



Published in final edited form as:

Subst Abus. 2015 ; 36(2): 141–143. doi:10.1080/08897077.2014.991058.

Pharmaceutical opioids in the home and youth: implications for adult medical practice

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Abstract

Pharmaceutical opioid prescribing, opioid use disorders, and related poisonings have increased substantially in the last decade. In particular, pharmaceutical opioid deaths among youth have markedly increased. One area that has received relatively little attention is the role of home safety, given that parents are an important source of opioids for youth. Parents may intentionally share opioids with youth, due to low perceived risks or limited knowledge, and youth may divert opioids from parents' medicine cabinets. Safe medication storage has long been mandated by treatment programs that provide pharmacologically supported treatment of opioid use disorders, but it is not generally encouraged or required for pharmaceutical opioids prescribed for pain. Greater attention is needed on the development, evaluation and implementation of three preventive strategies. These three strategies can be delivered in or supported by adult medical practices: 1) fully informing adults prescribed opioids about the risks of opioids to family members and others; 2) providing locked medication safe storage devices; and 3) educating parents on safe disposal options. However, a critical evidence base is still lacking for these opioid safety interventions.

Keywords

opioids; prescription drug abuse; diversion

Substantial increases in opioid prescribing across the age spectrum have been observed in recent years.^{1,2} As opioids have become increasingly available through the health care setting, opioids have become the most commonly initiated drugs of abuse among youth.³ In 2012, 5.4% of 12-17 year olds and 10% of 18-25 year olds reported nonmedical use of prescription drugs.⁴ Furthermore, death rates from unintentional opioid poisonings in youth have increased six-fold in the last decade.⁵

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The authors declare that they have no conflicts of interest.

Parents may be an important source of pharmaceutical opioids for youth.⁶ National survey data demonstrate that adolescents commonly report using opioid medications found in the home and receiving these medications from parents.^{3,6} Youth may obtain pharmaceutical opioids from parents in the following two ways.

One, parents may *intentionally share* their prescriptions with their children to treat minor pain and injuries. Sharing opioids with youth may be due to a lack of awareness of the risks of pharmaceutical opioids, a lack of appropriate counseling by physicians and pharmacists about the risks of opioids, and a culture of sharing medications within households. The risks of sharing opioids with family members may appear intuitive to physicians, particularly for high potency and long-acting opioid formulations. However, the risks may not be intuitive to patients. While there are little data on how common the practice is, our primary care and addiction practice experience suggests that intentional sharing of pharmaceutical opioids in the family is ubiquitous.

Two, youth may *divert* the medications from the medicine cabinets of their parents – and those of other families – a behavior sometimes referred to as “pharming.”⁷ Recent survey data shows that 60% of adolescents report that prescription pain relievers are easily accessible from their parent's medicine cabinets.⁸ Epidemiologic data suggests that, for youth (18-24 year olds), diverted medications are more commonly involved in overdose deaths than among older age groups.⁹ Unfortunately, low tolerance to opioids, coupled with little knowledge of appropriate dosing, puts youth exposed in this manner at particularly high risk for overdose.

These two related public health problems require three new prevention approaches focused on adult medical practices. First, to fully inform patients about the risks and benefits of opioids, physicians and pharmacists should discuss the risks of opioids to family members and other individuals who reside or visit the home. While individual medication effects, such as constipation and sedation, are more routinely communicated with patients prescribed opioids, risks to other members of the family are less commonly discussed. Additionally, physicians and pharmacists should counsel patients to model safe medication behaviors to their children and not to share their medications.

Second, physicians, pharmacists, medication benefit plans and health systems should consider encouraging safe storage of medications in the home. Safe storage involves storing opioids in a portable lock box or a locked medicine cabinet installed in the home. A safe storage device would be a potentially cost-effective method to both remind parents about the risks of the medications and create a physical barrier to easy access to pharmaceutical opioids. To date, we are unaware of any medical practices, insurance plans, or health systems that provide safe storage devices to their patients.

Safe storage devices are similar to firearm locks and safes that protect against unintentional gunshot injuries. Firearm locks and safes simultaneously act as a form of means restriction to prevent suicide attempts. Studies suggest that safe firearm storage practices can reduce firearm injuries,¹⁰ office-based counseling of parents can increase self-reported use of firearm cable locks,¹¹ and installation of firearm cabinets can optimize home storage of

firearms.¹² These studies also suggest that it is critical to assess parental preferences in the design of interventions to promote home safety and that adherence is far from universal.^{12,13}

Safe medication storage has long been mandated by substance use treatment programs that provide methadone, but it is not generally encouraged or required for pharmaceutical opioids prescribed for pain, or even for methadone when used for pain. Small international studies have examined safe storage of methadone among opioid dependent clients enrolled in licensed drug treatment programs.¹⁴⁻¹⁷ In one of these studies (n=104), safe storage of methadone was optimal among 33% of clients and acceptable among 80%. Safe storage was positively associated with higher doses of methadone, children in the home, and safe storage of other medications.¹⁴ Yet, another study on safe storage among 20 patients prescribed opioids at discharge from the emergency department suggests that suboptimal storage practices are the norm. In this study, a home visit demonstrated improper storage among 19 of the 20 patients.¹⁸ These studies suggest that drug treatment settings have already developed safety practices that can be modelled by traditional medical care settings.

Third, safe disposal is a key component of home opioid safety. The Food and Drug Administration (FDA) does include many opioids among the list of medications which can be flushed, but there are environmental concerns associated with flushing opioids into our water supply. The FDA also offers options for how to dispose of medications in household trash (e.g. mixing with unpalatable substances such as kitty litter and sealing in a plastic bag), but these come with the caveat that disposing of opioids in household trash may not be legal in all jurisdictions.¹⁹ Ideally, opioid medications should be disposed of through sponsored programs such as the Drug Enforcement Agency (DEA) National Take-Back Initiative. Recently, the DEA expanded the options for the collection of medications by retail pharmacies,²⁰ but practical disposal options may still be limited and confusing to parents. In Colorado, the statewide Consortium for Prescription Drug Abuse Prevention created and distributed patient education on safe storage and disposal in retail pharmacies. Counselling on safe disposal at the time of opioid prescribing and dispensing is a promising approach to mitigating risk. However, this approach is most likely to be effective for patients prescribed opioids for acute injuries or surgical pain. In contrast, patients who take their opioid medications for chronic conditions will not dispose of their medications because they use them on a daily basis. For these patients, counselling on the risks to secondary recipients and safe storage will still be needed to maximize home safety.

These common-sense approaches have the potential to make a significant public health impact on the morbidity and mortality associated with pharmaceutical opioids. In the midst of this public health crisis, it is imperative that we begin to address home safety in the context of adult medical practice. However, it should also be stressed that there is no evidence base to support these approaches. Thus, in parallel, we recommend research to develop and evaluate the best approaches to educate patients on the risks of opioid to family members and others who visit the home, encourage home safe storage, and promote safe disposal.

ACKNOWLEDGEMENTS

We thank Carol Runyan, PhD, Robert J. Valuck, PhD, Arthur Davidson, MD, MSPH, and John F. Steiner, MD, MPH for their thoughtful input and contributions.

FUNDING

Drs. Binswanger and Glanz are supported by the National Institute on Drug Abuse of the National Institutes of Health under Award Number R34DA035952. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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