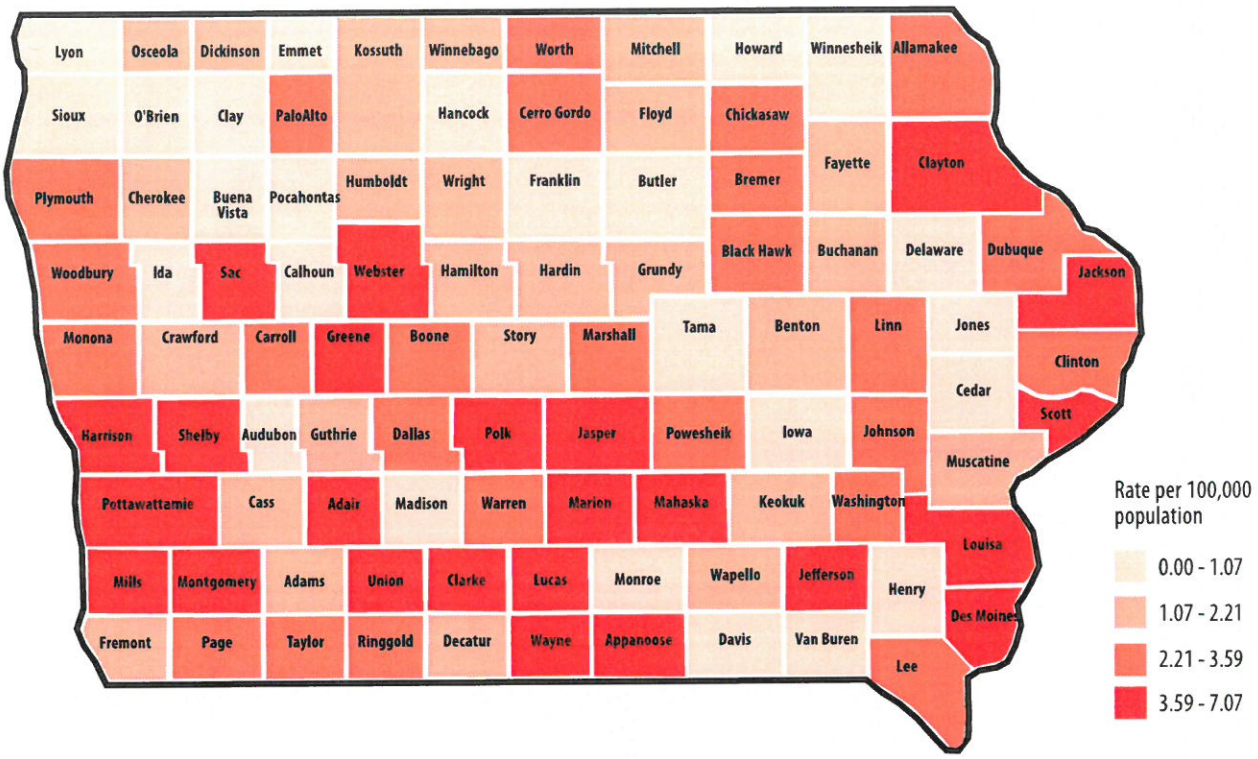
Poisoning deaths have been rising since the early 1990s,[1] and in 2009, surpassed transportation-related events as the leading cause of injury death in the United States.[2] Use of prescription opioid pain relievers (OPR), such as oxycodone and hydrocodone, are primarily driving the increase in poisoning deaths.[1, 3] Before the rise of these deaths, OPRs were prescribed primarily for treating pain at the end of life, for acute pain following surgery, or for health conditions such as cancer.[1, 4] However, there has been a shift in opioid prescribing to include pain from chronic non-cancer conditions. In 2015, more than 33,000 people in the U.S. died of an opioid-involved drug overdose, and nearly 50% of these deaths involved a prescription opioid.[2]

Figure 1. Opioid-involved drug overdose death rates in Iowa, Iowa Death Certificate records, 2002 - 2014



Prescription opioid deaths in Iowa have quadrupled in the past 20 years. While prescription drug overdose deaths and rates of opioid prescribing are low in Iowa compared to other states, rates of prescription opioid overdose deaths since 1999 have increased four-fold, making it only one of four states with such a dramatic increase.[4] Iowa has experienced similar trends in deaths due to prescription opioids and heroin as those observed nationally. Prescription opioids account for the most overdose deaths among all opioid-involved deaths in Iowa (Figure 1). More than half of all prescription opioid deaths in Iowa occur among adults 35-54 years of age. Another 20% occur among 25-34 year-olds, and 11% occur among 15-24 year-olds.

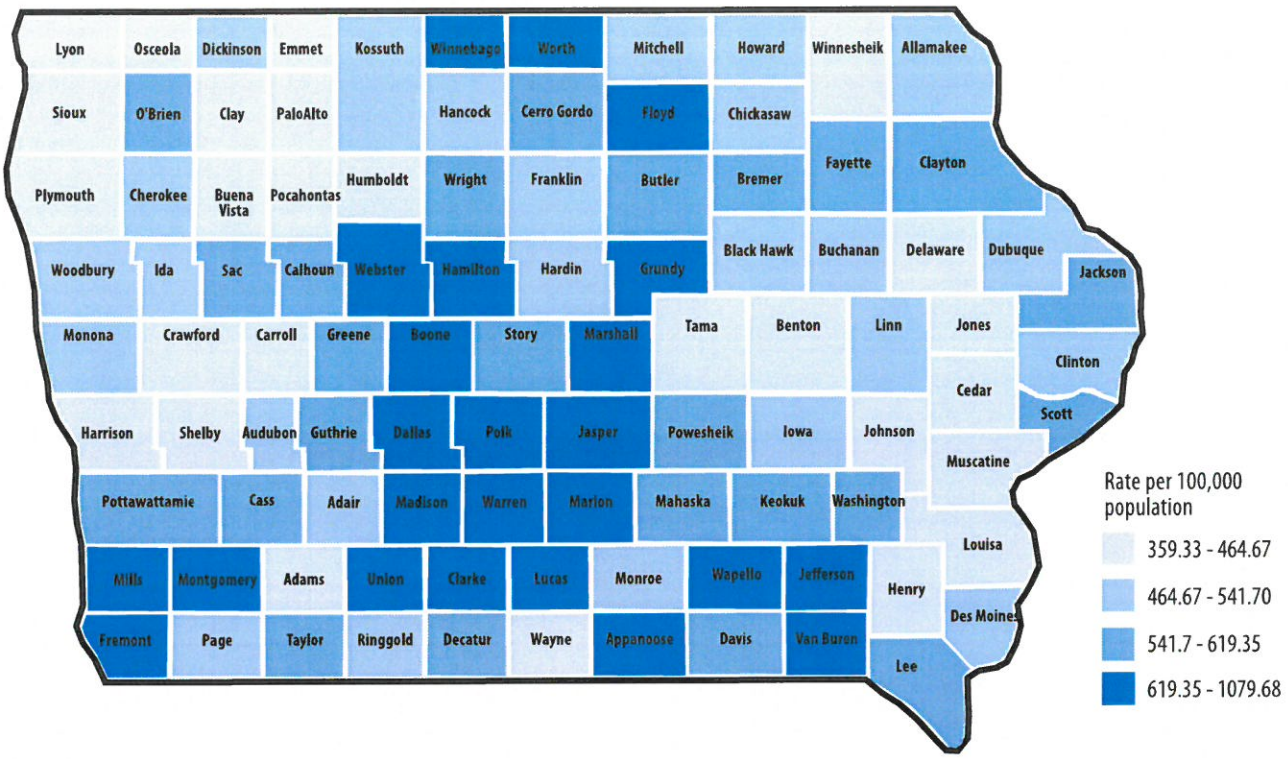
Figure 2. Death rates from prescription opioid overdoses, by county, Iowa Death Certificate records, 2002 - 2014



Heroin use has been a rapidly growing public health problem in the U.S. and has been found to be associated with non-medical use of prescription opioid pain relievers. Heroin overdose death rates in Iowa have increased more than nine-fold in the past 15 years. The rapid growth of heroin death rates in Iowa is two to three times higher than the national average.[6-8] In recent years, as prescription opioid overdose deaths have decreased, heroin deaths have increased (Figure 1). Heroin deaths are most prevalent among those 25-34 years of age (making up 30% of all heroin-involved deaths) and those 45-54 years of age (making up 26% of all heroin-involved deaths). Young adults (15-24 years of age) make up 15% of all heroin-involved deaths in Iowa.

Prescription opioid deaths are concerns in both urban and rural counties in Iowa. Between 2002 and 2014, there were 1,239 overdose deaths due to prescription opioids in Iowa. Death rates were highest in Montgomery, Webster and Harrison Counties (Figure 2), where rates exceeded the state average by more than 200%. Polk, Scott, Linn, Pottawattamie and Johnson Counties accounted for nearly half of all prescription opioid deaths in the state; Polk County alone made up 25% of all prescription opioid deaths (number of deaths: 319).

Figure 3. Total MME dispensed among Iowa residents, by county, medical insurance claims, 2003 - 2014



PRESCRIPTION OPIOID PRESCRIBING PRACTICES

NEARLY 430,000 BENEFICIARIES FROM A LARGE MEDICAL INSURANCE CLAIMS DATABASE WERE DISPENSED AN OPIOID PAIN RELIEVER IN 2003-2014. Claims data show that between 2003 and 2014, an average of 77,653 Iowa residents per year were dispensed an opioid pain reliever (OPR). During this period, there were 701,603 new OPR prescriptions dispensed, where new use was defined as no apparent use of a prescription opioid in the six months preceding the dispensed OPR. The highest percentage of new OPR prescriptions were among those 45-54 years of age (22%), followed closely by those 55-64 years of age (21%). Females comprised about 53% of all those with a new OPR prescription.

The most common types of drugs filled were acetaminophen-hydrocodone (50%), tramadol (13%), acetaminophen-oxycodone (9%), acetaminophen-codeine (8%), and acetaminophen-propoxyphene (7%). Using metrics from the Centers for Disease Control and Prevention (CDC), called morphine milligram equivalent (MME), 25% of the first opioid fills contained a daily dose of 50 MME. The CDC defines a high opioid dosage to be at least 50 MME per day; at this level, the risk for an opioid overdose doubles.[9]

HIGH DOSES OF PRESCRIPTION OPIOIDS ARE DISPENSED IN BOTH RURAL AND URBAN PARTS OF THE STATE. Clarke and Fremont Counties have the highest total MMEs dispensed among beneficiaries receiving a prescription opioid, followed by Floyd, Appanoose and Dallas Counties (Figure 3). Clarke is one of the more rural counties in the state with just over 9,000 residents, while Dallas is more urban with approximately 66,000 residents. Over the 12-year period of the medical claims (2003-2014), Clarke County had the highest total MMEs dispensed, compared to all other counties, in eight of the 12 years. Overall, as the total MMEs dispensed in the counties increased, the overdose death rates also increased.

STAKEHOLDER PRIORITIES IN IOWA

On April 13th 2017, 38 people (including five from UI IPRC) gathered in Des Moines to identify priorities to address the growing opioid overdose crisis in Iowa. UI IPRC Associate Director Carri Casteel led the meeting to discuss evidence-based recommendations for reducing the opioid epidemic developed by a national consortium of experts coordinated by the Johns Hopkins Bloomberg School of Public Health and the Clinton Foundation. The recommendations are included in a report and address eight areas: prescription monitoring programs, prescribing guidelines, pharmacy benefit managers, surveillance, engineering strategies, overdose education/naloxone distribution, addiction treatment, and community-based prevention.[5] One goal of the meeting was to review these recommendations and compare them to activities underway in Iowa. An inventory of Iowa's prescription opioid policies and programs is available at: https://www.public-health.uiowa.edu/iprc/resources/policy-briefs/.

Nineteen priorities were identified and included in an online survey that UI IPRC emailed to participating stakeholders. The survey asked stakeholders to select their top five priorities and/or contribute new priorities. Stakeholders were also asked to propose action steps for each of their selected priorities.

Those participating in the stakeholder meeting represented law enforcement, psychiatry, emergency medicine, public health, nursing, non-profit/advocacy, poison control, substance abuse treatment, pharmacy, insurance, drug control policy, elected officials and more. The names and organizations of each stakeholder are provided on page 2 of this report.

Those participating in the stakeholder meeting represented law enforcement, psychiatry, emergency medicine, public health, nursing, non-profit/advocacy, poison control, substance abuse treatment, pharmacy, insurance, drug control policy, elected officials and more.

Prescriber Education

THE EVIDENCE[5]

Prescribers and pharmacists receive little training on opioid addiction and its treatment, and there is no coordinated national educational effort underway yet. The evidence on state policy strategies and their effect on prescribing patterns demonstrate that state governments are willing to promote safe and effective pain management while taking precautions to curtail the alarming increase of opioid related morbidity and deaths. For example, in 2010, Washington State repealed prior prescribing rules and created new ones that included dosing criteria and guidance on how to seek consultation, use the prescription drug monitoring program, and track clinical progress using assessment tools.

PRESCRIBING RULES AND LAWS

Iowa Medical Board's Reasonable and Responsible Approach

Physicians following a "reasonable and responsible" approach to pain management are unlikely to be at risk for disciplinary action from the Iowa Board of Medicine.[10] With this approach, a physician routinely assesses patients for pain; utilizes the expertise of other health care practitioners; thoroughly documents the assessment and plan of care; conducts ongoing monitoring of patient drug use, and; minimizes risk through pain management agreements. Under this approach, prescribers should also be "regularly reviewing patient data in the Iowa Prescription Monitoring Database."[10] Additional prescribing provisions:

- Prescriber use of Iowa's Prescription Monitoring Program is not mandatory.[11]
- Prescribers can issue multiple simultaneous opioid prescriptions to the same patient.[12]
- Refills of prescription opioids are not allowed. However, a prescriber can issue up to a 90-day supply to a patient.[12]

Pain agreements are encouraged, not required

A physician who prescribes an opioid for more than 90 days is encouraged to use a pain agreement if the physician believes the patient is at risk for drug abuse.[13] If an agreement is not used with such a patient, the physician should document the reason for that decision in the patient's medical records. Pain management agreements are not necessary for patients in hospice or nursing homes.

Continuing medical education (CME) is required every five years

Physicians must complete two hours of continuing education in chronic pain management every five years.[14] Physicians required to do so are those who regularly provide end-of-life and chronic pain care, including family physicians and internists, as well as specialists like neurologists, pain medicine specialists and psychiatrists. Topics of the chronic pain management training are meant to meet the needs of the local physician community.

RECOMMENDATIONS FROM IOWA STAKEHOLDERS

Provide evidenced-based physician training in pain management and opioid prescribing at the point of medical education. For current licensed professionals, develop a presentation that will provide a historical perspective with up-to-date epidemiological data focusing on evidence-based solutions to alter the course of this epidemic.

Educate physicians, nurses, pharmacists and other practitioners to ensure a strong knowledge base in recognizing patients at high risk for opioid abuse and addiction.

Prescription Drug Monitoring Programs (PDMPs)

THE EVIDENCE[5, 15]

All states except Missouri have PDMPs, which are databases that collect data on dispensed prescriptions of controlled substances to patients. Prescribers can access their state's online database to help identify possible cases of opioid misuse and inform treatment decisions. Currently, 27 states mandate prescribers to register with the PDMP, and 30 mandate that prescribers use it some of the time. Mandatory PDMP policies have been associated with increased use of PDMPs and decreases in opioid prescribing, doctor shopping and overdose hospitalizations.

Data on dispensed prescription opioids is recorded in Iowa's PDMP on a weekly basis. Other state PDMPs range from real-time to monthly.

IOWA'S PRESCRIPTION MONITORING PROGRAM (PMP)

Iowa's PMP became fully operational in 2009. The number of prescribers and pharmacists registered for the PMP rose between 2009 and 2016; approximately 42% of prescribers and 83% of pharmacists were registered in 2016.[16]

THE IOWA PMP IS NOT MANDATORY. Prescribers and dispensers are not required to register or use the PMP when deciding how to treat a patient's pain.[11] Prescribers are not required to undergo training before using the PMP. There have been bills in the Iowa Legislature to integrate automatic registration or require registration as part of the Board's licensure/renewal process, but these bills have not passed.[17, 18] The Board has reported that "The process of integrating the Iowa PMP into electronic health and pharmacy record systems is in progress but no direct integrations of this type have yet to be completed."[19] Such processes would facilitate access and improve the timeliness of PMP data. A $200,000 upgrade to make the Iowa PMP more user-friendly is pending.[20]

WHO CAN ACCESS IOWA'S PMP?

Physicians and pharmacists can identify delegates to access the PMP. The Iowa Board of Pharmacy reported positive feedback from practitioners who take advantage of the option to identify delegates to access patient prescription history in the PMP under the direction of the supervising practitioner.[19] The supervising practitioner then uses this information to make informed treatment decisions.

Authorized requesters of Iowa PMP data include prescribers, pharmacists, patients/parent guardians, physician assistants, nurse practitioners and medical residents.[15, 21] Law enforcement agencies, licensing boards, regulatory agencies and prosecutors can access PMP data with a court order, subpoena or warrant and probable cause.[11, 15] Medical examiners can receive PMP information when it relates to an investigation.[22]

RECOMMENDATION FROM IOWA STAKEHOLDERS

Make the Iowa Prescription Monitoring Program (PMP) an accurate and effective clinical tool for all prescribers. Stakeholders need to work together to identify and enact measures that will eliminate current barriers preventing Iowa's PMP from reaching maximum use and effectiveness.

Surveillance

THE EVIDENCE[5]

Surveillance of opioid supply and overdose is critical for prevention efforts. Current surveillance is largely focused on opioid overdose-related deaths. However, surveillance data can be delayed several years before publication, which limits the ability of agencies and organizations to respond to crises and trends in a timely manner.

WHAT SURVEILLANCE IS HAPPENING IN IOWA?

Stakeholders reported ways that opioid addiction and overdoses are tracked in Iowa. The Cedar Rapids Police Department/Eastern Iowa Heroin Initiative collects opioid and heroin-related inpatient and outpatient data from hospitals in Linn County. Iowa's Poison Control Center tracks calls to the Center. Callers may be seeking information about a substance/ drug or inquiring on behalf of someone who has been exposed to a potentially poisonous drug—including opioids. Data from the nation's 55 poison control centers is uploaded in near real-time into a national database.

The Iowa Consortium for Substance Abuse Research and Evaluation released an August 2016 special report on opioid treatment admissions in Iowa, which shows trends from 2010 to 2015 based on age, race, gender, number of admissions, first use and duration of opioids, use of methadone treatment, co-occurring mental health problems, and length of stay.[23]

NO REAL-TIME DATA. Stakeholders reported that there is no real-time surveillance of opioid-related events in Iowa.

The Iowa Poison Control Center (IPCC)

Between 2010 – 2016:

- Calls related to prescription opioids decreased from 10,084 in 2010 to 2,458 in 2016.
- Calls related to heroin rose 350% (increase came primarily from 20-39 year olds).
- The percentage of opioid-related calls needing to be managed in a hospital rose from 66% to 77%. Those needing ICU care rose from 35% to 44%.

"During this past year, the IPCC received calls involving the new synthetic opioids such as U-47700 (aka "pink") and carfentanil and notified state agencies of the dangers these drugs pose. We have also noted a rise in calls about children under six years of age being accidentally exposed to prescription opioids."

– **Linda Kalin,**
Executive Director
Iowa Poison Control Center

RECOMMENDATION FROM IOWA STAKEHOLDERS

Strengthen capacity to conduct opioid drug overdose surveillance and prescription opioid monitoring among multiple organizations and agencies.

Addiction Treatment

THE EVIDENCE[5]

Services for opioid addiction treatment are disproportionately distributed. Where they are located does not always reflect where they are most needed. It is important to identify communities most in need of such services to reduce this disparity. Buprenorphine is an effective medication to treat opioid addition. Most insurance formularies offer limited coverage of physical therapy or other alternative evidence-based therapies for the treatment of pain.

BUPRENORPHINE TREATMENT IN IOWA

In 2015, there were 31 buprenorphine providers in Iowa. The current SAMHSA buprenorphine locator website shows that Iowa now has 49 eligible providers.[24] Iowa developed a communication strategy and infographic to assist in recruitment efforts (personal communication, Kevin Gabbert, ATR/MAT-PDOA Project Director, Iowa Department of Public Health). In 2016, a new federal rule took effect that increases the number of patients a waivered physician can apply to treat. Physicians who have prescribed buprenorphine to 100 patients for at least one year can now apply to increase their patient limits to 275.[25] At our stakeholder meeting, participants reported difficulty in garnering physician interest in obtaining the waiver to treat this population. Participants also reported concern about the amount of time required to manage 275 buprenorphine patients in an already-busy medical practice.

Medication Assisted Treatment (MAT) treats opioid addiction with both medication and behavioral therapies.

WHERE ARE THE TREATMENT CENTERS IN IOWA?

THERE ARE LIMITED IN-PATIENT FACILITIES FOR TREATING OPIOID ADDICTION. Stakeholders reported that many have up to two-month waiting lists. Most of Iowa's methadone clinics and practitioners who offer suboxone treatment (contains buprenorphine/naloxone) are located in and around the state's metropolitan urban centers (like Des Moines).[26]

NEW FUNDING FOR OPIOID ADDICTION TREATMENT IN IOWA

Iowa received funding ($2.7M per year for two years) through the 21st Century Cures Act.[27] Iowa plans to distribute this funding through the 23 Substance Abuse Block Grant catchment areas (personal communication, Kevin Gabbert, ATR/MAT-PDOA Project Director, Iowa Department of Public Health). Funding will be used for assessing community needs, developing a strategic plan, developing outreach and prevention strategies, and providing MAT services. Iowa was also recently awarded the Opioid State Targeted Response (STR) Grant, which will focus on capacity building and will support implementation of evidence-based practices like MAT. Plans include prevention-focused media, promotion of the Iowa PMP, expanded treatment options, and naloxone distribution.[28]

INSURERS ARE NOT REQUIRED TO COVER MAT TREATMENT

Health insurance formularies can limit what treatments are available to patients. In Iowa, legislation has been introduced (but not passed) requiring third-party payment to cover MAT treatment.[17] A second unsuccessful bill would have required the Iowa Medicaid program to cover MAT treatment and include MAT medications in preferred drug lists for treating substance disorders and preventing overdoses.[29]

RECOMMENDATIONS FROM IOWA STAKEHOLDERS

Ensure that Medicaid and other state health programs adequately cover all FDA-approved MAT (methadone, buprenorphine, naltrexone) and evidence-based behavioral interventions. Encourage or require commercial health plans to adopt similar policies.

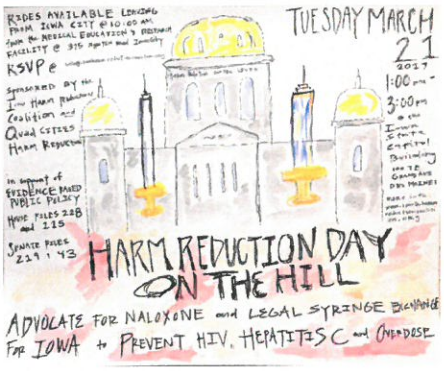
Highlights of Community-Based Prevention

EASTERN IOWA HEROIN INITIATIVE

Over the last year, the Eastern Iowa Heroin Initiative has traveled around the state educating communities on the opioid epidemic through town hall meetings and other events. Led by Officer Al Fear from the Cedar Rapids Police Department, the initiative helped put prescription drug drop boxes in nearly every county in Iowa and has trained law enforcement agencies throughout the state on methods for successful investigations of heroin overdose. The initiative also developed chapters of CRUSH (Community Resources United to Stop Heroin) in six counties.

"We help people tho are currently suffering from addiction as well as those family members who have lost loved ones and are looking for support. The Initiative is about education, compassion and connections."

– Officer Al Fear
Eastern Iowa Heroin Initiative



Poster created by IHRC to encourage Iowans to advocate for syringe service program legalization

THE IOWA HARM REDUCTION COALITION (IHRC) is an Iowa City-based organization working to reduce the risks associated with opioid use by conducting street-based and mobile outreach to communities in Eastern Iowa, providing community education programs, and engaging in legislative advocacy. IHRC is the only community-based organization in Iowa to operate a naloxone distribution program under a standing order. An arrangement with a pharmaceutical company (negotiated by a harm reduction organization in Illinois) allows IHRC to obtain naloxone at a low cost and distribute it in the community for free.

"This [naloxone distribution program] reduces several major barriers to accessing the life-saving medication. First, Iowa pharmacies do not consistently carry the medication and may make choices about whether or not to dispense the drug based around personal pharmacist comfort with the morality of drug use. Second, individuals seeking out the medication may be reluctant to do so because they may fear recognition by their local pharmacist or feel hesitant to publicly disclose their use in spaces that are not explicitly safe and judgement-free for people who use drugs. Finally, cost is a major issue - in Iowa the medication costs about $150 with insurance from a pharmacy. By distributing the drug for free in a low barrier setting, IHRC has been successful in preventing opioid overdoses across the state."

– Sarah Ziegenhorn, Executive Director, Iowa Harm Reduction Coalition

AC4C sponsors a Day on the Hill where Iowa youth receive advocacy training and meet with legislators.

THE ALLIANCE OF COALITIONS FOR CHANGE (AC4C) is a statewide network working around substance abuse prevention in Iowa. Along with the Iowa Pharmacy Association (IPA) and regional pharmacy associations, the network holds IPA Goes Local community discussions around the state targeted to physicians, pharmacists, dentists, nurses, chiropractors, social workers and stakeholders from treatment programs. The group learns about opioid trends and participates in a workshop to discuss collaborative ways to address the opioid issue. According to AC4C Director Angie Asa-Lovstad, all voices are heard and multiple levels of consensus are built. "*What I see coming from these sessions is the need for education, education, education by all stakeholders*," she said.

Angie Asa-Lovstad
AC4C Director

AC4C also has a policy workgroup that guides other coalitions through the legislative process, offers talking points, and creates handouts to support educational efforts. Its work helped lead to a keg registration state law in 2007 and a social host state law in 2014. Asa-Lovstad said efforts to unify substance abuse efforts have not been easy, but have produced some successes. "*It truly shows what can be done when we work together towards a common purpose*," she said.

IPA Goes Local participants listen to a presentation about the opioid crisis.

References

1. Paulozzi LJ, Budnitz DS, Xi Y. Increasing deaths from opioid analgesics in the United States. Pharmacoepidemiology and Drug Safety 2006;15:618-627.

2. National Center for Injury Prevention and Control. WISQARS Fatal Injury Reports, 2015. Centers for Disease Control and Prevention, 2017. Available at: https://www.cdc.gov/injury/wisqars/fatal.html.

3. Paulozzi LJ, Jones CM, Mack KA, Rudd RA. Vital Signs: Overdoses of Prescription Opioid Pain Relievers United States, 1999-2008. MMWR 2011;60:1487-1492.

4. Gabbert K. Opioid treatment programs. Presentation at the Heroin and Opioids: A Community Crisis Summit. Iowa City IA, November 2015.

5. The Prescription Opioid Epidemic: An Evidence-Based Approach; 2015. http://www.jhsph.edu/research/centers-and-institutes/center-for-drug-safety-and-effectiveness/opioid-epidemic-town-hall-2015/2015-prescription-opioid-epidemic-report.pdf. Accessed June 13, 2017.

6. Rudd RA, Aleshire N, Zibbell JE, Gladden M. Increase in drug and opioid overdose deaths – United States, 2000–2014. MMWR 2016;64:1378-1382.

7. Jones CM, Logan J, Gladden M, Bohm MK. Vital Signs: Demographic and Substance Use Trends Among Heroin Users — United States, 2002–2013. MMWR 2015;64:719-725.

8. Hedegaard H, Chen LH, Warner M. Drug-poisoning deaths involving heroin: United States, 2000–2013. Hyattsville, MD: National Center for Health Statistics (NCHS). NCHS Data Brief, no 190, 2015.

9. National Center for Injury Prevention and Control. Calculating Total Daily Dose of Opioids for Safer Dosage. Centers for Disease Control and Prevention, 2017. Available at: https://www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf.

10. Board encourages physicians to treat patients' pain responsibly. June 2014. http://www.medicalboard.iowa.gov/Board%20News/2014/Board%20encourages%20responsible%20pain%20management%20and%20completion%20of%20pain%20management%20CMEs%20-%20June%2010%202014.pdf Accessed June 13, 2017.

11. Iowa Administrative Code. Chapter 37 Iowa Prescription Monitoring Program. Accessed at https://www.legis.iowa.gov/docs/iac/chapter/03-15-2017.657.37.pdf.

12. Iowa Administrative Code 657 – 10.25. Accessed at https://www.legis.iowa.gov/docs/iac/rule/09-23-2009.657.10.25.pdf

13. Pain treatment-related administrative rules for Iowa-licensed physicians: Iowa administrative code 653-13.2; Interventional Chronic Pain Management 653-13.9; and CME requirement on pain and palliative care 652-11.4. Issued May, 2014. Accessed at https://medicalboard.iowa.gov/Board%20News/2014/Board%20encourages%20responsible%20pain%20management%20and%20completion%20of%20pain%20management%20CMEs%20-%20June%2010%202014.pdf.

14. Chronic Pain and End-of-Life Training: Frequently Asked Questions. Iowa Board of Medicine. https://medicalboard.iowa.gov/licensure/chronicpain_endoflife.html. Accessed June 13, 2017.

15. National Alliance for Model State Drug Laws. Compilation of Prescription Monitoring Program Maps. 2016. Accessed at http://www.namsdl.org/library/CAE654BF-BBEA-211E-694C755E16C2DD21/

16. Iowa Governor's Office of Drug Control Policy. Opioid Abuse in Iowa: Rx to Heroin & Beyond. April 2017.

17. Iowa Legislature. House Study Bill 99 – Introduced. Accessed at https://www.legis.iowa.gov/legislation/BillBook?ga=87&ba=HSB99

18. Iowa Legislature. H.F. 532. Accessed at https://www.legis.iowa.gov/legislation/BillBook?ga=87&ba=HF532

19. Iowa Board of Pharmacy report to Governor Branstad regarding the Iowa Prescription Monitoring Program. 1/31/17. https://www.legis.iowa.gov/docs/publications/DF/852479.pdf Accessed June 13, 2017.

20. Murphy E. Less than half of Iowa prescribers in program to cut opioid spread. . The Gazette. http://www.thegazette.com/subject/news/health/less-than-half-of-iowa-prescribers-in-program-to-cut-opioid-spread-20170522. Published May 22, 2017. Accessed June 13, 2017

21. Authorized Requestors of PDMP Data. Prescription Drug Monitoring Program Technical and Training Assistance Center. http://pdmpassist.org/content/authorized-requestors-pdmp-data. Accessed June 14, 2017.

22. Bill Tracker. http://www.ialobby.com/billtracker/ibha/. Accessed July 18, 2017

23. Special Report: Opioid Admissions in Iowa 2010 – 2015. The University of Iowa; 2016. http://iconsortium.subst-abuse.uiowa.edu/downloads/IDPH/State%20of%20Iowa%20Special%20Report%20on%20Opioids_%2008112016_%20to%20IDPH.pdf. Accessed June 14, 2017.

24. Iowa Department of Public Health, Division of Behavioral Health. E-newsletter: Opioid Update for Wednesday May, 17, 2017.

25. Buprenorphine Waiver Management. https://www.samhsa.gov/medication-assisted-treatment/buprenorphine-waiver-management. Published February 9, 2017. Accessed June 14, 2017.

26. Iowa Methadone Clinics. http://www.methadone.us/iowa-opioid-treatment/. Published 2017. Accessed June 14, 2017.

27. IDPH Receives $5.45 Million for Opioid Treatment Program. https://idph.iowa.gov/News/ArtMID/646/ArticleID/158166/IDPH-Receives-545-Million-for-Opioid-Treatment-Program-5317. Published May 3, 2017. Accessed June 21, 2017.

28. Iowa Department of Public Health, Division of Behavioral Health. E-newsletter: Opioid Update for

29. Iowa Legislature. Senate Study Bill 1134- Introduced. Accessed at https://www.legis.iowa.gov/publications/search/document?fq=id:853729&q=1134

This project was funded by a grant from the National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

University of Iowa Injury Prevention Research Center
2188 Westlawn
Iowa City, IA 52242
Email: iprc@uiowa.edu
www.uiiprc.org

Follow us on Twitter @UIIPRC
Like us on Facebook