

Promising Practices for Addressing Prescription Opioid Misuse and Overdose

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INTRODUCTION

Research has identified a number of potentially promising programs¹ and practices² that demonstrate effectiveness in preventing opioid misuse and overdose. This tool provides brief summaries of programs and practices that have been evaluated to determine their effects on these problems. It should be considered a resource for state and community prevention practitioners seeking information on interventions to reduce opioid misuse and overdose.

For the purposes of this tool, programs and practices have been organized into five categories that represent key opportunities for opioid misuse and overdose prevention: education, tracking and monitoring, retail access restrictions, enforcement, and harm reduction. For each program or practice, we provide a summary that includes the following information:

- **Contacts:** Whom do I contact for more information?
- **Description:** What are key components of the program?
- **Populations:** What population group/s does this program target?
- **Settings:** In what settings has this program been implemented (and evaluated)?
- **Evaluation design:** How was the program evaluated?
- **Outcomes:** What were the evaluation outcomes specific to opioid use?
- **Studies:** Which evaluation studies reported these opioid outcomes?
- **Additional resources:** Where can I learn more information on this program?

Although there are several ways to approach and use this tool, the following are suggested steps or guidelines.

- Determine the most relevant risk and protective factors driving local opioid misuse and overdose in your community.
- Review the summaries in this document to identify programs and practices that seek to address your selected factors.
- Learn more about relevant programs and practices by following the links to additional resources.
- Determine if the level of evidence demonstrating effectiveness is sufficient for the program or practice you've selected.
- Determine how feasible it will be to implement a specific program or practice, given available resources and local conditions.³

¹ A program consists of implementing a set of predetermined structured activities where the activities are repeatedly implemented in exactly the same way every time (i.e., Strengthening Families Program: For Parents and Youth 10 – 14).

² A practice consists of a method, technique, or process that gets repeated. For example, a prescriber may adhere to Prescription Opioid Dosing Guidelines, but the prescriber will prescribe opioids based on what best fits the patient rather than repeatedly prescribe the same dose to everyone.

EDUCATION

Education programs and practices are implemented to increase awareness of the dangers of prescription opioid misuse for the public, as well as to educate health care providers about safe prescribing practices for prescription opioids. They also provide opportunities to teach individuals how to properly dispense, store, and dispose of controlled substances.

| The American Medicine Chest Challenge | |
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| Contacts | Name: The American Medicine Chest Challenge Phone: (877) 919-AMCC (2622) |
| Description | This public health initiative targets adults living in homes where children and teens spend time. It aims to raise awareness about the dangers of prescription drug misuse and create a national day dedicated to disposing of unused, unwanted, and expired medicine. The American Medicine Chest Challenge developed the “5 Steps” campaign to inspire Americans to (1) take inventory of their medicine (prescription and over-the-counter); (2) keep their medicine cabinet locked; (3) dispose of unused, unwanted, and expired medicine; (4) take medicine exactly as prescribed; and (5) talk to their children about prescription drug misuse. |
| Populations | Adults living in U.S. households with minors or in U.S. households where minors are sometimes present |
| Settings | Community |
| Evaluation Design | Non-experimental cross-sectional study of 1,791 randomly selected New Jersey adults. Participants were randomly selected to complete telephone-based polls, with 885 completing the first poll prior to the campaign launch (between October 21-27, 2010) and 906 completing the second poll following the campaign (between December 2 and 6, 2010). |
| Outcomes | Individuals exposed to the American Medicine Chest Challenge were more likely than their counterparts to: <ul style="list-style-type: none">• Take inventory of their prescription drugs.• Lock their medicine cabinets.• Dispose of leftover prescription drugs at a collection site.• Talk to their children about the dangers of non-medical prescription drug use. |

The American Medicine Chest Challenge

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| <p>Studies</p> | <p>Yanovitzky, I. (2011). <i>The American Medicine Chest Challenge (AMCC): 2010 media campaign evaluation: Eagleton survey data</i>. Retrieved from www.drugfreenj.org/assets/_control/content/files/rutgersnjreport.pdf</p> |
| <p>Additional Resources</p> | <p>The American Medicine Chest Challenge. (2010). <i>The American Medicine Chest Challenge</i>. Retrieved from http://www.americanmedicinechest.com/</p> <p>Forthofer, M. S., & Bryant, C. A. (2000). Using audience-segmentation techniques to tailor health behavior change strategies. <i>American Journal of Health Behavior</i>, 24(1), 36-43. https://doi.org/10.5993/AJHB.24.1.6</p> <p>Gabriel, R., Becker, L., Leahy, S. K., Landy, A. L., Metzger, J., Orwin, R., ... Stein-Seroussi, A. (2008). <i>Assessing the fidelity of implementation of the Strategic Prevention Framework in SPF SIG-funded communities: User's guide and fidelity assessment rubrics (version 2)</i>.</p> <p>Grier, S., & Bryant, C. A. (2005). Social marketing in public health. <i>Annual Review of Public Health</i>, 26, 319-339. https://doi.org/10.1146/annurev.publhealth.26.021304.144610</p> <p>Hastings, G., Stead, M., & Webb, J. (2004). Fear appeals in social marketing: Strategic and ethical reasons for concern. <i>Psychology & Marketing</i>, 21(11), 961-986. doi:10.1002/mar.20043</p> <p>Johnson, E. M., Porucznik, C. A., Anderson, J. W., & Rolfs, R. T. (2011). State-level strategies for reducing prescription drug overdose deaths: Utah's prescription safety program. <i>Pain Medicine</i>, 12(Suppl 2), S66–S72. https://doi.org/10.1111/j.1526-4637.2011.01126.x</p> <p>Lefebvre, R. C., & Flora, J. A. (1988). Social marketing and public health intervention. <i>Health Education Quarterly</i>, 15(3), 299–315. https://doi.org/10.1177/109019818801500305</p> <p>Media Campaign. (2009). Effectiveness of a mass media campaign for parents on teen prescription drug use. <i>Drug Prevention and Social Marketing Brief</i>, 4, 1–3. Retrieved from http://www.keeperxsafe.com/documents/Rx%20campaign.pdf</p> <p>National Highway Traffic Safety Administration. (2001). <i>Community how to guide on . . . media relations</i>. Retrieved from http://www.nhtsa.gov/people/injury/alcohol/Community%20Guides%20HTML/Book7_MediaRelations.html</p> <p>Substance Abuse and Mental Health Services Administration (SAMHSA). (n.d.). <i>Understanding social marketing</i>. Retrieved from https://preventionsolutions.edc.org/services/resources/understanding-social-marketing</p> <p>Work Group for Community Health and Development. (2017). <i>Chapter 45, Section 2: Conducting a Social Marketing Campaign</i>. Retrieved from http://ctb.ku.edu/en/table-of-contents/sustain/social-marketing/conduct-campaign/main</p> |

CMEs Focusing on Buprenorphine Use and Best Prescribing Practices

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| Contacts | <p>Name: Michelle Lofwall</p> <p>Address: Department of Psychiatry, University of Kentucky, 3470 Blazer Parkway, Lexington, KY 40509, USA</p> <p>Phone: (859) 323-6774</p> <p>Email: michelle.lofwall@uky.edu</p> |
| Description | <p>This continuing medical educational (CME) program was developed for physicians to encourage clinical practice behaviors to reduce the risk of buprenorphine and buprenorphine/naloxone diversion and misuse. The course provided information on best practices for opioid dependence treatment using buprenorphine pharmacotherapy, and potential strategies to reduce the risk of diversion and misuse.</p> |
| Populations | Physicians |
| Settings | Johnson City, TN and Milwaukee, WI |
| Evaluation Design | <p>Non-experimental prospective cohort study design with 67 physicians participating in a continuing medical educational (CME) activity in Johnson City, TN, May 2009, or in Milwaukee, WI, September 2009. Physicians were instructed to complete four self-report surveys: one before the CME, one after the CME completed on-site, and two at 1 and 3 months after the CME. The first, third, and fourth survey could be completed online whereas the second was completed on paper.</p> |
| Outcomes | <p>CMEs focusing on buprenorphine use and best prescribing practices in two U.S. regions were associated with greater pharmacology, craving, and legislative knowledge among prescribers, and improved clinical practice behaviors aimed at reducing buprenorphine and buprenorphine/naloxone diversion and misuse.</p> |
| Studies | <p>Lofwal, M. R., Wunsch, M. J., Nuzzo, P. A., & Walsh, S. L. (2011). Efficacy of continuing medical education to reduce the risk of buprenorphine diversion. <i>Journal of Substance Abuse Treatment</i>, 41(3), 321–329.</p> |
| Additional Resources | <p>American College of Emergency Physicians. (2013). <i>Continuing medical education for licensure reregistration</i>. Retrieved from http://www.acep.org/uploadedFiles/ACEP/CME/CME-State-CME-Requirements_2013.pdf</p> <p>Cervero, R., & Gaines, J. (2014). <i>Effectiveness of continuing medical education: Updated synthesis of systematic reviews</i>. Retrieved from http://www.accme.org/sites/default/files/2014_Effectiveness_of_Continuing_Medical_Education_Cervero_and_Gaines_0.pdf</p> |

CMEs Focusing on Buprenorphine Use and Best Prescribing Practices

Additional Resources (cont.)

- Cochella, S., & Bateman, K. (2012). Provider detailing: an intervention to decrease prescription opioid deaths in Utah. *Pain Medicine*, 12(Suppl 2) S73–S76. <https://doi.org/10.1111/j.1526-4637.2011.01125.x>
- Dowell, D., Haegerich, T. M., & Chou, R. (2016). CDC guideline for prescribing opioids for chronic pain—United States, 2016. *JAMA*. Retrieved from <http://jama.jamanetwork.com/article.aspx?articleid=2503508>
- Franklin, G. M., Mai, J., Turner, J., Sullivan, M., Wickizer, T., & Fulton-Kehoe, D. (2012). Bending the prescription opioid dosing and mortality curves: Impact of the Washington State opioid dosing guideline. *American Journal of Industrial Medicine*, 55(4), 325–331. doi:10.1002/ajim.21998
- Massachusetts Legislature. (n.d.). *General Laws, Part 1, Title XV, Chapter 94C, Section 18*. Retrieved from <https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXV/Chapter94C/Section18>
- National Alliance for Model State Drug Laws. (n.d.) Model health professionals training act. Retrieved from http://www.namsdl.org/library/Section_F_Model_Health_Professionals_Training_Act/
- National Conference of Insurance Legislators. (2013). *Best practices to address opioid abuse, misuse & diversion*. Retrieved from <http://www.namsdl.org/library/04A5C244-07CA-6E4E-90E19406642FE80B/>
- Office of National Drug Control Policy. (2011). *Epidemic: Responding to America's prescription drug abuse crisis*. Retrieved from https://www.ncjrs.gov/pdffiles1/ondcp/rx_abuse_plan.pdf
- Physicians for Responsible Opioid Prescribing. (n.d.). *Cautious, evidence-based opioid prescribing*. Retrieved from http://supportprop.org/educational/PROP_OpioidPrescribing.pdf
- Safe and Competent Opioid Prescribing Education. (n.d.). *What is the SCOPE of pain?* Retrieved from <https://www.scopeofpain.com/about-us/>
- Substance Abuse and Mental Health Services Administration (SAMHSA). (2012). *COPE: Collaborative opioid prescribing education*. Rockville, MD: National Registry of Evidence-based Programs and Practices, SAMHSA. Retrieved from <https://nrepp.samhsa.gov/Legacy/ViewIntervention.aspx?id=270>
- U.S. Department of Health and Human Services, Behavioral Health Coordinating Committee. (2013). *Addressing prescription drug abuse in the United States: Current activities and future opportunities*. Retrieved from https://www.cdc.gov/drugoverdose/pdf/hhs_prescription_drug_abuse_report_09.2013.pdf
- U.S. Food and Drug Administration. (2014). *Guidance for industry and FDA Staff—Dear health care provider letters: Improving communication of important safety information*. Retrieved from <http://www.fda.gov/downloads/drugs/guidancecomplianceregulatoryinformati>

CMEs Focusing on Buprenorphine Use and Best Prescribing Practices

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| Additional Resources (cont.) | <p>on/guidances/ucm233769.pdf</p> <p>U.S. Food and Drug Administration. (2015). <i>Extended-Release (ER) and long-acting (LA) opioid analgesics risk evaluation and mitigation strategy (REMS)</i>. Retrieved from https://www.fda.gov/downloads/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/UCM311290.pdf</p> <p>U.S. Food and Drug Administration. (2017). <i>Introduction for the FDA blueprint for prescriber education for extended-release and long-acting opioid analgesics</i>. Retrieved from https://www.fda.gov/downloads/Drugs/DrugSafety/InformationbyDrugClass/UCM515636.pdf</p> |
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Educational Interventions (Simulation)

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| Contacts | <p>Name: Alexandra Nielsen</p> <p>Address: Portland State University, PO Box 751, Portland, OR 97207-0751, USA.</p> <p>Email: alexan3@pdx.edu</p> |
| Description | <p>Researchers developed a systems dynamic (SD) model using various relevant prescription opioid use/misuse data from 1995 to 2008 and expert recommendations for its parameters and structure. The model results were tested against real world data to ensure its accuracy and were then used to separately simulate the results of three potential educational interventions: (1) a prescriber education program, (2) a patient education program, and (3) a public education program.</p> |
| Populations | <p>Prescribers, patients, general public</p> |
| Settings | <p>Nationwide (simulation)</p> |
| Evaluation Design | <p>Simulated prospective experimental study model using data collected from 1995 to 2008. Researchers simulated the effects of (1) a prescriber education program that would double prescribers' perceptions of risk of prescribing opioids and effectiveness in monitoring patients for opioid misuse; (2) a patient education program that would halve patient rates of misuse of prescribed opioids; and (3) a public education program that halved prescription opioid misuse rates of initiation and the overall perceived popularity of opioid misuse.</p> |
| Outcomes | <p>Implementation of the prescriber education program predicted decreases in:</p> <ul style="list-style-type: none"> • The number of patients misusing or abusing prescription opioids. |

Educational Interventions (Simulation)

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| Outcomes (cont.) | <ul style="list-style-type: none"> • The number of patients treated with opioids, including those with legitimate treatment needs. • Prescribed opioid overdose death rates. • Diverted opioid and heroin overdose death rates due to drug trafficking being constrained by reduced supply. <p>Implementation of the patient education program predicted:</p> <ul style="list-style-type: none"> • Decreases in the rate of prescribed opioid overdose deaths. • Increases in the diverted opioid overdose death rate. The researchers attributed this to the fact that the decrease in prescribed opioid overdose deaths would lead to reduced perceptions of risk among prescribers and law enforcement, enabling easier diversion of prescription opioids to occur. <p>Implementation of the public education program predicted decreases in:</p> <ul style="list-style-type: none"> • All opioid-related rates of overdose deaths. • The rate of prescription opioid misuse and abuse. |
| Studies | <p>Wakeland, W., Nielsen, A., Schmidt, T. D., McCarty, D., Webster, L. R., Fitzgerald, J., & Haddox, J. D. (2013). Modeling the impact of simulated educational interventions on the use and abuse of pharmaceutical opioids in the United States: A report on initial efforts. <i>Health Education & Behavior</i>, 40(1, Suppl), 74S–86S. doi:10.1177/1090198113492767</p> |
| Additional Resources | <p>None</p> |

Home Environmental Strategy to Reduce Access to Harmful Legal Products

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| Contacts | <p>Name: David A. Collins Email: collins@pire.org</p> |
| Description | <p>The Home Environmental Strategy (HES) encouraged parents of children in grades 5-7 to reduce home availability of harmful legal products (HLPs), including prescription drugs, through educational “Family Nights” that provided information on the dangers of Harmful Legal Products (HLPs). The HES-HLP Prevention Project was part of a National Institute on Drug Abuse pilot project. From 2004 to 2008, researchers, community coalitions, and schools collaborated to implement three primary prevention strategies—the Community Readiness Model, the Home Environmental Strategy, and Think Smart—in rural/frontier Alaskan communities. The strategies were implemented in tandem, though each could be implemented on its own.</p> |

Home Environmental Strategy to Reduce Access to Harmful Legal Products

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| Populations | Local community members, parents of school-age children, school-age children |
| Settings | Four rural/frontier Alaskan communities |
| Evaluation Design | Prospective, non-experimental design using a survey of all parents of 5 th , 6 th , and 7 th graders in all 11 public schools in the four selected communities. Data were collected before and after the intervention was implemented in 2006 via telephone interviews with 277 parents. |
| Outcomes | <p>After participating in the Home Environmental Strategy (HES), parents were more likely to restrict access to their prescription drugs. HES implementation was also found to be associated with a decrease in the availability of prescription drugs and other harmful legal products.</p> <p>HES has been linked to parents becoming more likely to lock up prescription drugs.</p> |
| Studies | Collins, D. A., Johnson, K. W., & Shamblen, S. R. (2012). Examining a home environmental strategy to reduce availability of legal products that can be misused by youth. <i>Substance Use & Misuse</i> , 47(12) doi: 10.3109/10826084.2012.716481 |
| Additional Resources | <p>Johnson, K. W., Shamblen, S. R., Ogilvie, K. A., Collins, D., & Saylor, B. (2009). Preventing youths' use of inhalants and other harmful legal products in frontier Alaskan communities: A randomized trial. <i>Prevention Science</i>, 10(4), 298–312. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3735174/</p> <p>Johnson, K., Courser, M., Holder, H., Miller, B., Ogilvie, K., Moore, R., . . . Saltz, B. (2007). A community prevention intervention to reduce youth from inhaling and ingesting harmful legal products. <i>Journal of Drug Education</i>, 37(3), 227–247. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2443954/</p> <p>Johnson, K. W., Ogilvie, K. A., Collins, D. A., Shamblen, S. R., Dirks, L. G., Ringwalt, C. L., & Norland, J. J. (2010). Studying implementation quality of a school-based prevention curriculum in frontier Alaska: Application of video-recorded observations and expert panel judgment. <i>Prevention Science</i>, 11(3), 275–286. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3569516/</p> <p>Oetting, E. R., Plested, B. A., Edwards, R. W., Thurman, P. J., Kelly, K. J., Beauvais, F., & Stanley, L. (2014). <i>Community readiness for community change</i>. Fort Collins, CO: Tri-Ethnic Center for Prevention Research, University of Colorado. Retrieved from http://www.triethniccenter.colostate.edu/wp-content/uploads/sites/24/2018/04/CR_Handbook_8-3-15.pdf</p> |

Home Environmental Strategy to Reduce Access to Harmful Legal Products

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| Additional Resources (cont.) | <p>Ogilvie, K. A., Moore, R. S., Ogilvie, D. C., Johnson, K. W., Collins, D. A., & Shamblen, S. R. (2008). Changing community readiness to prevent the abuse of inhalants and other harmful legal products in Alaska. <i>Journal of Community Health, 33</i>(4), 248–258. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2444046/</p> <p>Prochaska, J. O., & Di Clemente, C. (1982). Trans-theoretical therapy: Toward a more integrative model of change. <i>Psychotherapy: Theory, Research, and Practice, 19</i>(3), 276–288. Retrieved from https://www.researchgate.net/publication/232461028_Trans-Theoretical_Therapy_-_Toward_A_More_Integrative_Model_of_Change</p> |
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Iowa Strengthening Families Program: For Parents and Youth 10 – 14

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| Contacts | <p>Name: Richard Spoth Phone: (515) 294-5383 Email: rlspoth@iastate.edu</p> |
| Description | <p>The Iowa Strengthening Families Program (ISFP) includes six, two-hour concurrent parent and youth curricular sessions followed by a family skill-building segment. A seventh family session concludes the program. Sessions are typically conducted in the evenings; limited to 7–10 families; and use videos that model youth/parent situations designed to promote parent nurturing skills, effective parental discipline, youth coping and stress-reduction skills, and youth future-orientation. ISFP for Parents and Youth 10–14 includes additional booster sessions conducted in the classroom by teachers one year after middle school sessions and again in 11th grade.</p> |
| Populations | <p>6th and 7th grade students and their parents</p> |
| Settings | <p>Iowa and Pennsylvania school districts with at least 15 percent of the students eligible for free or reduced-cost lunch programs</p> |
| Evaluation Design | <p>Three prospective, experimental trials with youth assigned to: (Study 1) the Iowa Strengthening Families Program (ISFP) or a control group; (Study 2) a modification of ISFP called the Strengthening Families Program: For Parents and Youth 10–14 (SFP 10–14) plus Life Skills Training (LST) or a control group; and (Study 3) the SFP 10–14 in conjunction with a second intervention chosen from a menu (LST, Project Alert, or All Stars) or a control group. Pre-test baseline data and follow-up data were collected up to 14 years after program implementation: In trial one, 446 sixth graders completed the pre-test; and in trial two, 226 seventh graders completed the pre-test; and for trial three, no sample size was provided.</p> |

Iowa Strengthening Families Program: For Parents and Youth 10 – 14

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| Outcomes | <p>In 12th grade, and at ages 21, 22, 23, and 25, former intervention students had lower rates of prescription opioid misuse (POM) and lifetime prescription drug misuse overall (PDMO) than control students. More specifically:</p> <ul style="list-style-type: none"> • In Study 1, ISFP participants had lower rates of POM and PDMO at age 25. • In Study 2, participants in SFP 10–14 plus LST had lower rates of POM and PDMO at ages 21, 22, and 25 years. • In Study 3, participants in SFP 10–14 plus 1 of 3 school-based interventions had lower rates of POM and PDMO in 12th grade. |
| Studies | <p>Spoth, R., Trudeau, L., Shin, C., Ralston, E., Redmond, C., Greenberg, M., & Feinberg, M. (2013). Longitudinal effects of universal preventive intervention on prescription drug misuse: Three randomized controlled trials with late adolescents and young adults. <i>American Journal of Public Health, 103</i>(4), 665–672.</p> |
| Additional Resources | <p>Iowa State University Extension and Outreach (n.d.). Strengthening Families Program: For parents and youth 10–14. Retrieved from https://www.extension.iastate.edu/sfp10-14/content/resources</p> |

The Meth Project

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| Contacts | <p>Name: Georgia Meth Project Address: P.O. Box 724436, Atlanta, GA 31139 Phone: (404) 556-9787 Email: info@georgiamethproject.org</p> |
| | <p>Name: Hawaii Meth Project Address: 1130 N. Nimitz Hwy, Suite A-259, Honolulu, H 96817 Phone: (808) 545-3228 x34 Email: info@hawaiimethproject.org</p> |
| | <p>Name: Idaho Meth Project Address: P.O. Box 738, Boise, ID 83701-0738 Phone: (888) 331-2060 Email: info@idahomethproject.org</p> |

| The Meth Project | |
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| Contacts (cont.) | <p>Name: Jean Davies (Wyoming Meth Project) Address: P.O. Box 51688-1888, Casper, WY 82605 Phone: (307) 268-7136 Email: info@wyomingmethproject.org</p> <hr/> <p>Name: The Meth Project & The Partnership for Drug-Free Kids Address: 352 Park Avenue South, New York, NY 10010 Phone: (212) 922-1560 Email: info@methproject.org</p> |
| Description | The Meth Project is a large-scale prevention campaign aimed at reducing methamphetamine use among youth through public service messaging, public policy, and outreach. The campaign uses television, radio, print, billboard, and Internet advertising, as well as in-school lessons to communicate the risks of using methamphetamines. It has been implemented in several states, including Colorado, Georgia, Hawaii, Idaho, and Wyoming. |
| Populations | Adolescents and young adults age 12 to 24 |
| Settings | Community |
| Evaluation Design | <p>Georgia: Pre- and post-test study with 4,454 adolescents age 12 to 17 and 634 young adults age 18 to 24 (Georgia Meth, 2011). Adolescents recruited from 41 randomly selected junior and senior high schools across Georgia (sampled from two or three classes per school). Young adults were recruited using random telephone digit dial. Surveys were conducted from November 6, 2009 to February 26, 2010 prior to the launch of the outreach campaign, and from February 11 to April 15, 2011 after the first wave of the campaign was implemented.</p> <p>Hawaii: Interrupted time series study of 3,305 youths recruited using a 4-stage probability sampling (Hawaii Meth, 2011). Study time span was March 2009 to March 2011 (25 months).</p> <p>Idaho: Interrupted time series of 11,143 youths age 12 to 17 recruited using a 4-stage probability sampling (Idaho Meth, 2010). Surveys were conducted at four time points: 1) from September 12, 2007 to November 16, 2007 prior to launch of the outreach campaign, 2) from November 21, 2008 to December 19, 2008 following the first wave of the project's messaging campaign, 3) from November 9, 2009 to December 11, 2009, following the second wave of the campaign, and 4) November 8, 2010 to December 15, 2010, following the third wave of the campaign.</p> |

| The Meth Project | |
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| Evaluation Design (cont.) | <p>Wyoming: Interrupted time series study of 5,700 youths recruited using a 4-stage probability sampling (Wyoming Meth, 2011). Surveys were conducted at four time points, 1) from April 18 to May 30, 2008 prior to the launch of the outreach campaign, 2) from March 4 to May 22, 2009, following the first phase of the campaign, 3) from March 30 to May 21, 2010, following the second phase of the campaign, and 4) from March 21 to May 31, 2011 following the third phase of the campaign.</p> |
| Outcomes | <p>Georgia: More 12- to 17-year-olds disapproved of experimental use of meth, heroin, and cocaine in 2011 than in 2010. Perception of ease to acquire cocaine and heroin decreased from 2010 to 2011 among 12 to 17-year-olds (Georgia Meth, 2011).</p> <p>Hawaii: Between 2009 and 2011, the percentage of 12 to 17-year-olds that disapproved of experimental use of meth, as well as the percentage of those who see a "great risk" in taking meth, cocaine, and heroin had decreased. Among 18 to 24-year-olds, the percentage of those who saw a "great risk" in taking meth, heroin, and cocaine also decreased (Hawaii Meth, 2011).</p> <p>Idaho: Between 2007 and 2010, the percent of 12 to 17-year-olds who disapproved of experimental (once or twice) and regular use of meth, heroin, and cocaine had increased (Idaho Meth, 2010).</p> <p>Wyoming: Perception of ease to acquire meth, heroin, marijuana and cocaine decreased from 2008 to 2011 (Wyoming Meth, 2011).</p> |
| Studies | <p>Roper Public Affairs and Corporate Communications (2011). <i>Georgia meth use & attitudes survey 2011: Statewide survey measuring attitudes and behaviors towards methamphetamine in Georgia</i>. New York, NY: GfK Roper Public Affairs & Corporate Communications. Retrieved from http://georgiamethproject.org/documents/2011%20Georgia%20Meth%20Use%20Attitudes61411.pdf</p> <p>Roper Public Affairs and Corporate Communications (2011). <i>Hawaii meth use & attitudes survey 2011: Statewide survey measuring attitudes and behaviors towards methamphetamine in Hawaii</i>. New York, NY: GfK Roper Public Affairs & Corporate Communications.</p> <p>Roper Public Affairs and Corporate Communications (2011). <i>Idaho meth use & attitudes survey 2010: Statewide survey measuring attitudes and behaviors towards methamphetamine in Idaho</i>. New York, NY: GfK Roper Public Affairs & Corporate Communications. Retrieved from http://idahomethproject.org/wp-content/themes/methproject/assets/documents/Idaho%20Meth%20Use%20and%20Attitudes%20Survey%202011%202-22-11.pdf</p> <p>Roper Public Affairs and Corporate Communications (2011). <i>Wyoming meth use & attitudes survey 2010: Statewide survey measuring attitudes and behaviors towards methamphetamine in Wyoming</i>. New York, NY: GfK Roper Public Affairs & Corporate Communications.</p> |

| The Meth Project | |
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| Studies (cont.) | |
| Additional Resources | Meth Project Foundation. (2016). <i>Meth: Not even once</i> . Retrieved from http://www.foundation.methproject.org/ |

| National Youth Anti-Drug Media Campaign Prescription Drug Prevention Campaign | |
|---|--|
| Contacts | <p>Name: Media Campaign</p> <p>Address: Palmer St, Westminster, London SW1H 0PH</p> <p>Phone: 0203 733 0780</p> <p>Email: info@mediacampaign.org</p> |
| Description | National Youth Anti-Drug Media Campaign (NYAMC)'s prescription drug prevention campaign aims to raise parents' awareness about teen prescription drug misuse, as well as encourage parents to secure their prescription drugs at home, through TV, print, and Internet advertising; public relations outreach; and point-of-purchase messaging in pharmacies. |
| Populations | Parents of teens ages 14 to 16 |
| Settings | Nationwide |
| Evaluation Design | Non-experimental cross-sectional study with 3,800 parents of teenagers aged 11 to 16 years. Parents were randomly selected to complete the telephone interviews via random-digit dialing. 1,200 parent interviews were conducted between November 2007 and January 2008 pre-campaign launch, and 2,600 interviews were conducted between February 2008 and July 2008 post-campaign launch. |
| Outcomes | <p>Campaign advertising was associated with an increase in parents':</p> <ul style="list-style-type: none"> • Awareness of prescription drug media messages. • Beliefs about the risks of teen prescription drug abuse. • Intentions to control the supply of prescription drugs in their homes. <p>There were no observed effects on interest in prescription drugs among teens.</p> |
| Studies | Media Campaign. (2009). Effectiveness of a mass media campaign for parents on teen prescription drug use. <i>Drug Prevention and Social Marketing Brief</i> , 4, 1–3. Retrieved from http://www.keeprxsafe.com/documents/Rx%20campaign.pdf |

National Youth Anti-Drug Media Campaign Prescription Drug Prevention Campaign

Additional Resources

Forthofer, M. S., & Bryant, C. A. (2000). Using audience-segmentation techniques to tailor health behavior change strategies. *American Journal of Health Behavior*, 24(1), 36-43. <https://doi.org/10.5993/AJHB.24.1.6>

Gabriel, R., Becker, L., Leahy, S. K., Landy, A. L., Metzger, J., Orwin, R., ... Stein-Seroussi, A. (2008). *Assessing the fidelity of implementation of the Strategic Prevention Framework in SPF SIG-funded communities: User's guide and fidelity assessment rubrics (version 2)*.

Grier, S., & Bryant, C. A. (2005). Social marketing in public health. *Annual Review of Public Health*, 26, 319-339. <https://doi.org/10.1146/annurev.publhealth.26.021304.144610>

Hastings, G., Stead, M., & Webb, J. (2004). Fear appeals in social marketing: Strategic and ethical reasons for concern. *Psychology & Marketing*, 21(11), 961-986. doi:10.1002/mar.20043

Johnson, E. M., Porucznik, C. A., Anderson, J. W., & Rolfs, R. T. (2011). State-level strategies for reducing prescription drug overdose deaths: Utah's prescription safety program. *Pain Medicine*, 12(Suppl 2), S66–S72. <https://doi.org/10.1111/j.1526-4637.2011.01126.x>

Lefebvre, R. C., & Flora, J. A. (1988). Social marketing and public health intervention. *Health Education Quarterly*, 15(3), 299–315. <https://doi.org/10.1177/109019818801500305>

National Highway Traffic Safety Administration. (2001). *Community how to guide on . . . media relations*. Retrieved from http://www.nhtsa.gov/people/injury/alcohol/Community%20Guides%20HTML/Book7_MediaRelations.html

Substance Abuse and Mental Health Services Administration (SAMHSA). (n.d.). *Understanding Social Marketing*. Retrieved from <https://preventionsolutions.edc.org/services/resources/understanding-social-marketing>

Work Group for Community Health and Development. (2017). *Chapter 45, Section 2: Conducting a Social Marketing Campaign*. Retrieved from <http://ctb.ku.edu/en/table-of-contents/sustain/social-marketing/conduct-campaign/main>

Partnership for a Drug Free America Antidrug Public Service Announcements

Contacts

Name: Martin Fishbein, PhD

Address: Annenberg Public Policy Center, University of Pennsylvania, 3620 Walnut St, Philadelphia, PA 19104

Email: mfishbein@asc.upenn.edu

Partnership for a Drug Free America Antidrug Public Service Announcements

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| Description | Partnership for a Drug Free America has produced multiple antidrug public service announcements (PSAs) that aim to prevent the initiation of illegal drug use among young adolescents. PSAs are meant to be broadcast on television during the time periods when the target audience is watching. |
| Populations | Middle and high school students |
| Settings | Television |
| Evaluation Design | Experimental study with 3,608 students in grades 5 through 12 in 10 schools. Students were randomized by class to one of five experimental conditions or one control condition. The 2,783 students in the five experimental conditions viewed a different set of six antidrug public service announcements (PSAs). The 825 students in the control condition viewed a non-drug-related television program. Students completed a questionnaire with three parts: 1) a pretest right before viewing the PSAs or television program, 2) a series of questions right after viewing each PSA or television program, and 3) another series of questions after viewing all PSAs or the program. |
| Outcomes | Sixteen of 30 PSAs were rated as more effective than the control program, and six of 30 PSAs were rated as significantly less effective than the control program. Effectiveness was related to realism, amount learned, negative emotion, and positive emotion, and effectiveness scores were correlated with ratings of the harmfulness, danger, and perceived norms associated with engaging in a number of risky behaviors. |
| Studies | Fishbein, M., Hall-Jamieson, K., Zimmer, E., Von Haeften, I., & Nabi, R. (2002). Avoiding the boomerang: Testing the relative effectiveness of antidrug public service announcements before a national campaign. <i>American Journal of Public Health, 92</i> (2), 238-245. |
| Additional Resources | Partnership for Drug-Free Kids. (2017). <i>Partnership for Drug-Free Kids: Where families find answers</i> . Retrieved from https://drugfree.org/ |

Prescription Opioid Dosing Guidelines (Washington)

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|-----------------|---|
| Contacts | <p>Name: Renu K. Garg, MPH (Garg et al., 2013)</p> <p>Address: Department of Epidemiology, University of Washington, 130 Nickerson St, Suite 212, Seattle, WA 98109</p> <p>Email: rkgarg@uw.edu</p> |
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Prescription Opioid Dosing Guidelines (Washington)

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| Contacts (cont.) | <p>Name: Simone Javaher RN, BSN, MPA (Washington State Agency Medical Directors' Group, n.d.)</p> <p>Address: Agency Medical Directors' Group, P.O. Box 44321, Olympia, Washington 98504</p> <p>Phone: (360) 902-4246</p> <p>Email: simone.javaher@lni.wa.gov</p> |
| Description | <p>Dosing guidelines are a voluntary resource intended to provide prescribers additional information on appropriate levels of use of prescription drugs. Guidelines provide recommendations on safe and effective dosage amounts for different patient characteristics and conditions. In 2007, the Washington State Agency Medical Directors' Group, a collaboration of various state agencies, developed a new set of opioid dosing guidelines for prescribers. The group cited primary care providers who do not specialize in pain management as a particular focus of the guidelines.</p> |
| Populations | <p>Prescribers</p> |
| Settings | <p>Washington State</p> |
| Evaluation Design | <p>Prospective, non-experimental study that used monthly prescription coverage claims data from Washington's worker compensation fund from April 1, 2004–December 31, 2010 to evaluate changes in prescription opioid use and dosage amounts before and after guideline implementation in 2007. There were 161,283 individuals who received at least one prescription during the study period.</p> |
| Outcomes | <p>Dosing guidelines have been linked to declines in the:</p> <ul style="list-style-type: none"> • Monthly prevalence of prescription opioid use. • Number of individuals with any prescription who received chronic opioid therapy. • Odds of an individual prescribed opioids receiving a high-dosage prescription (greater than 120 milligrams/dose). |
| Studies | <p>Garg, R. K., Fulton-Kehoe, D., Turner, J. A., Bauer, A. M., Wickizer, T., Sullivan, M. D., & Franklin, G. M. (2013). Changes in opioid prescribing for Washington workers' compensation claimants after implementation of an opioid dosing guideline for chronic noncancer pain: 2004 to 2010. <i>The Journal of Pain</i>, 14(12), 1620-1628. doi:10.1016/j.jpain.2013.08.001</p> |
| Additional Resources | <p>Washington State Agency Medical Directors' Group. (n.d.) <i>Opioid dose calculator</i>. Retrieved from http://www.agencymeddirectors.wa.gov/opioiddosing.asp</p> |

Provider Detailing in Utah

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| Contacts | <p>Name: Susan Cochella, MD, MPH</p> <p>Address: Department of Family and Preventive Medicine, University of Utah School of Medicine, 375 Chipeta Way, Suite A, Salt Lake City, UT 84108, USA</p> <p>Phone: 801-587-3460</p> <p>Fax: 801-581 2771</p> <p>Email: susan.cochella@hsc.utah.edu</p> |
| Description | <p>Provider detailing is a Utah Department of Health program on recommended opioid prescribing practices developed for and presented to health care workers, with an emphasis on primary care physicians. The program comprises one-hour presentations on each of the following recommended practices:</p> <ol style="list-style-type: none"> 1. Set prescription dosages low to start and increase gradually as needed. 2. Obtain sleep studies for all patients prescribed moderate or high dosages of long-acting opioids. 3. Obtain EKGs prior to methadone dosage increases. 4. Avoid mixing opioid prescriptions with prescriptions for sleep aids or benzodiazepines. 5. Avoid prescribing long-acting opioids for acute pain. 6. Educate patients and their families about the risks of opioids. |
| Populations | <p>Primary care physicians and other health care workers</p> |
| Settings | <p>Rural and urban physician offices and practices</p> |
| Evaluation Design | <p>Prospective, non-experimental survey of program participants assessed immediately after presentations in 2008 and again after one and six months on confidence in their prescribing practices and adoption of recommended practices. Also, prospective, non-experimental review of annual medication-related overdose death rates from state epidemiological surveillance data from 2007–2009.</p> |
| Outcomes | <p>Among physicians participating in the detailing educational program:</p> <ul style="list-style-type: none"> • Most (90%) reported confidence in describing the need for improved prescribing practices and adopting the recommended practices. • Most (85%) reported confidence in describing the practices and evaluating them. • Most (60 to 80%) stopped prescribing long-acting opioids for acute pain. |

| Provider Detailing in Utah | |
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| Outcomes (cont.) | <ul style="list-style-type: none"> • Half started opioid prescriptions at lower dosages and increased them gradually. • Between 30 to 50 percent obtained EKGs and sleep studies as appropriate. • Detailing has been linked to decreases in the number of unintentional prescription-drug-involved overdose deaths statewide from 2007 to 2008. |
| Studies | Cochella, S., & Bateman, K. (2011). Provider detailing: An intervention to decrease prescription opioid deaths in Utah. <i>Pain Medicine</i> , 12(Suppl 2), S73–S76. doi:10.1111/j.1526-4637.2011.01125.x |
| Additional Resources | Community Catalyst. (2017). <i>Prescription drugs: Academic detailing</i> . Retrieved from https://www.communitycatalyst.org/resources/tools/medicaid-report-card/prescription-drugs/prescription-drugs-academic-detailing |

| SmartRx: Web-based Intervention | |
|---------------------------------|--|
| Contacts | <p>Name: Diane K. Deitz, Ph.D. (Deitz, Cook, & Hendrickson, 2011) Address: ISA Associates, Alexandria, Virginia, USA Email: ddeitz@isagroup.com</p> <hr/> <p>Name: The Ohio State Medical Association Email: info@osma.org</p> |
| Description | SmartRx is a multimedia, Web-based education and intervention program, focusing on five classes of prescription drugs: analgesics, sedative-hypnotics, stimulants, antidepressants, and tranquilizers. The program educates hospital employees in West Virginia and Ohio on the medication properties of these prescriptions, safe and responsible use of these prescriptions, and self-management strategies to improve health without these prescriptions. |
| Populations | Hospital employees in West Virginia and Ohio |
| Settings | Online via personal computers and Web-enabled devices |
| Evaluation Design | Prospective, randomized controlled experimental design with 362 volunteer participants (346 completed pre- and post-tests) in 2007. Participants completed a pre-test questionnaire, were randomly assigned to the program or a wait-list control group, and completed a post-test questionnaire after the intervention. |

SmartRx: Web-based Intervention

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| Outcomes | <p>Compared to those who did not participate in SmartRx, program participants showed increases in the following:</p> <ul style="list-style-type: none"> • Knowledge about prescription drug medication properties. • Measures of confidence in adhering to physician medication instructions and managing problems with the medication. <p>However, SmartRx participants were no more likely than comparison group participants to demonstrate improvements in knowledge of safe and responsible use or self-management strategies.</p> |
| Studies | <p>Deitz, D. K., Cook, R. F., & Hendrickson, A. (2011). Preventing prescription drug misuse: Field test of the SmartRx Web program. <i>Substance Use & Misuse</i>, 46(5), 678–686. doi:10.3109/10826084.2010.528124</p> |
| Additional Resources | <p>Ohio State Medical Association. (2017). <i>Smart Rx</i>. Retrieved from https://mindsetdigital.com/smartrx2017/</p> |

Substance Abuse Prevention Videotapes

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|--------------------------|--|
| Contacts | <p>Name: Joan M. Polansky</p> <p>Address: Lewis & Clark College, 0615 S. W. Palatine Hill Road, Portland, OR 97219-7899</p> <p>Email: polansky@lclark.edu</p> |
| Description | <p>These videotapes use several different methods to prevent substance misuse in middle schools, including information-based programming (such as <i>Downfall Sports and Drugs</i>), social skills approaches (such as <i>Straight at Ya</i>), and assertiveness training (such as <i>Killing Time</i>).</p> |
| Populations | <p>Mexican American students in grades 7-9</p> |
| Settings | <p>School</p> |
| Evaluation Design | <p>Experimental study with 312 adolescents from the rural southwest. The experiment was first conducted with 153 seventh- and eighth-grade students who were stratified by gender and classroom before being randomly assigned to either one of three experimental conditions or a control condition. The three experimental conditions involved viewing one of three videotapes addressing different skills related to substance misuse prevention. The control condition did not view a video. Data were collected over the course of four weeks before and after the viewing of each video tape, with the control participants assessed concurrently.</p> |

| Substance Abuse Prevention Videotapes | |
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| Evaluation Design (cont.) | A modified replication of the study was conducted with 159 ninth grade students in which data were collected over the course of one week. |
| Outcomes | <p>Among seventh- and eighth-grade students, there were no differences observed on specific measures of high theoretical relevance (i.e., Knowledge, Help Seeking, and Drug Conformity). Ninth-grade students who watched the assertion-training videotape (<i>Killing Time</i>) had increased ability to withstand peer pressure to use drugs.</p> <p>The information-based video (<i>Downfall Sports and Drugs</i>) and the social skills video (<i>Straight at Ya</i>) produced no effects on specific measures of high theoretical relevance.</p> |
| Studies | Polansky, J. M., Buki, L. P., Horan, J. J., Ceperich, S. D., & Burows, D. D. (1999). The effectiveness of substance abuse prevention videotapes with Mexican American adolescents. <i>Hispanic Journal of Behavioral Sciences</i> , 21(2), 186-198. |
| Additional Resources | None |

| Think Smart | |
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| Contacts | <p>Name: Knowlton W. Johnson</p> <p>Email: kwjohnson@pire.org</p> |
| Description | Think Smart is a weekly interactive program for 5 th and 6 th graders taught by teachers in the classroom. Among other lessons, it teaches alternatives to drug use and how to refuse drug offers. From 2004 to 2008, researchers, community coalitions, and schools collaborated to implement multiple prevention strategies in rural/frontier Alaska communities as part of a National Institute on Drug Abuse pilot project. The three primary strategies were (1) the Community Readiness Model, (2) the Home Environmental Strategy (HES), and (3) Think Smart. The strategies were implemented in tandem, though each could be implemented on its own. |
| Populations | 5th and 6th graders |
| Settings | Classrooms in schools in 14 communities in rural/frontier Alaska |

| Think Smart | |
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| Evaluation Design | Prospective, experimental design with communities placed in either the intervention or control group using a procedure that first matched communities on three variables before random assignment to intervention or control conditions; data collected from 460 youth at baseline, 401 youth at immediate post-intervention and 428 youth at six to seven months follow-up. |
| Outcomes | Compared to youth in the control group, Think Smart participants were less likely to be using harmful legal products (HLPs), including prescription drugs, at post-intervention. No effect was found on past 30-day alcohol, marijuana, or tobacco use. |
| Studies | Johnson, K. W., Shamblen, S. R., Ogilvie, K. A., Collins, D., & Saylor, B. (2009). Preventing youths' use of inhalants and other harmful legal products in frontier Alaskan communities: A randomized trial. <i>Prevention Science: The Official Journal of the Society for Prevention Research</i> , 10(4), 298–312. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3735174/ |
| Additional Resources | None |

| The Use Only As Directed Campaign | |
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| Contacts | <p>Name: Erin M. Johnson, MPH</p> <p>Address: P.O. Box 142104, Salt Lake City, UT 84114, USA</p> <p>Phone: (801) 538-6542</p> <p>Fax: (801) 538-9923</p> <p>Email: erjohnso@utah.gov</p> |
| Description | Use Only As Directed was a statewide media campaign in Utah that sought to prevent prescription drug misuse among adults 25-54. The campaign was part of the Utah Prescription Pain Medication Program, an educational program designed to improve prescribing practices, prevent prescription drug misuse, and reduce the harm caused by prescription drug misuse, with a focus on prescription opioids. Developed by the Utah Department of Health in collaboration with other state agencies, the program included statewide media targeting the public, educational sessions for prescribers (see <i>Provider Detailing in Utah</i>) and the development of new prescriber guidelines. |
| Populations | Patients (ages 25-54) |

The Use Only As Directed Campaign

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| Settings | Utah media outlets and channels |
| Evaluation Design | Retrospective, non-experimental design using public survey data and statewide administrative data on overdose death rates. Public surveys were conducted in May 2009, after a year-long statewide media campaign that began in May 2008. Annual state epidemiological surveillance data was analyzed for 2007, 2008, and 2009. |
| Outcomes | <p>Forty-eight percent of those surveyed recalled the Utah Prescription Pain Medication media campaign's TV commercial. Of those respondents who recalled any of the campaign's media messages:</p> <ul style="list-style-type: none"> • About half (52%) said they were less likely to share their prescription drugs than before seeing the campaign. • About half (51%) said they were less likely to use prescription drugs not prescribed to them. • 29 percent said their understanding of the potential dangers of prescription drugs had changed. • 18 percent said they disposed of leftover prescription drugs as a result of the media campaign. However, there was not a significant number of respondents who said that their knowledge had changed regarding the community burden that misuse causes or of the appropriate way to dispose of leftover prescription drugs. <p>During campaign implementation, the number of unintentional prescription-drug-involved overdose deaths statewide decreased 14 percent from 2007 to 2008. The number of such deaths increased slightly (259 to 265) in 2009.</p> |
| Studies | Johnson, E. M., Porucznik, C. A., Anderson, J. W., & Rolfs, R. T. (2011). State-level strategies for reducing prescription drug overdose deaths: Utah's prescription safety program. <i>Pain Medicine</i> , 12(Suppl 2), S66–S72. doi:10.1111/j.1526-4637.2011.01126.x |
| Additional Resources | <p>Utah Department of Health. (n.d.). <i>Prescription Pain Medication Management & Education Program</i>. Retrieved from http://www.health.utah.gov/prescription/</p> <p>Use Only as Directed. (2017) Use Only As Directed website. Retrieved from http://useonlyasdirected.org/</p> |

Web-based, Mother-Daughter Substance Use Prevention Program

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| Contacts | <p>Name: Lin Fang</p> <p>Address: 246 Bloor Street W., Toronto, ON M5S 1A1, Canada</p> <p>Phone: (416) 946-5084</p> <p>Email: lin.fang@utoronto.ca</p> |
| Description | <p>This family-oriented program targeted Asian American girls ages 10 to 14 and their mothers. Its overall goal was to prevent substance misuse among girls by improving mother-daughter communication. The program was delivered in a web-based format over nine sessions, and consisted of voice-over narration, animated graphics, and games. It assisted mothers with instituting rules concerning substance use, conflict management, and maternal monitoring, and assisted daughters with managing stress and interpersonal conflict and enhancing refusal skills, self-efficacy, and social supports.</p> |
| Populations | Asian American girls ages 10 to 14 and their mothers |
| Settings | Online via personal computers |
| Evaluation Design | <p>Prospective, experimental design with 108 mother-daughter dyads randomly assigned to intervention or control groups; and completing assessments at baseline and after completion of all program sessions (average length of time between baseline and post-intervention survey completion was 6.25 months). Control dyads completed posttest surveys approximately 1 year after pretest.</p> |
| Outcomes | Compared to controls, participants in the internet-based campaign reported reduced rates of alcohol, marijuana, and illicit prescription drug use. |
| Studies | <p>Fang, L., Schinke, S. P., & Cole, K. C. (2010). Preventing substance use among early Asian-American adolescent girls: Initial evaluation of a web-based, mother-daughter program. <i>Journal of Adolescent Health, 47</i>(5), 529–532. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2964276/pdf/nihms191591.pdf</p> |
| Additional Resources | <p>Office of National Drug Control Policy. (2011). <i>Epidemic: Responding to America's prescription drug abuse crisis</i>. Retrieved from https://www.ncjrs.gov/pdffiles1/ondcp/rx_abuse_plan.pdf</p> |

TRACKING AND MONITORING

Tracking and monitoring programs and practices aim to reduce access and availability of prescription opioids to those who would misuse them. They help law enforcement and regulatory agencies detect “doctor shoppers” and identify prescribers who have unusual prescribing practices.

| Mandatory Use of Prescription Drug Monitoring Programs | |
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| Contacts | <p>Name: Prescription Drug Monitoring Program Training and Technical Assistance Center</p> <p>Phone: (781) 609-7741</p> <p>Fax: (888) 705-8053</p> <p>Contact Form: http://www.pdmpassist.org/contact</p> |
| Description | <p>Mandatory use of prescription drug monitoring programs (PDMPs) is a legal mandate by the state for prescribers (and, in some states, dispensers) to register with and/or use the state PDMP when prescribing (or dispensing) a Schedule II drug or other controlled drug. A PDMP is a statewide electronic database that collects designated data on substances dispensed in the state. The PDMP is housed by a specified statewide regulatory, administrative, or law enforcement agency, which distributes data to professionals who are authorized under state law to receive this information.⁴ The purpose of the mandate is to limit over-prescription of opioids and other controlled substances by increasing prescribers' and dispensers' use of PDMPs.</p> |
| Populations | Prescribers and dispensers of and people who misuse controlled substances |
| Settings | Medical facilities |
| Evaluation Design | <p>Retrospective, non-experimental study examining outcomes associated with adoption of PDMP prescriber mandates in four states: Kentucky, Tennessee, New York, and Ohio. For each of the four states, PDMP records, hospital and health department data, state legislation, provider surveys, and other sources were reviewed to assess changes in outcomes pertaining to PDMP utilization and prescription drug misuse before and after the adoption of the PDMP mandate. Outcomes were generally from data between 2011 and 2015.</p> |
| Outcomes | <p>Mandatory use of PDMPs has been linked to:</p> <ul style="list-style-type: none"> • Lower incidence of doctor shopping in Kentucky, Tennessee, New York, and Ohio. |

⁴ National Alliance for Model State Drug Laws. (2009, August). *Prescription drug monitoring programs: A brief overview*. Retrieved from <http://www.namsdl.org/library/1BB65CEB-1C23-D4F9-74870D15AD6B0D52/>

Mandatory Use of Prescription Drug Monitoring Programs

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| Outcomes (cont.) | <ul style="list-style-type: none"> Increased use of the PDMP in Kentucky, New York, Tennessee, and Ohio. Fewer individuals with an opioid prescription and fewer prescriptions for all opioids in Tennessee and New York. A reduction in the overall dispensing of controlled substances in Kentucky. An increase in buprenorphine prescriptions in Kentucky and New York. Declines in hospitalizations, overdoses, and deaths due to prescription opioids in Kentucky. <p><i>Note: Kentucky and Ohio implemented other actions to address nonmedical use of prescription drugs in addition to mandating the use of PDMPs, which may have contributed to these outcomes.</i></p> |
| Studies | <p>PDMP Center of Excellence. (2016). <i>PDMP prescriber use mandates: Characteristics, current status, and outcomes in selected states</i>. Retrieved from http://www.pdmpassist.org/pdf/COE_documents/Add_to_TTAC/COE%20briefing%20on%20mandates%203rd%20revision.pdf</p> |
| Additional Resources | <p>Haffajee, R. L., Jena, A. B., & Weiner, S. G. (2015, March 3). Mandatory use of prescription drug monitoring programs. <i>Journal of the American Medical Association</i>, 313(9), 891–892. Retrieved from https://www.scmmedical.org/uploads/files/7.pdf</p> <p>National Alliance for Model State Drug Laws. (2013, September 25). <i>Emerging PMP issues: Legal analysis</i>. Presentation at the Harold Rogers PDMP National Meeting, Washington, D.C. Retrieved from http://www.pdmpassist.org/pdf/PPTs/National2013/26-9-A%20Green.pdf</p> <p>National Alliance for Model State Drug Laws. (2009, August). <i>Prescription Drug Monitoring Programs: A Brief Overview</i>. Retrieved from http://www.namsdl.org/library/1BB65CEB-1C23-D4F9-74870D15AD6B0D52/</p> <p>National Conference of Insurance Legislators. (2013). <i>Best practices to address opioid abuse, misuse & diversion</i>. Retrieved from http://www.namsdl.org/library/04A5C244-07CA-6E4E-90E19406642FE80B/</p> |

Model Pain Clinic Regulations

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| Contacts | <p>Name: Hal Johnson</p> <p>Phone: (850) 566-0931</p> |
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| Model Pain Clinic Regulations | |
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| Contacts (cont.) | Email: hal@hjc-epi.com |
| Description | Model pain clinic regulations are designed to reduce the over-prescription and/or inappropriate prescription of controlled substances by preventing facilities from prescribing controlled substances indiscriminately or inappropriately. |
| Populations | Pain clinic directors, providers, patients |
| Settings | Florida prescribing dispensers and pain clinics |
| Evaluation Design | Retrospective, interrupted time series using Florida medical examiner records of drug overdose deaths and statewide estimates of prescription counts from the IMS Health National Prescription Audit, which provides state level estimates of numbers of prescriptions based on a national sample of approximately 57,000 pharmacies. Medical examiner records were gathered from the period of 2003 to 2012 and prescription counts were estimated from 2008 to 2012. |
| Outcomes | In Florida, when combined with other state initiatives and enforcement actions, model pain clinic regulations were associated with reductions in: <ul style="list-style-type: none"> • Number of drug prescriptions. • Number of prescribers dispensing a high volume of oxycodone prescriptions. • Overdose deaths. • Drug diversion rates. |
| Studies | Johnson, H., Paulozzi, L., Porucznik, C., Mack, K., & Herter, B. (2014). Decline in drug overdose deaths after state policy changes—Florida, 2010–2012. <i>Morbidity and Mortality Weekly Report</i> , 63(26), 569–574. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6326a3.htm |
| Additional Resources | National Alliance for Model State Drug Laws & National Safety Council. (2014). <i>Prescription drug abuse, addiction and diversion: Overview of state legislative and policy initiatives. Part 2: State regulation of pain clinics and legislative trends relative to regulating pain clinics</i> . Retrieved from http://www.namsdl.org/library/8867EBE1-19B9-E1C5-316C1FDCB35571A5/ National Conference of Insurance Legislators. (2013). <i>Best practices to address opioid abuse, misuse & diversion</i> . Retrieved from http://www.namsdl.org/library/04A5C244-07CA-6E4E-90E19406642FE80B/ |

Model Pain Clinic Regulations

Additional Resources (cont.)

Office of National Drug Control Policy. (2011). *Epidemic: Responding to America's prescription drug abuse crisis*. Retrieved from https://www.ncjrs.gov/pdffiles1/ondcp/rx_abuse_plan.pdf

U.S. Department of Health and Human Services, Behavioral Health Coordinating Committee. (2013). *Addressing prescription drug abuse in the United States: Current activities and future opportunities*. Retrieved from https://www.cdc.gov/drugoverdose/pdf/hhs_prescription_drug_abuse_report_09.2013.pdf

Prescription Drug Monitoring Programs

Contacts

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Prescription Drug Monitoring Programs

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| Contacts (cont.) | <p>Name: Prescription Drug Monitoring Program Training and Technical Assistance Center (PDMP Center of Excellence, 2011)</p> <p>Phone: (781) 609-7741</p> <p>Contact Form: http://www.pdmpassist.org/contact</p> <hr/> <p>Name: Richard Marc Reisman, MD, M.P.H., Medical Director (Reisman, Shenoy, Atherly, & Flowers, 2009)</p> <p>Address: Gwinnett Hospital System Pain Management Center, 575 Professional Drive Suite 150, Lawrenceville, GA 30045</p> <p>Phone: (678) 312-5209, (678) 312-5200</p> <p>Email: reismanfam@mindspring.com</p> <hr/> <p>Name: Dr. Ronald Simeone (Simeone & Holland, 2006)</p> <p>Address: Simeone Associates Inc., 220 Lancaster Street, Albany, New York, 12210</p> <p>Email: ron@simeoneassociates.com</p> <hr/> <p>Name: Stephen B. Soumerai, Sc.D. (Ross-Degnan et al., 2004)</p> <p>Address: Department of Ambulatory Care and Prevention, Harvard Medical School and Harvard Pilgrim Health Care, 133 Brookline Avenue, 6th Floor, Boston, MA 02215</p> <p>Email: ssoumerai@hms.harvard.edu</p> <hr/> <p>Name: Traci C. Green, MSc, PhD (Green et al., 2012)</p> <p>Address: 593 Eddy St., 111 Plain St. Building, Rm. 111, Providence, RI 02903, USA</p> <p>Phone: (401) 444-3845</p> <p>Email: traci.c.green@gmail.com</p> |
| Description | <p>A prescription drug monitoring program (PDMP) is a statewide electronic database that tracks the prescribing and dispensing of opioid analgesics and other controlled substances in the state. The PDMP is housed by a specified statewide regulatory, administrative, or law enforcement agency, which distributes data to individuals who are authorized under state law to receive it, such as prescribers, pharmacists, law enforcement officers, and licensing officials (National Alliance for Model State Drug Laws, 2009). The purpose of PDMPs is to decrease access to and the availability of opioids and other controlled substances by limiting their over-prescription.</p> |
| Populations | <p>Prescribers and dispensers of, and people who misuse, controlled substances</p> |

Prescription Drug Monitoring Programs

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| Settings | Nationwide |
| Evaluation Design | <p>Ohio: Prospective, non-experimental design with ER physicians treating 199 individuals presenting to the University of Toledo Medical Center ER during June–July 2008 with painful conditions and no acute injury. Researchers questioned ER physicians after they conducted an initial physical examination of the patient, then they presented the patients’ PDMP records to the physicians and questioned physicians again, noting any change in answers or prescriptions issued (Baehren et al, 2010).</p> <p>British Columbia: Retrospective, interrupted time series analysis using prescription records from the province of British Columbia between January 1993 and December 1997 of 134,687 patients on social assistance and 350,196 patients age 65 or older who were prescribed opioids or benzodiazepines. Compared outcome of interest among records from the 30 months prior to the implementation of a centralized prescription network in July 1995 to records from the 30 months post implementation. (Dormuth et al, 2012).</p> <p>Connecticut and Rhode Island: Non-experimental cross-sectional study design with 998 prescribers from Connecticut and 375 prescribers from Rhode Island (or 1,385 prescribers total). Participants completed an online, anonymous survey once between March and August 2011 (Green et al, 2012).</p> <p>Nevada: Non-experimental retrospective observational study evaluating the impact of 2,511 unsolicited prescription history reports delivered to providers of patients engaging in suspected doctor shopping from 1997 through 2002 (PDMP Center of Excellence, 2011).</p> <p>France: Retrospective, time series design of prescription records from 21,911 patients receiving reimbursement from the French General Health Fund (GHF) within the French region of the Bouches-du-Rhone. Variables were extracted and outcomes were assessed from GHF records derived from eight time periods, which included the first and second semesters from the years 2000, 2002, 2004, and 2005. (Pradel et al., 2009)</p> <p>United States: Retrospective quasi-experimental design comparing quarterly state-level data collected via the Researched Abuse, Diversion and Addiction-Related Surveillance (RADARS) System from 2003 from 2009. The study compared data from states with PDMPs to states without PDMPs, including only those 44 states that report RADARS system data. At the time of the study, 34 states had PDMPs and 16 states and the District of Columbia did not. (Reifler et al, 2012).</p> <p>United States: Retrospective, quasi-experimental design comparing state-level data from 1997 to 2003 on manufacturer shipments of prescription drugs and levels of inpatient admissions for prescription drug abuse. States were assigned to either the control group (no operational PDMP) or the intervention group (operational PDMP).</p> |

Prescription Drug Monitoring Programs

Evaluation Design (cont.)

At the time of the study, 14 states had PDMPs and 36 states and the District of Columbia did not. (Reisman, Shenoy, Atherly, & Flowers, 2009).

New York: Interrupted time series with comparison group design assessing 125,837 New York and 139,405 New Jersey patients continuously enrolled in Medicaid from January 1988 through December 1990. All beneficiaries were aged 19 or older with diagnoses of various specified neurological and psychological disorders. Compared monthly rates of benzodiazepine and other psychoactive medication use 12 months before (January through December 1988) and 24 months after (January 1989 through December 1990) the implementation of the New York benzodiazepine prescription triplicate program (TPP) in January 1989 between the New York cohort (intervention) and New Jersey cohort (control). (Ross-Degnan et al., 2004).

United States: Non-experimental, retrospective study using a series of multilevel models to estimate the relationships among the presence of a PDMP, controlled substance supply, and abuse. Utilized various sources of data, including 1) records from the National Alliance for Model State Drug Laws regarding various PDMP parameters by state, 2) controlled substance retail records from the Automation of Reports and Consolidated System, and 3) records of patients admitted to state-licensed drug treatment programs from the Treatment Episode Data Set. Data collected from 1997 to 2003 (Simeone & Holland, 2006).

New York: Interrupted time series with comparison group design assessing 125,837 New York and 139,405 New Jersey patients continuously enrolled in Medicaid from January 1988 through December 1990. All beneficiaries were aged 19 or older with diagnoses of various specified neurological and psychological disorders. Evaluated monthly rates of benzodiazepine and other psychoactive medication use 12 months before (January through December 1988) and 24 months after (January 1989 through December 1990) the implementation of the New York benzodiazepine prescription triplicate program (TPP) in January 1989. Compared medication rates between New York (intervention) and New Jersey (control) beneficiaries overall. (Simoni-Wastila et al., 2004).

United States: Non-experimental, retrospective study comparing opioid prescribing patterns and evidence of substance abuse in states with versus without PMPs. Utilized data from the Automation of Reports and Consolidated Orders System (ARCOS) to determine prescribing patterns, as well as data from the Treatment Episode Data Set (TEDS) database and the National Survey on Drug Use and Health (NSDUH) to determine outcomes related to prescription opioid abuse (Twillman, 2006).

Kentucky, Nevada, and Utah: Non-experimental, cross-sectional study summarizing various aspects of fifteen state Prescription Drug Monitoring Programs (PDMPs) and providing a more in-depth analysis of the PDMPs in Kentucky, Nevada, and Utah.

Prescription Drug Monitoring Programs

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| <p>Evaluation Design (cont.)</p> | <p>Utilized interviews from a variety of PDMP administrators and stakeholders, including officials from various national- and state-level agencies and associations, as well as representatives from Purdue Pharma L.P., the manufacturer of OxyContin. Also reviewed pertinent documents from the Drug Enforcement Agency, the National Alliance for Model State Drug Laws, and other organizations. Performed data collection from October 2001 through April 2002 (U.S. General Accounting Office, 2002).</p> |
| <p>Outcomes</p> | <p>Ohio: Physician review of PDMP data is associated with changes in prescribing behavior (Baehren et al, 2010). In 41% of cases reviewed, physicians decided: against prescribing a controlled substance or to reduce the prescription size or dosage 61 percent of the time; and to increase the prescription size or dosage 39 percent of the time.</p> <p>British Columbia: PDMPs are associated with a reduction in inappropriately filled prescriptions for opioids and benzodiazepines (Dormuth et al, 2012).</p> <p>Connecticut and Rhode Island: PDMPs are associated with increases in the number of doctors who respond with clinical interventions (such as screening for drug abuse, revisiting the pain/treatment agreement, or referring the patient to substance abuse treatment) rather than legal or no interventions when confronted with possible doctor shopping or suspicious behavior (Green et al, 2012).</p> <p>Nevada: PDMPs are associated with a reduction in indicators of doctor shopping (PDMP Center of Excellence, 2011).</p> <p>France: PDMPs are associated with a reduction in indicators of doctor shopping (Pradel et al, 2009).</p> <p>United States: Compared to states without PDMPs, states with PDMPs experienced lower increases in the number of intentional exposures to NMUPDs and treatment admissions (Reifler et al, 2012).</p> <p>United States: Compared to states without PDMPs, states with PDMPs experienced reductions in oxycodone shipments and prescription opioid treatment admissions per year (Reisman et al, 2009).</p> <p>New York: TPPs (a precursor to PDMPs) are associated with reductions in benzodiazepine use, especially among young women; persons living in zip codes that are urban, comprise predominantly black populations, or have a high density of poor households (Ross-Degnan et al, 2004).</p> <p>United States: Compared to states without PDMPs, states with PDMPs experienced reductions in the supply and abuse of Schedule II opioids, with proactive programs having a larger impact than reactive programs (Simeone & Holland, 2006). The greatest reductions in per capita supply of prescription pain relievers and stimulants occurred in states with a proactive PDMP.</p> |

Prescription Drug Monitoring Programs

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| <p>Outcomes (cont.)</p> | <p>New York: TPPs (a precursor to PDMPs) are associated with reductions in benzodiazepine use, especially among those with a seizure disorder (Simoni-Wastila et al, 2004).</p> <p>United States: Compared to states without PDMPs, states with PDMPs experienced decreased retail distribution of Schedule II opioid analgesics but increased retail distribution of Schedule III opioid analgesics (Twillman, 2006).</p> <p>United States: PDMPs are associated with a reduction in the time spent by law enforcement and regulatory investigators on suspected drug diversion cases (U.S. General Accounting Office, 2002).</p> |
| <p>Studies</p> | <p>Baehren, D. F., Marco, C. A., Droz, D. E., Sinha, S., Callan, M., & Akpunonu, P. (2010). A statewide prescription monitoring program affects emergency department prescribing behaviors. <i>Annals of Emergency Medicine</i>, 56(1), 19–23. Retrieved from http://www.annemergmed.com/article/S0196-0644(09)01812-5/fulltext</p> <p>Dormuth, C. R., Miller, T. A., Huang, A., Mamdani, M. M., & Juurlink, D. N. (2012). Effect of a centralized prescription network on inappropriate prescriptions for opioid analgesics and benzodiazepines. <i>Canadian Medical Association Journal</i>, 184(16), E852–E856. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3494359/</p> <p>Green, T. C., Mann, M. R., Bowman, S. E., Zaller, N., Soto, X., Gadea, J., . . . Friedmann, P. D. (2012). How does use of a prescription monitoring program change medical practice? <i>Pain Medicine</i>, 13(10), 1314–1323. Retrieved from https://academic.oup.com/painmedicine/article/13/10/1314/1933322</p> <p>PDMP Center of Excellence. (2011, October). <i>Notes from the field: Nevada's proactive PMP: The impact of unsolicited reports</i>. Retrieved from http://www.pdmpassist.org/pdf/COE_documents/Add_to_TTAC/nevada_nf_10_26_11.pdf</p> <p>Pradel, V., Frauger, E., Thirion, X., Ronfle, E., Lapierre, V., Masut, A., . . . Micallef, J. (2009). Impact of a prescription monitoring program on doctor-shopping for high dosage buprenorphine. <i>Pharmacoepidemiology and Drug Safety</i>, 18(1), 36–43.</p> <p>Reifler, L. M., Droz, D., Bailey, J. E., Schnoll, S. H., Fant, R., Dart, R. C., & Bartelson, B. B. (2012). Do prescription monitoring programs impact state trends in opioid abuse/misuse? <i>Pain Medicine</i>, 13(3), 434–442. doi:10.1111/j.1526-4637.2012.01327.x</p> <p>Reisman, R. M., Shenoy, P. J., Atherly, A. J., & Flowers, C. R. (2009). Prescription opioid usage and abuse relationships: An evaluation of State Prescription Drug Monitoring Program efficacy. <i>Substance Abuse: Research and Treatment</i>, 3, 41–51.</p> |

Prescription Drug Monitoring Programs

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| <p>Studies (cont.)</p> | <p>Ross-Degnan, D., Simoni-Wastila, L., Brown, J. S., Gao, X., Mah, C., Cosler, L. E., . . . Soumerai, S. B. (2004). A controlled study of the effects of state surveillance on indicators of problematic and non-problematic benzodiazepine use in a Medicaid population. <i>International Journal of Psychiatry in Medicine</i>, 34(2), 103–123.</p> <p>Simeone, R., & Holland, L. (2006). <i>An evaluation of prescription drug monitoring programs</i>. Washington, DC: U.S. Department of Justice, Office of Justice Programs. Retrieved from http://www.simeoneassociates.com/simeone3.pdf</p> <p>Simoni-Wastila, L., Ross-Degnan, D., Mah, C., Gao, X., Brown, J., Cosler, L. E., . . . Soumerai, S. B. (2004). A retrospective data analysis of the impact of the New York triplicate prescription program on benzodiazepine use in Medicaid patients with chronic psychiatric and neurologic disorders. <i>Clinical Therapeutics</i>, 26(2), 322–336.</p> <p>Twillman, R. (2006). Impact of prescription monitoring programs on prescription patterns and indicators of opioid abuse. <i>Journal of Pain</i>, 7(4S), S6.</p> <p>U.S. General Accounting Office. (2002). <i>Prescription drugs: State monitoring programs provide useful tool to reduce diversion</i> (Report No. GAO-02-634). Retrieved from http://www.gao.gov/new.items/d02634.pdf</p> |
| <p>Additional Resources</p> | <p>Centers for Disease Control and Prevention. (n.d.). <i>Prescription drug monitoring programs (PDMPs)</i>. Retrieved from https://www.cdc.gov/drugoverdose/pdmp/</p> <p>Clark, T., Eadie, J., Kreiner, P., & Strickler, G. (2012). <i>Prescription drug monitoring programs: An assessment of the evidence for best practices</i>. Retrieved from http://www.pewtrusts.org/~media/assets/0001/pdmp_update_1312013.pdf</p> <p>Finklea, K., Sacco, L. N., & Bagalman, E. (2013). <i>Prescription drug monitoring programs</i>. Retrieved from http://www.fas.org/sgp/crs/misc/R42593.pdf</p> <p>Fleming, M. L., Chandwani, H., Barner, J. C., Weber, S. N., & Okoro, T. T. (2013). Prescribers and pharmacists requests for Prescription Monitoring Program (PMP) data: Does PMP structure matter? <i>Journal of Pain and Palliative Care Pharmacotherapy</i>, 27(2), 136–142. http://dx.doi.org/10.3109/15360288.2013.788598</p> <p>Haegerich, T. M., Paulozzi, L. J., Manns, B. J., & Jones, C. M. (2014). What we know, and don't know, about the impact of state policy and systems-level interventions on prescription drug overdose. <i>Drug Alcohol Dependence</i>, 145, 34–47. https://doi.org/10.1016/j.drugalcdep.2014.10.001</p> |

Prescription Drug Monitoring Programs

Additional Resources (cont.)

- Haffajee, R. L., Jena, A. B., & Weiner, S. G. (2015). Mandatory use of prescription drug monitoring programs. *Journal of the American Medical Association*, 313(9), 891–892. doi:10.1001/jama.2014.18514
- National Alliance for Model State Drug Laws. (2009, August). *Prescription Drug Monitoring Programs: A Brief Overview*. Retrieved from <http://www.namsdl.org/library/1BB65CEB-1C23-D4F9-74870D15AD6B0D52/>
- National Alliance for Model State Drug Laws. (2015). *Annual review of prescription monitoring programs*. Retrieved from <http://www.namsdl.org/library/3449DDCF-BB94-288B-049EB9A92BAD73DF/>
- National Conference of Insurance Legislators. (2013). *Best practices to address opioid abuse, misuse & diversion*. Retrieved from <http://www.namsdl.org/library/04A5C244-07CA-6E4E-90E19406642FE80B/>
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- Paulozzi, L. J., Kilbourne, E. M., & Desai, H. A. (2011). Prescription drug monitoring programs and death rates from drug overdose. *Pain Medicine*, 12(5), 747–754. <https://doi.org/10.1111/j.1526-4637.2011.01062.x>
- Paulozzi, L. J., & Stier, D. D. (2010). Prescription drug laws, drug overdoses, and drug sales in New York and Pennsylvania. *Journal of Public Health Policy*, 31(4), 422–432. <https://doi.org/10.1057/jphp.2010.27>
- Perrone, J., & Nelson, L. S. (2012). Medication reconciliation for controlled substances—An “ideal” prescription-drug monitoring program. *New England Journal of Medicine*, 366(25), 2341–2343. Retrieved from <http://www.nejm.org/doi/full/10.1056/nejmp1204493#t=article>
- PDMP Center of Excellence. (2014). *Guidance on PDMP best practices: Options for unsolicited reporting*. Retrieved from <https://www.ncjrs.gov/pdffiles1/bja/247135.pdf>
- State of Ohio Board of Pharmacy. (n.d.). *Ohio automated Rx reporting system*. Retrieved from <https://www.ohiopmp.gov/Default.aspx>
- U.S. Department of Health and Human Services, Behavioral Health Coordinating Committee. (2013). *Addressing prescription drug abuse in the United States: Current activities and future opportunities*. Retrieved from https://www.cdc.gov/drugoverdose/pdf/hhs_prescription_drug_abuse_report_09.2013.pdf
- U.S. Department of Justice, Bureau of Justice Assistance. (n.d.). *Comprehensive Opioid Abuse Program (COAP)*. Retrieved from https://www.bja.gov/ProgramDetails.aspx?Program_ID=72

RETAIL ACCESS RESTRICTIONS

Retail access restrictions involve policies and regulations that limit access to commonly misused prescription opioids. These restrictions can be instituted by government entities, but also health insurance companies.

| Delisting OxyContin (Canada) | |
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| Contacts | <p>Name: Benedikt Fischer</p> <p>Email: bfischer@sfu.ca</p> |
| Description | Delisting OxyContin (or any prescription drug) is the process of removing it from a public or private insurance plan's drug formulary, rendering it no longer covered for enrollees. Its purpose is to reduce the clinical use and availability of OxyContin in Canada. |
| Populations | Prescribers and dispensers of and people who may misuse OxyContin |
| Settings | Ontario, Canada |
| Evaluation Design | <p>Non-experimental retrospective repeated measures cross-sectional study with 4,023 adults age 18 and older. Participants were randomly selected annual samples representative of the general population of adults living in Ontario, Canada. Outcomes were assessed by a single survey, administered to 2,024 adults in 2010 and 1,999 adults in 2011. (Fischer et al, 2013).</p> <p>Retrospective, interrupted time series design using electronic prescription records from a representative sample of 5,700 Canadian retail pharmacies. Indicators of prescription opioid dispensing by province and in Canada total were assessed using monthly prescription data converted into annual dispensing rates. Annual rates of change in opioid dispensing were calculated for 2005 to 2011, and for 2011 to 2012. Ratios of dispensing "weak" vs. "strong" prescription opioids were also calculated for the years 2005 and 2012. (Fischer, Jones, & Rehm, 2014).</p> |
| Outcomes | <p>Delisting OxyContin was linked to an ongoing reduction in oxycodone use in Ontario (which began in 2011), although causal influence has not been empirically established (Fischer et al, 2013).</p> <p>Delisting OxyContin was associated with a reduction in oxycodone dispensing in Ontario, although several jurisdictions in Ontario saw no effect. Reductions also occurred in Alberta, which did not delist OxyContin (Fischer et al, 2014).</p> |

Delisting OxyContin (Canada)

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| Studies | <p>Fischer, B., Ialomiteanu, A., Kurdyak, P., Mann, R. E., & Rehm, J. (2013). Reductions in nonmedical prescription opioid use among adults in Ontario, Canada: Are recent policy interventions working? <i>Substance Abuse Treatment, Prevention and Policy</i>, 8, 7. Retrieved from https://substanceabusepolicy.biomedcentral.com/articles/10.1186/1747-597X-8-7</p> <p>Fischer, B., Jones, W., & Rehm, J. (2014). Trends and changes in prescription opioid analgesic dispensing in Canada 2005–2012: An update with a focus on recent interventions. <i>BMC Health Services Research</i>, 14, 90. Retrieved from https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-14-90</p> |
| Additional Resources | <p>Fischer, B., & Keates, A. (2012). “Opioid drought,” Canadian-style? Potential implications of the “natural experiment” of delisting OxyContin in Canada. <i>International Journal of Drug Policy</i>, 23(6), 495–497. Retrieved from http://www.ijdp.org/article/S0955-3959(12)00116-8/pdf</p> <p>Ontario Ministry of Health and Long-Term Care. (2012). <i>The way forward: Stewardship for prescription narcotics in Ontario</i>. Report to the Minister of Health and Long-Term Care from the Expert Working Group on Narcotic Addiction. Catalogue No. 015919 75. Queen’s Printer for Ontario. Retrieved from http://www.health.gov.on.ca/en/public/publications/mental/docs/way_forward_2012.pdf</p> |

Doctor Shopping Laws

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| Contacts | <p>Name: Colin R. Dormuth (Dormuth et al., 2012) Email: colin.dormuth@ti.ubc.ca</p> <hr/> <p>Name: Dennis Ross-Degnan, ScD (Pearson et al., 2006) Address: Department of Ambulatory Care and Prevention, Harvard Medical School and Harvard Pilgrim Health Care, 133 Brookline Ave, Sixth Floor, Boston, MA 02215 Email: Dennis_Ross-Degnan@hms.harvard.edu</p> <hr/> <p>Name: J. Micallef (Pradel et al., 2009) Address: CEIP centre associe´, CHU Timone, 254 rue St Pierre, 13385 Marseille Cedex 05, France Email: joelle.micallef@ap-hm.fr</p> |
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| Doctor Shopping Laws | |
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| Description | Doctor-shopping laws target patients who obtain multiple prescriptions for controlled substances from multiple prescribers or pharmacies without disclosing their other prescriptions. These laws are designed to deter patients from obtaining multiple prescriptions for controlled substances for abusive or diversionary purposes. |
| Populations | Prescribers, pharmacies, patients |
| Settings | British Columbia, New York, and France |
| Evaluation Design | <p>Retrospective, interrupted time series analysis using prescription records from the province of British Columbia of 134,687 patients on social assistance and 350,196 patients age 65 or older who were prescribed opioids or benzodiazepines between January 1993 and December 1997. Compared outcome of interest among records from the 30 months prior to the implementation of a centralized prescription network in July 1995 to records from the 30 months post implementation. (Dormuth et al, 2012).</p> <p>Retrospective quasi-experimental design using New York Medicaid administrative data comparing outcomes of interest 12 months prior to the intervention in 1989 to 24 months post-intervention, with follow-up data seven years post-intervention. All 124,867 individuals continuously enrolled in Medicaid for the length of the study range were included in the sample population. (Pearson et al, 2006).</p> <p>Retrospective time series study of prescription records from 21,911 patients receiving reimbursement from the French General Health Fund (GHF) within the French region of the Bouches-du-Rhone. Variables were extracted and outcomes were assessed from GHF records derived from eight time periods, which included the first and second semesters from the years 2000, 2002, 2004, and 2005. (Pradel et al., 2009)</p> |
| Outcomes | <p>In British Columbia, when implemented in conjunction with PDMPs, doctor-shopping laws have been associated with reductions in “inappropriate prescriptions” for opioids and benzodiazepines. This study identified “inappropriate prescriptions” as those for 30 or more doses issued and filled by a different prescriber and pharmacy within seven days of an earlier prescription for the same medication. (Dormuth et al, 2012).</p> <p>In New York, when implemented in conjunction with PDMPs, doctor-shopping laws have been associated with reductions in pharmacy hopping and nonmedically-necessary prescriptions of benzodiazepines (Pearson et al, 2006).</p> <p>In France, when implemented in conjunction with PDMPs, doctor-shopping laws have been associated with reductions in prescription drug diversion indicators, such as the number of identified instances of doctor-shopping and the percentage of certain types of prescriptions obtained through doctor-shopping (Pradel et al, 2009).</p> |

| Doctor Shopping Laws | |
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| Studies | <p>Dormuth, C. R., Miller, T. A., Huang, A., Mamdani, M. M., & Juurlink, D. N. (2012). Effect of a centralized prescription network on inappropriate prescriptions for opioid analgesics and benzodiazepines. <i>Canadian Medical Association Journal</i>, 184(16), E852–E856. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3494359/</p> <p>Pearson, S., Soumerai, S., Mah, C., Zhang, F., Simoni-Wastila, L., Salzman, C., . . . Ross-Degnan, D. (2006). Racial disparities in access after regulatory surveillance of benzodiazepines. <i>Archives of Internal Medicine</i>, 166(5), 572–579. Retrieved from http://jamanetwork.com/journals/jamainternalmedicine/fullarticle/409923</p> <p>Pradel, V., Frauger, E., Thirion, X., Ronfle, E., Lapierre, V., Masut, A., . . . Micallef, J. (2009). Impact of a prescription monitoring program on doctor-shopping for high dosage buprenorphine. <i>Pharmacoepidemiology and Drug Safety</i>, 18(1), 36–43.</p> |
| Additional Resources | <p>Centers for Disease Control and Prevention. (n.d.). <i>Doctor shopping laws</i>. Retrieved from http://www.cdc.gov/phlp/docs/menu-shoppinglaws.pdf</p> <p>National Alliance for Model State Drug Laws. (2010). <i>State doctor shopping & prescription fraud statutes</i>. Retrieved from http://www.namsdl.org/library/169D4DEB-65BE-F4BB-A497350950AD9EC8/</p> <p>Office of National Drug Control Policy. (2011). <i>Epidemic: Responding to America’s prescription drug abuse crisis</i>. Retrieved from https://www.ncjrs.gov/pdffiles1/ondcp/rx_abuse_plan.pdf</p> |

| Patient Review and Restriction Programs | |
|---|---|
| Contacts | <p>Name: Shellie Keast</p> <p>Phone: (405) 271-9039, ext. 47347</p> |
| Description | <p>Patient review and restriction programs (PRRs), also called “lock-in” programs, enable public and private insurers to restrict patients who are suspected of prescription drug abuse or misuse to a single designated provider and/or pharmacy. They are implemented to improve care coordination, reduce diversion of controlled drugs, and reduce expenditures for medically unnecessary care.⁵ They are designed to limit access to commonly misused prescription drugs.</p> |
| Populations | <p>Public and private insurers, patients</p> |

⁵ Roberts, A. W., & Skinner, A. C. (2014). Assessing the present state and potential of Medicaid controlled substance lock-in programs. *Journal of Managed Care and Specialty Pharmacy*, 20(5), 439–446c.

Patient Review and Restriction Programs

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| Settings | Statewide |
| Evaluation Design | <p>Louisiana: Retrospective, interrupted time series comparing Medicaid claims data of 1,490 recipients (227 in the physician-pharmacy lock-in group and 1,263 in the pharmacy-only lock in group) 12 months prior to implementation of the PRR program and 10 months after implementation (Blake, 1999).</p> <p>Hawaii: A retrospective cross-sectional study evaluating computerized utilization records for 270 Medicaid recipients in Hawaii who had been enrolled in the Medicaid lock-in program. These 270 recipients had been identified out of a total of 682 cases found to have potentially abusive Medicaid utilization patterns. Results were based on available data from July 1, 1977 to December 21, 1983 (Chin, 1985).</p> <p>Washington: Non-experimental retrospective study of Medicaid claims among recipients in Washington State to assess the impact of a PRR program, the Patient Review and Coordination (PRC) Program. Evaluated Medicaid claims among various samples of PRC clients for data on outcomes related to prescription drug abuse and inappropriate use of medical care. Samples of PRC clients included 200 of the top PRC clients in May 2008, 1,364 PRC clients who had completed their 2-year restriction in 2007 and 2008, and 518 clients referred for narcotic abuse in 2006. Total cost savings were also evaluated since fiscal year 2006 (Coolen, 2009).</p> <p>United States: Excel-based, micro-simulation model utilizing MarketScan® Medicaid data from 427,411 Medicaid beneficiaries who had received at least one opioid analgesic prescription for non-cancer pain between January 2008 and December 2010. The model also utilized data from prior literature, content experts, and government documents. The model evaluated the associated health outcomes and costs between 5 different scenarios of Medicaid PRR programs with different eligibility criteria. For each scenario, the model summarized outcomes from 10 rounds with 10,000 simulated patients (Melkinow, Yang, Soulsby, Ritley, & Kizer, 2012).</p> <p>Oklahoma: Retrospective, interrupted time series design using outcomes data for 52 patients who had been enrolled in Oklahoma's SoonerCare's PRR program. Average number of narcotic claims per SoonerCare member was assessed from 21 months before point of being enrolled in PRR program to 19 months after. Cost savings were assessed for the first 12 months post enrollment (Mitchell, 2009).</p> <p>Missouri: Retrospective cost effectiveness analysis of Missouri's PRR program based on data from computerized records of Medicaid recipients in total and recipients enrolled in the PRR program in 1976 (Singleton, 1977).</p> |

Patient Review and Restriction Programs

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| Evaluation Design (cont.) | <p>Ohio: Retrospective repeated measures analysis of 600 Ohio Medicaid recipients who had been enrolled in the Primary Alternative Care and Treatment (PACT) PRR program. Evaluated percentage of PACT recipients who had experienced various changes in average monthly correlates of prescription drug use, comparing claims before and after enrollment in PACT. All recipients in this analysis had been enrolled in PACT in 1984 (Tanenbaum & Dyer, 1990).</p> |
| Outcomes | <p>Louisiana: the PRR was associated with reduced polypharmacy among restricted patients, decreased use of Schedule II narcotics, and lower pharmaceutical expenditures (Blake, 1999).</p> <p>Hawaii: PRR restricted 270 patients between 1977 and 1983, with an estimated cost savings of \$900,000 (\$2 million in 2012 dollars). Implementation of the Hawaii PRR was also associated with general decreases in the degree of abuse for all enrollees (Chinn, 1985).</p> <p>Washington: PRR showed reductions in controlled substance use and unnecessary healthcare use while achieving substantial cost savings (Coolen, 2009).</p> <p>United States: Exploratory analyses using a micro-simulation model and Medicaid claims data found that the type of criteria that states apply to PRRs can influence outcomes (Melnikow et al, 2012).</p> <p>Oklahoma: PRR enrollees saw reductions in the use of narcotic medications, the use of multiple pharmacies and physicians, and ER visits. The PRR was associated with an average savings of \$600 per enrollee (Mitchell, 2009).</p> <p>Missouri: PRR implementation was associated with \$1.8 to \$10.9 million in savings per year (approximately \$6.8 to \$41.3 million per year in 2012 dollars) (Singleton, 1997).</p> <p>Ohio: PRR was associated with reductions in monthly dosage for narcotic analgesics, sedatives, and non-narcotic analgesics (Tanenbaum & Dyer, 1990).</p> |
| Studies | <p>Blake, S. G. (1999, March). Drug expenditures: The effect of the Louisiana Medicaid lock-in on prescription drug utilization and expenditures. <i>Drug Benefit Trends</i>, 11(3), 45–55. doi:10.1046/j.1524-4733.1998.1100712.x</p> <p>Chinn, F. J. (1985). Medicaid recipient lock-in program—Hawaii’s experience in six years. <i>Hawaii Medical Journal</i>, 44(1), 9–18.</p> <p>Coolen, P. (2009). <i>Patient review and coordination program for medical assistance clients who need assistance in appropriate use of services</i>. Olympia, WA: Washington State Department of Health and Social Services. Retrieved from: http://www.safestates.org/associations/5805/files/Patient%20Review%20Coordination%20program6.pdf</p> |

Patient Review and Restriction Programs

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| <p>Studies (cont.)</p> | <p>Melnikow, J., Yang, Z., Soulsby, M., Ritley, D., & Kizer, K. (2012, December). <i>Approaches to Drug Overdose Prevention Analytical Tool (ADOPT): Evaluating cost and health impacts of a Medicaid patient review and restriction program</i>. Retrieved from http://www.ucdmc.ucdavis.edu/iphi/Programs/OOD/resources/CDC%20Opoid%20Project_Final%20Report.pdf</p> <p>Mitchell, L. (2009). Pharmacy lock-in program promotes appropriate use of resources. <i>Oklahoma State Medical Association Journal</i>, 102(8), 276.</p> <p>Singleton, T. E. (1997). Missouri's lock-in: Control of recipient misutilization. <i>Journal of Medical Management</i>, 1, 10–17.</p> <p>Tanenbaum, S. J., & Dyer J. L. (1990). The dynamics of prescription drug abuse and its correctives in one state Medicaid program. In B. B. Wilford (Ed.), <i>Balancing the response to prescription drug abuse</i> (pp. 229–238). Chicago, IL: American Medical Association.</p> |
| <p>Additional Resources</p> | <p>Centers for Disease Control and Prevention. (2012, August 27-28). <i>Patient review & restriction programs: Lessons learned from state Medicaid programs</i>. CDC Expert Panel Meeting Report. Retrieved from https://www.cdc.gov/drugoverdose/pdf/pdo_patient_review_meeting-a.pdf</p> <p>Centers for Medicare and Medicaid Services. (2012, January). <i>Drug diversion in the Medicaid program: State strategies for reducing prescription drug diversion in Medicaid</i>. Retrieved from https://www.cms.gov/Medicare-Medicaid-Coordination/Fraud-Prevention/MedicaidIntegrityProgram/downloads/drugdiversion.pdf</p> <p>Kentucky Legislature. (2010). <i>907 KAR 1:677. Medicaid recipient lock-in program</i>. Kentucky Administrative Regulations. Retrieved from http://www.lrc.state.ky.us/kar/907/001/677.htm</p> <p>Legal Information Institute. (2007). <i>Exceptions to certain State plan requirements</i>, 42 CFR § 431.54. (2007). Retrieved from https://www.law.cornell.edu/cfr/text/42/431.54</p> <p>Missouri Department of Social Services. (2012). <i>Rules of Department of Social Services. 13 CSR 70-4.070: Title XIX recipient lock-in program</i>. Retrieved from https://www.sos.mo.gov/cmsimages/adrules/csr/current/13csr/13c70-4.pdf</p> <p>The Pew Charitable Trusts. (2015, January 12). <i>Pew supports patient review and restriction programs in Medicare, part D</i>. Retrieved from http://www.pewtrusts.org/en/research-and-analysis/speeches-and-testimony/2015/01/pew-supports-patient-review-and-restriction-programs-in-medicare-part-d</p> <p>Raofi, S., & Schappert, S. M. (2006). Medication therapy in ambulatory medical care; United States, 2003–2004. <i>Vital and Health Statistics, Series 13</i>(163), 1-40. Retrieved from https://stacks.cdc.gov/view/cdc/6801</p> |

Patient Review and Restriction Programs

Additional Resources (cont.)

Roberts, A. W., & Skinner, A. C. (2014). Assessing the present state and potential of Medicaid controlled substance lock-in programs. *Journal of Managed Care and Specialty Pharmacy*, 20(5), 439–446c.

<https://doi.org/10.18553/jmcp.2014.20.5.439>

State of Texas Administrative Code. (2013, April). *Rule §354.2405: Medicaid recipient utilization review and control*. Retrieved from

[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=1&pt=15&ch=354&rl=2405](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=1&pt=15&ch=354&rl=2405)

State of Virginia. (1998). *12VAC30-130-810. Client medical management program for recipients*. Retrieved from [http://leg1.state.va.us/cgi-](http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+12VAC30-130-810)

[bin/legp504.exe?000+reg+12VAC30-130-810](http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+12VAC30-130-810)

U.S. Department of Health and Human Services, Behavioral Health Coordinating Committee. (2013, September). *Addressing prescription drug abuse in the United States: Current activities and future opportunities*.

Retrieved from

https://www.cdc.gov/drugoverdose/pdf/hhs_prescription_drug_abuse_report_09.2013.pdf

ENFORCEMENT

Enforcement practices are led by law enforcement officers who upload and enforce the policies and laws that limit the supply of prescriptions opioids available for misuse.

| Initiatives to Shut Down “Pill Mills” (Florida) | |
|---|---|
| Contacts | <p>Name: Hal Johnson Phone: (850) 566-0931 Email: hal@hjc-epi.com</p> |
| Description | <p>The initiatives to shut down “pill mills” in Florida began in 2010. “Pill mills” are pain clinics that inappropriately prescribe large quantities of prescription drugs to patients. They can comprise a single physician or a group of physicians, often operating over a large geographic area, who cater to individuals seeking prescription drugs for nonmedical reasons. They accept only anonymous payment methods—primarily cash.⁶</p> |
| Populations | Physicians, pharmacists, law enforcement, and people who may misuse controlled substances |
| Settings | Pain clinics in Florida |
| Evaluation Design | Retrospective, interrupted time series design using Florida medical examiner records of drug overdose deaths and statewide estimates of prescription counts from the IMS Health National Prescription Audit, which provides state-level estimates of numbers of prescriptions based on a national sample of approximately 57,000 pharmacies. Medical examiner records were gathered from the period of 2003 to 2012 and prescription counts were estimated from 2008 to 2012. |
| Outcomes | Florida’s initiatives were associated with a 23.2% reduction in the state’s prescription drug overdose rate, from 14.5 to 11.1 overdoses per 100,000 individuals, a statistically significant decrease. |
| Studies | Johnson, H., Paulozzi, L., Porucznik, C., Mack, K., & Herter, B. (2014). Decline in drug overdose deaths after state policy changes—Florida, 2010–2012. <i>Morbidity and Mortality Weekly Report</i> , 63(26), 569–574. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6326a3.htm |
| Additional Resources | National Conference of Insurance Legislators (2013). Best practices to address opioid abuse, misuse and diversion. National Alliance for Model State Drug Laws. Retrieved from http://www.namsdl.org/library/04A5C244-07CA-6E4E-90E19406642FE80B/ |

⁶ Betses, M., & Brennan, T. (2013). Abusive prescribing of controlled substances: A pharmacy view. *New England Journal of Medicine*, 369(11), 989–991. Retrieved from <http://fmed.uba.ar/depto/toxico1/articulos/1.pdf>

HARM REDUCTION

Harm reduction programs and practices mitigate the risks associated with opioid misuse and overdose. These programs and practices are designed to reduce death, disability, and other negative consequences associated with prescription opioid misuse and overdose.

| Abuse Deterrent Drug Formulations | |
|-----------------------------------|---|
| Contacts | <p>Name: Theodore J. Cicero</p> <p>Email: cicerot@wustl.edu</p> |
| Description | <p>Prescription drug formulation alterations are designed to inhibit the abusive properties of prescription drugs. These alterations can take many forms, including physical alterations (e.g., alterations to a drug's manufactured form that are designed to deter individuals from extracting its active ingredient) and pharmacological alterations (e.g., alterations to a drug's chemical compound designed to reduce its rate of absorption). Common alterations include physical composition changes, chemical composition changes, new agonist/antagonist combinations, adding aversion formulations, altering the drug delivery system, or adding prodrug alternations.</p> |
| Populations | <p>Individuals with a DSM-IV-defined opioid dependence who entered a treatment program</p> |
| Settings | <p>Pharmaceutical corporation manufacturing sites</p> |
| Evaluation Design | <p>Retrospective, non-experimental, self-administered anonymous surveys of individuals entering a substance abuse treatment program with prescription opioids identified as their primary drug of abuse; from July 1, 2009, through March 31, 2012. Data were collected quarterly from 2,566 individuals in independent cohorts; 103 of these individuals also voluntarily participated in qualitative online or telephone interviews.</p> |
| Outcomes | <p>Prescription Drug Abuse Deterrent Formulation Packaging has been associated with the following:</p> <ul style="list-style-type: none"> • Decrease in the percentage of survey participants who reported OxyContin as their primary drug of abuse • Decrease in past 30-day misuse of OxyContin among survey participants • A substantial percent (24) of participants overcoming the new formulation • A majority (66 percent) of participants misusing other opioids (the most common transition was to heroin, followed by high-potency fentanyl and hydromorphone.) |

| Abuse Deterrent Drug Formulations | |
|-----------------------------------|--|
| Studies | Cicero, T. J., Ellis, M. S., & Surratt, H. L. (2012). Effect of abuse-deterrent formulation of OxyContin. <i>New England Journal of Medicine</i> , 367(2), 187–189. |
| Additional Resources | <p>Food and Drug Administration (2015). Abuse-deterrent opioids—Evaluation and labeling: Guidance for industry. Retrieved from: https://www.fda.gov/downloads/drugs/guidancecompliance/regulatoryinformation/guidances/ucm334743.pdf</p> <p>Webster, L., St. Marie, B., McCarberg, B., Passik, S.D., Panchal, S. J., & Voth, E. (2011). Current status and evolving role of abuse-deterrent opioids in managing patients with chronic pain. <i>Journal of Opioid Management</i>, 7(3), 235–245.</p> <p>Woodcock, J. (2014). Public meeting on abuse deterrent formulations: Framing the issues. Silver Spring, MD: FDA Center for Drug Evaluation and Research. Retrieved from: https://www.fda.gov/Drugs/NewsEvents/ucm509853.htm</p> |

| Good Samaritan Laws | |
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| Contacts | <p>Name: Caleb J. Banta-Green</p> <p>Phone: (206) 685-3919</p> <p>Email: calebbg@uw.edu</p> |
| Description | <p>“Good Samaritan” Laws provide criminal, civil, or professional liability protections for individuals responding to an overdose in good faith. These laws may protect individuals reporting an overdose, but may also protect individuals involved in the overdose response, including:</p> <ul style="list-style-type: none"> • The individual who prescribed the naloxone (if applicable); • The individual who dispensed the naloxone (if applicable); and • The individual who administered the naloxone (i.e., a medical first responder, non-medical first responder, or layperson). |
| Populations | Professional first responders (police officers, emergency medical services personnel, firefighters), people who use opioids and other drugs |
| Settings | Syringe exchange in Washington state |

| Good Samaritan Laws | |
|-----------------------------|---|
| Evaluation Design | A mixed methods, non-experimental study utilizing written and video records of legislative procedures; interviews with key stakeholders including legislators and advocacy groups; written documents regarding legal dissemination; and anonymous surveys with 245 police officers, 28 paramedics, and 355 needle exchange program clients. All records, interview data, and survey data were collected in 2011. |
| Outcomes | Among opioid users, awareness of naloxone access laws was associated with greater use of 911 in the event of an overdose. |
| Studies | Banta-Green, C. J., Kuszler, P. C., Coffin, P. O., & Schoeppe, J. A. (2011). <i>Washington's 911 Good Samaritan Drug Overdose Law - Initial evaluation results</i> . Retrieved from Alcohol & Drug Abuse Institute, University of Washington: http://adai.uw.edu/pubs/infobriefs/ADAI-IB-2011-05.pdf |
| Additional Resources | <p>Davis, C. (2016). <i>Legal interventions to reduce overdose mortality: Naloxone access and overdose Good Samaritan laws</i>. Robert Wood Johnson Foundation. Retrieved from https://www.networkforphl.org/_asset/qz5pvn/naloxone- FINAL.pdf</p> <p>National Alliance for Model State Drug Laws. (2016). <i>Good Samaritan Overdose Prevention Statutes</i>. Retrieved from http://www.namsdl.org/library/C9E349AA-0244-7A52-A8E8F5CCDF690BA4/</p> |

| Medication-Assisted Treatment | |
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| Contacts | <p>Name: Robert P. Schwartz</p> <p>Email: Rschwartz@friendsresearch.org</p> |
| Description | <p>Medication-Assisted Treatment (MAT) involves integrating medications (e.g., methadone, buprenorphine, or naltrexone) with behavioral therapies and counseling to treat opioid addiction. Medications are typically dispensed at licensed treatment facilities, although buprenorphine and naltrexone can be prescribed by certain doctors.</p> <p>In addition to the treatment itself, activities to connect individuals at increased risk for overdose (such as people who have abstained from opioid use for a few days or longer and had a change in tolerance) to MAT and other follow-up services may help reduce instances of overdose.</p> |
| Populations | People with opioid use disorders |
| Settings | Treatment centers, primary care offices |

Medication-Assisted Treatment

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| Evaluation Design | Retrospective, longitudinal time series analysis examining the associations between the expansion of methadone and buprenorphine treatment, heroin purity, and prevalence of heroin overdose deaths in Baltimore, Maryland from 1995 to 2009. Obtained the annual number of unique patients treated with methadone or buprenorphine (24,395 and 112,249 in total, respectively) from communication with the Maryland Department of Health records, average annual purity of heroin from communication with the US Drug Enforcement Agency, and heroin overdose deaths (3,254 in total) from Baltimore City Health Department records. |
| Outcomes | Increased access to MAT in Baltimore, Maryland was associated with reduction in fatal overdose. |
| Studies | Schwartz, R. P., Gryczynski, J., O'Grady, K. E., Sharfstein, J. M., Warren, G., Olsen, Y., . . . Jaffe, J. H. (2013). Opioid agonist treatments and heroin overdose deaths in Baltimore, Maryland, 1995–2009. <i>American Journal of Public Health, 103</i> (5), 917-922. |
| Additional Resources | <p>Substance Abuse and Mental Health Services Administration. (2016). <i>Medical-assisted treatment</i>. Retrieved from https://www.samhsa.gov/medication-assisted-treatment</p> <p>Substance Abuse and Mental Health Services Administration. (2018). Medications for Opioid Use Disorder. Treatment Improvement Protocol (TIP) Series 63, Full Document. HHS Publication No. (SMA) 18-5063FULLDOC. Retrieved from: https://store.samhsa.gov/shin/content//SMA18-5063FULLDOC/SMA18-5063FULLDOC.pdf</p> |

Overdose Education and Naloxone Distribution Programs

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| Contacts | <p>Name: Alex S. Bennett (Bennett, Bell, Tomedi, Hulsey, & Kral, 2011) Email: bennett.alexander001@gmail.com Address: National Development and Research Institutes Inc., Public Health Solutions, New York, NY, USA</p> <hr/> <p>Name: Alexander Walley (Doe-Simkins et al., 2014; Doe-Simkins, Walley, Epstein, & Moyer, 2009) Email: awalley@bu.edu Address: Clinical Addiction Research Education Unit, Section of General Internal Medicine, Boston University School of Medicine, 901 Massachusetts Ave, Second Floor, Boston, MA 02118</p> |
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Overdose Education and Naloxone Distribution Programs

Contacts (cont.)

Name: Joshua D. Bamberger (Enteen et al., 2010)

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Address: Housing and Urban Health, San Francisco Department of Public Health, San Francisco, CA

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Phone: 734-647-9741

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Phone: 212-788-5070

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Address: Department of Community Health and Prevention, School of Public Health, Drexel University, 1505 Race Street, 11th Floor, Philadelphia, PA 19102, USA

Name: Sarz Maxwell (Maxwell, Bigg, Stanczykiewicz, & Carlgerg-Racich, 2006)

Email: sarzmaxmd@yahoo.com

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Name: Traci Craig Green (Green, Heimer, & Grau, 2008; Yokell, Green, Bowman, McKenzie, & Rich, 2011)

Email: traci.c.green@yale.edu

Address: Yale School of Public Health, 60 College Street, PO Box 208034, New Haven, CT 06520

Name: Karen Seal (Seal et al., 2005)

Email: karens@itsa.ucsf.edu

Address: Department of Medicine, San Francisco VA Medical Center, University of California, San Francisco, 4150 Clement Street, Box 111-A1, San Francisco, CA 94121

Overdose Education and Naloxone Distribution Programs

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| Contacts (cont.) | <p>Name: Karen Tobin (Tobin, Sherman, Bielensohn, Welsh, & Latkin, (2009)) Email: ktobin@jhsph.edu Phone: 410-502-5368</p> <hr/> <p>Name: Karla D Wagner (Wagner et al., 2010) Email: kdwagner@usc.edu Address: Institute for Health Promotion and Disease Prevention Research, Keck School of Medicine, University of Southern California, 1000 S.Fremont Ave, Unit 8, Alhambra, CA 91803. Phone: 626-457-4096</p> <hr/> <p>Name: Eliza Wheeler (Wheeler, Davidson, Jones, & Irwin, 2012) Email: wheeler@harmreduction.org Phone: 510-444-6969</p> |
| Description | <p>Overdose education and naloxone distribution (OEND) programs focus on providing training on recognizing and preventing opioid overdoses to individuals, usually people who have or are currently misusing opioids and who are likely to be in contact with individuals at risk for an overdose. Program participants learn what the start of an overdose looks like and how to administer naloxone to prevent overdoses. Program participants are also provided prescriptions for naloxone.</p> |
| Populations | <p>People who misuse opioids (current and former)</p> |
| Settings | <p>OEND programs located in Baltimore, San Francisco, Chicago, New York City (three), Los Angeles, Pennsylvania (two), Massachusetts, and New Mexico. Program training occurred in varied settings, including substance abuse treatment programs, needle exchanges, private homes, community events, and street settings.</p> |
| Evaluation Design | <p>Multi-City: Retrospective, quasi-experimental design using individual surveys and interviews to determine outcomes of six OEND programs in Baltimore, San Francisco, Chicago, New York City (2), and New Mexico. Researchers interviewed 62 individuals, an average of 10 individuals from each program, of whom 5 had received OEND training and 5 had not (Green, 2008).</p> <p>San Francisco (A): Non-experimental prospective study with 1,942 participants of an overdose prevention training and naloxone prescription program. Between September 2003 and December 2009, data was collected from participants immediately following the initial training and naloxone distribution and during each subsequent time that they visited study sites to request a naloxone refill (Enteen et al., 2010).</p> |

Overdose Education and Naloxone Distribution Programs

Evaluation Design (cont.)

San Francisco (B): Non-experimental prospective study with 24 participants of a pilot overdose prevention and naloxone distribution program in San Francisco in July and August 2001. Participants were prospectively followed for 6 months after participation in the program from August 2001 through January 2002, interviewed monthly, and asked to contact study staff within 48 hours after witnessing or experiencing an overdose. When possible, records on reported overdose events were obtained from San Francisco Emergency Medical Services, local hospital emergency departments, and the medical examiner (Seal et al., 2005).

Pennsylvania: Non-experimental prospective study with 426 clients of the Prevention Point Pittsburgh who had participated in an overdose prevention program between July 1, 2005 and December 31, 2008. Data was collected immediately prior to the overdose prevention training and when the participants returned to the study site for a naloxone refill (9.6 months after first time point, on average) (Bennett et al., 2011).

Massachusetts (A): Retrospective cohort study using program data from the 4,926 substance-using participants of the Massachusetts Overdose Education and Naloxone Distribution (OEND) pilot program. Two retrospective analyses were conducted with data collected between 2006 and 2010. The first analysis compared 373 participants who reported conducting a naloxone rescue before (n = 78) vs. after (n = 295) participating in the OEND program. The second analysis investigated 325 participants from whom substance use information had been collected more than once between September 18, 2006 and December 31, 2010 (Doe-Simkins et al., 2014).

Massachusetts (B): Non-experimental prospective cohort study with 385 clients of a needle-exchange program who had participated in an overdose prevention training with naloxone distribution. Between September 2006 and December 2007 data was collected from participants when they first enrolled in the overdose prevention training and each subsequent time that they returned to the needle exchange program for other services (Doe-Simkins et al., 2009).

New York City (A): Non-experimental prospective repeated measures study with 25 participants of a pilot overdose prevention and naloxone distribution program at a New York City syringe exchange program. Between June 2004 and January 2005 participants completed measures at baseline prior to participation in the program, at interim visits when they returned for naloxone prescription refills, and 3 months after baseline (Galea et al., 2006).

Overdose Education and Naloxone Distribution Programs

Evaluation Design (cont.)

New York City (B): Case study of an overdose education and naloxone distribution program in New York City and the roles of various stakeholders including syringe exchange programs, harm-reduction advocates, researchers, academics, and city and state governments. Discusses the procurement of funding, initiation of the pilot, and expansion of the program from 2003 to 2006, as well as legislative changes to address legal barriers to prescribing and dispensing naloxone between 2005 and 2006 (Heller & Stancliff, 2007).

New York City (C): Non-experimental cross-sectional program evaluation of a comprehensive overdose response training and naloxone distribution program delivered at syringe exchange programs in New York City. Between March 2005 and December 2005, 122 participants who had completed the initial training program completed a questionnaire when returning to the program site for a naloxone refill (Piper et al., 2008).

Los Angeles (A): Cross-sectional, non-experimental study of 30 individuals who inject drugs who had participated in an overdose prevention program. Interviews consisting of open-ended and closed-ended questions were conducted to generate qualitative and quantitative data between 2010 and 2011 (Lankenau et al., 2013).

Los Angeles (B): Non-experimental prospective study with 66 participants of an overdose prevention and naloxone distribution program in Los Angeles, California. Participants completed a baseline interview prior to their participation in the program between September 2006 and January 2008. Follow-up data was collected 3 months after the training. Data was also collected from participants who returned to the study site to obtain a refill of naloxone between baseline and follow-up (Wagner et al., 2010).

Rhode Island: Case study presenting an overview and pilot evaluation of the PONI (Preventing Overdose and Naloxone Intervention) opioid overdose prevention program in Rhode Island. 120 participants completed a baseline measure prior to their participation in the program between late 2006 and 2011. Informal follow-up data collection occurred when participants returned for follow-up with PONI staff. Over 1,000 inmates at RI correctional facilities have also been trained in overdose prevention by PONI staff (Yokell et al., 2011).

United States: Non-experimental cross-sectional study of 48 community-based overdose prevention programs in the United States. Data was collected via an online survey in October 2010 and data collected from this survey represented program outcomes from 1996 through June 2010. Furthermore, the number of programs beginning naloxone distribution each year during 1996–2010 was compared with the annual crude rates of unintentional drug overdose deaths per 100,000 population from 1979 to 2008 (Wheeler et al., 2010).

Overdose Education and Naloxone Distribution Programs

Outcomes

Multi-city: Compared to those who did not receive OEND training, those who did were better able to correctly identify opioid overdose cases and more likely to report responding to at least one overdose in the past year (Green, 2008).

San Francisco (A): Eleven percent of participants reported that they had naloxone to respond to an overdose. Three quarters of OEND training participants reported using overdose prevention strategies such as rescue breathing, however, a minority (29%) reported calling emergency services (Enteen, 2010).

San Francisco (B): Ninety-five percent of the 20 overdose incidents that were reported involved the participant performing rescue breathing/CPR or administering naloxone. Participants called for emergency medical services during two of the 20 incidents. Six months after completing the training, participants' knowledge of heroin overdose prevention and management had increased. Furthermore, their frequency of heroin injection had decreased (Seal, 2005).

Pennsylvania: Sixty-three percent of the participants who returned for a naloxone refill reported that they used the naloxone prescribed at the overdose prevention program (OPP) to respond to an overdose. In 96% of these cases, the person who overdosed was reported to be "okay," and in 0.8% of cases, the person died. One-third of participants reported calling for medical assistance upon witnessing an overdose prior to the OPP, as opposed to 10% after. The majority (71%) of people who did not call for help reported fear of police involvement as the reason, With 20% reporting that it was unnecessary because the person recovered from the overdose due to narcan or other reasons (Bennett, 2011).

Massachusetts (A): There were no significant differences in rates of help-seeking, rescue breathing, staying with the victim, and naloxone success in reported overdose incidents in individuals who had received the OEND training before the event versus individuals who had not been trained. (Doe-Simkins, 2014).

Massachusetts (B): Follow-up contact was made with 278 of the 385 participants (72%) who had received overdose education and naloxone. Fifty-seven (15%) requested additional doses of naloxone, with 50 (13%) reporting a total of 74 successful overdose reversals using naloxone. Emergency medical personnel was reported to be involved in 21 of the 74 (28%) reported overdoses (Doe-Simkins, 2009).

New York City (A): Compared to baseline data, OEND training participants were more likely to have called an ambulance in the event of an overdose (81% compared to 57%) and employ rescue breathing (27% compared to 5.3%) (Galea, 2006).

New York City (B): Three percent of opioid overdose prevention program participants reported that they had reversed an overdose using naloxone.

Overdose Education and Naloxone Distribution Programs

Outcomes (cont.)

The rate of overdose reversals among participants increased to 7% after 12 months and to 9% after 18 months (Heller, 2007).

New York City (C): Among the program participants who had witness an overdose since their training, approximately 70% had used naloxone to respond. In 83% of the overdose instances reported, the person who had naloxone administered to them lived. A majority of program participants (82.2%) reported feeling comfortable using naloxone if they witnessed an overdose, and 27% reported that they kept naloxone with them at all times or in their house where they usually used drugs (Piper, 2008).

Los Angeles (A): Among the 30 witnessed overdose events, the victim recovered in 29. Participants who had been trained by the overdose prevention program reported using a variety of techniques to respond to an overdose, including injecting the victim with naloxone (50%), performing rescue breathing (33%), calling 911 (23%), and stimulating the victim with knuckles (10%). Participants described feeling capable of injecting naloxone and reported few difficulties. 911 was called twice as often when the victim was not injected with naloxone (62%) vs. when they were injected with naloxone (29%) (Lankenau et al., 2013).

Los Angeles (B): Three months after the training, program participants demonstrated a significant increase in their knowledge of the effects of naloxone and its appropriate use. Forty percent of participants also reported that they had trained someone else in overdose response in the previous three months. Participants who had witnessed an overdose at both baseline and follow-up showed a significant increase in the use of recommended response techniques, and a non-significant decrease in the use of non-recommended response techniques. A majority of participants (53%) reported a decrease in drug use from baseline to follow-up and the proportion of participants in drug treatment increased from 23% to 36% (Wagner, 2010).

Rhode Island: Ten out of 120 total participants returned for follow-up post-training. Of these participants, five had administered naloxone to reverse an opioid overdose and five had used their overdose response training but did not find it necessary to administer naloxone. Anecdotal reports from community agencies that hosted trainings indicated that individuals had used naloxone to reverse opioid overdoses in the community, although these reports were not systematically recorded. (Yokell, 2011)

United States: Forty-eight programs completed the survey and reported findings from 188 local overdose prevention programs. The respondent programs reported providing training and distributing naloxone to a total of 53,032 persons and receiving reports of 10,171 overdose reversals since 1996. Out of the 25 states with 2008 drug overdose death rates higher than the median, 19 (76%) did not have a community-based opioid overdose prevention program (Wheeler, 2012).

Overdose Education and Naloxone Distribution Programs

Studies

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| Overdose Education and Naloxone Distribution Programs | |
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| Studies (cont.) | <p>Tobin, K. E., Sherman, S. G., Bielensohn, P., Welsh, C., & Latkin, C. A. (2009). Evaluation of the Staying Alive programme: Training injection drug users to properly administer naloxone and save lives. <i>Journal of Drug Policy, 20</i>(2), 131–136.</p> <p>Wagner, K., Valente, T. W., Casanova, M., Partovi, S. M., Mendenhall, B. M., Hundley, J. H., ... & Unger, J. B. (2010). Evaluation of an overdose prevention and response training programme for injection drug users in the Skid Row area of Los Angeles, CA. <i>International Journal of Drug Policy, 21</i>(3), 186–193.</p> <p>Wheeler, E., Davidson, P. J., Jones, T. S., & Irwin, K. S. (2012). Community-based opioid overdose prevention programs providing naloxone—United States, 2010. <i>MMWR. Morbidity and Mortality Weekly Report, 61</i>(6), 101–105.</p> <p>Yokell, M. A., Green, T. C., Bowman, S., McKenzie, M., & Rich, J. D. (2011). Opioid overdose prevention and naloxone distribution in Rhode Island. <i>Medicine and Health, Rhode Island, 94</i>(8), 240–242.</p> |
| Additional Resources | <p>Massachusetts Department of Public Health (2012). <i>Opioid overdose education and naloxone distribution: MDPH naloxone pilot project core competencies</i>. Retrieved from http://www.mass.gov/eohhs/docs/dph/substance-abuse/core-competencies-for-naloxone-pilot-participants.pdf</p> <p>Massachusetts Department of Public Health (2017). <i>Opioid education and naloxone distribution: Information sheet</i>. Retrieved from: http://www.mass.gov/eohhs/docs/dph/substance-abuse/naloxone-info.pdf</p> |

| Overdose Education and Naloxone Distribution Programs within Methadone Treatment | |
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| Contacts | <p>Name: Alexander Y. Walley</p> <p>Phone: (617) 414-6975</p> <p>Email: awalley@bu.edu</p> |
| Description | <p>These strategies specifically targeted individuals receiving methadone through a treatment program (inpatient detox, needle exchange, methadone maintenance, and other settings), providing education on how to recognize and prevent an opioid overdose and distributing intranasal naloxone rescue kits.</p> |
| Populations | <p>Individuals with past 30-day methadone use through a treatment program</p> |

| Overdose Education and Naloxone Distribution Programs within Methadone Treatment | |
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| Settings | Various methadone treatment programs in Massachusetts from 2008 to 2010, including detox programs, methadone maintenance programs, needle exchanges, residential and outpatient substance abuse treatment programs, and hospital ERs. Also community meetings and homeless shelters. |
| Evaluation Design | Prospective, non-experimental design using program data for the 1,553 Massachusetts Opioid Overdose Prevention Pilot Program participants who reported past 30-day methadone use and their program enrollment setting. Data were collected from September 28, 2008, to December 31, 2010, at program enrollment and whenever a participant requested a naloxone kit refill. |
| Outcomes | Intervention participants reported reversing a total of 92 overdoses with the provided naloxone kits, with two-thirds of the reversed overdoses occurring in private settings and one-third occurring in public settings. |
| Studies | Walley, A. Y., Doe-Simkins, M., Quinn, E., Pierce, C., Xuan, Z., & Ozonoff, A. (2013). Opioid overdose prevention with intranasal naloxone among people who take methadone. <i>Journal of Substance Abuse Treatment</i> , 44(2), 241–247. |
| Additional Resources | Massachusetts Department of Public Health (2012). <i>Opioid overdose education and naloxone distribution: MDPH naloxone pilot project core competencies</i> . Retrieved from http://www.mass.gov/eohhs/docs/dph/substance-abuse/core-competencies-for-naloxone-pilot-participants.pdf Massachusetts Department of Public Health (2017). <i>Opioid education and naloxone distribution: Information sheet</i> . Retrieved from: http://www.mass.gov/eohhs/docs/dph/substance-abuse/naloxone-info.pdf |

| Project Lazarus | |
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| Contacts | Name: Fred W. Brason II Phone: (336) 667-8100 Email: fbrason@projectlazarus.org |
| Description | Project Lazarus is a four-component prevention model which includes (1) community activation and coalition building, (2) monitoring and epidemiologic surveillance, (3) prevention of overdoses through medical education and other means, and (4) use of rescue medication to reverse overdoses. |

| Project Lazarus | |
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| Description (cont.) | Each component is intended to work in conjunction with the others to identify and correct causes of prescription drug overdoses and reduce the harm caused by overdoses that continue to occur. |
| Populations | Prescribers, patients at risk of overdose, community members |
| Settings | Wilkes County, North Carolina |
| Evaluation Design | Retrospective non-experimental design assessing overdose death rates in Wilkes County, NC (population of 66,500 in 2011) before and after program implementation using state and county epidemiological surveillance data. Annual data was reported from 2005 to 2011, four years prior to and two years after implementation. |
| Outcomes | Implementation of Project Lazarus has been associated with decreases in the following: <ul style="list-style-type: none"> • Prescription drug overdose death rate in Wilkes County. • Percentage of individuals who died from a prescription overdose who had received their prescription from a prescriber operating within Wilkes County. • Number of emergency department visits for overdoses or substance abuse from 2009 to 2010. |
| Studies | Albert, S., Brason II, F.W., Sanford, C. K., Dasgupta, N., Graham, J., & Lovette, B. (2011). Project Lazarus: Community-based overdose prevention in rural North Carolina. <i>Pain Medicine</i> , 13(Suppl 2), S77-S85. doi: 10.1111/j.1526-4637.2011.01128.x |
| Additional Resources | Harm Reduction Coalition. (n.d.). Project Lazarus: Case study. Retrieved from http://harmreduction.org/issues/overdose-prevention/tools-best-practices/naloxone-program-case-studies/project-lazarus/ Project Lazarus website. Retrieved from: https://www.projectlazarus.org/ |