Prescription Drug Misuse/Abuse Risk Factors Literature Review

Risk Factor	Brief Findings	Literature (not exhaustive list)
Availability	A recent Associated Press analysis of U.S. Drug Enforcement Administration data shows that between 1997 and 2007, the volume of five major painkillers (codeine, hydrocodone, meperidine, morphine, and oxycodone) distributed in the United States rose by 90%. The most dramatic rise was seen in the sales of oxycodone, which increased nearly 600% between 1997 and 2005 (Elliot et al 2009). Older adults abusers of prescription drugs do not usually obtain them illegally. Instead, unsafe combinations or amounts of medications may be obtained by seeking prescriptions from multiple physicians (doctor shopping). Many times, the misuse (or abuse) of prescription medications involves inappropriate prescribing or poor monitoring by health care professionals. (Culberson and Ziska 2008) Research has p that when alcohol or drugs are inexpensive, convenient, and easily accessible, people are more likely to use it. (Birckmayer et al, 2004).	Barteis, et al. (2006). Evidence-based practices for preventing substance abuse and mental health problems in older adults. SAMHSA, 2006; 4-25. Culberson & Ziska, (2008). Prescription drug misuse/abuse in the elderly. *Geriatrics*, Volume 63, Number 9. Birckmayer, et al. (2004). A general causal model to guide alcohol, tobacco, and illicit drug prevention: Assessing the research evidence. *Journal of Drug Education* 34(2). Elliott, et al. (2009). The Scope of Adolescent Prescription Drug Abuse. *Emerg Med* 41(1):16.
Social Access	Youths and young adults typically acquire drugs by stealing them from parents or relatives, and buying them from classmates or peers who are selling legitimate prescriptions (Herman-Stahl, Krebs, Kroutil, & Heller, 2006; Barteis et al 2006; Culberson and Ziska 2008). The internet, may also play a significant role in overall availability by opening up a new source for acquisition of these drugs, explaining a portion of the increase in their abuse. (Birckmayer et al, 2004; Manchikanti 2007). Anyone with a credit card can now obtain access to prescription drugs, allowing these substances to be taken without the supervision of a physician (Compton & Volkow, 2006). So educating parents about safeguarding prescriptions and monitoring internet use in the household is critical.	Barteis, et al. (2006) Evidence-based practices for preventing substance abuse and mental health problems in older adults. SAMHSA, 2006; 4-25. HallL, et al. (2010). Prescription Drug Misuse Among Antisocial Youths. *JOURNAL OF STUDIES ON ALCOHOL AND DRUGS* NOVEMBER 2010 Laxmaiah Manchikanti (2007), National Drug Control Policy and Prescription Drug Abuse: Facts and Fallacies. *Pain Physician* 2007; 10. Compton & Volkow (2006). Abuse of prescription drugs and the risk of addiction. *Drug & Alcohol Dependence* 83(1).

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	For individuals in most demographic groups, prescription drugs are easier to obtain than illicit drugs. A survey in Canada compared the characteristics of persons abusing prescription drugs with those who abused heroin. The former were more likely to have both physical health problems and better access to private physicians. According to the National Survey on Drug Use and Health (NSDUH) (2007–2008), among persons of ages 12 years and older who admitted to nonmedical use of analgesics at any time during the previous 12 months, nearly 20% obtained their most recent medication with a physician's prescription. For persons who are inexperienced or uncomfortable with the risks of obtaining illicit drugs from a drug dealer, prescription drugs may be accessed through safer means. For instance, in the same survey, 55.9% of those admitting nonmedical use of analgesics had obtained the drug on the most recent occasion from a friend or relative. Another 18.0% reported that they had obtained the drug each time from a single doctor, 0.4% bought the drugs through the Internet, and only 4.3% bought the drugs from a drug dealer or other stranger. (Hernandez and Nelson 2010)	Goldsworthy, et al. (2008). Beyond Abuse and Exposure: Framing the Impact of Prescription-Medication Sharing. *American Journal of Public Health,* Vol 98, No. 6. NIELSEN & BARRATT (2009). Prescription drug misuse: Is technology friend or foe? *Drug and Alcohol Review*, January 2009. Hawkins, J. D., M. W. Arthur, et al. (1995). Preventing Substance Abuse, from Building a Safer Society: Strategic Approaches to Crime Prevention, Volume 19. Michael Tonry & David P Farrington, eds. Herman-Stahl, et al. (2006). Risk and protective factors for nonmedical use of prescription stimulants and methamphetamine among adolescents. *Journal of Adolescent Health*, 39(3). SH Hernandez and LS Nelson (2010). *Prescription Drug Abuse: Insight Into the Epidemic*. Clinical pharmacology & Therapeutics Vol. 88 No. 3
Low Enforcement	Nearly 7 million Americans are abusing prescription drugs—more than the number who are abusing cocaine, heroin, hallucinogens, Ecstasy, and inhalants, combined. That 7 million was just 3.8 million in 2000, an 80 percent increase in just 6 years (USDEA 2010). Although the DEA's Office of Diversion Control and other U.S. government agencies have increased resources and manpower dedicated to investigating the diversion of controlled pharmaceuticals (Hernandez and Nelson 2010), there is still the issue of prescribing accountability of physicians. Controlled medications are prescribed at a considerable proportion of visits from adolescents and young adults, and prescribing rates have nearly doubled since 1994. This trend and its relationship to	U.S. Drug Enforcement Administration (2010). Fact Sheet: Prescription Drug Abuse. SH Hernandez and LS Nelson (2010). *Prescription Drug Abuse: Insight Into the Epidemic*. Clinical pharmacology & Therapeutics Vol. 88 No. 3 Laxmaiah Manchikanti (2007), National Drug Control Policy and Prescription Drug Abuse: Facts and Fallacies. *Pain Physician* 2007; 10. Joranson (2002). Pain management and prescription monitoring. *Journal of pain and symptom management* vol:23 iss:3.

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Risk Factor	Brief Findings	Literature (not exhaustive list)
	misuse of medications warrants further study. Physicians need to watch for prescription and OTC medication abuse. Treatment strategies include (1) inquiring about prescription, OTC, and herbal drug use at the initial examination (even though many individuals are drug-abuse savvy, some are naıve and do not realize that OTC medications can be problematic); (2) inquiring about drug use during office visits; (3) providing disposal containers that patients can use to dispose of their unused or unneeded prescription or OTC medications; (4) treating pain aggressively and appropriately; (5) practicing careful record keeping of prescription refills and controls over prescription blanks; (6) referring patients who are addicted to medications to 12-step programs such as Alcoholic Anonymous, Narcotics Anonymous, and Pills Anonymous; and (7) considering detoxification. (Lessenger and Feinberg 2008) Prescription drug abuse is a crisis that affects not only clinical pharmacologists and physicians but also law-enforcement agencies, government legislation and funding, pharmaceutical technology, domestic life, and the workplace. Ultimately, the efforts of health-care professionals alone cannot adequately address the crisis; a collaborative effort by all the stakeholders is required. (Hernandez and Nelson 2010)	Lowry (2010). Prescribing of Controlled Medications to Teens and Young Adults Increasing. *Pediatrics*, vol:126 pg:1108 Elliott, et al. (2009). The Scope of Adolescent Prescription Drug Abuse. *Emerg Med* 41(1):16. J.E. Lessenger, et al. (2008). Abuse of Prescription and Over-the-Counter Medications. *J Am Board Fam Med, 2008:* 21 Robert J. Fortuna, et al. (2010). Prescribing of Controlled Medications to Adolescents and Young Adults in the United States. *Pediatrics,* 126:1108–1116
Prior Use of ATOD	In general, alcohol and tobacco are the first psychoactive drugs with which young people experiment, and use of these substances precedes use of marijuana and other drugs.)Kandel et al. 1992). Early initiation of substance use is especially important because of its consistent association with increased risk of the development of alcohol and other drug-related problems (Anthony et al 1995; Grant et al 1997; Hingson et al 2006) Nonmedical use of prescription analgesics is particularly high among young adults ages 18 to 25, with approximately one in	Kandel et al. (1992). Stages of progression in drug involvement from adolescence to adulthood. Further evidence for the gateway theory. *J Stud Alcohol*, 53: 447–57. Anthony & Petronis (1995). Early-onset drug use and risk of later drug problems. *Drug Alcohol Depend*, 40: 9–15. Grant & Dawson (1997). Age of onset of drug use and its association with DSM-IV alcohol abuse and dependence: results from the National Longitudinal Alcohol Epidemiologic Survey. *J Subst Abuse.*

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Risk Factor	Brief Findings	Literature (not exhaustive list)
	four reporting lifetime use (SAMHSA 2007a) An analysis of NSDUH data found illicit drug use to be the strongest correlate of prescription opioid misuse among adolescents (Sung et al., 2005). Misuse of nonopioid prescription drugs (e.g., sedatives and anxiolytics) is also associated with illicit drug use and substance-related problems (McCabe et al., 2007a). Hall et al 2010	Hingson et al. (2006). Age at drinking onset and alcohol dependence: age at onset, duration, and severity. *Arch Pediatr Adolesc Med*, 160: 739–46.
Low Commitment to School	An adolescent with a strong bond to school is invested in conventional activities and outcomes; substance use jeopardizes such aspirations, both present and future. Furthermore, it appears that the bond to school is a more robust correlate of nonmedical prescription drug use than the bond to parents (Ford 2009)	Nonmedical Prescription Drug Use Among Adolescents: The Influence of Bonds to Family and School Source: Youth & society Ford yr:2008 vol:40 iss:3 Herman-Stahl (2006). Risk and protective factors for nonmedical use of prescription stimulants and methamphetamine among adolescents. Journal of adolescent health vol:39 iss:3 Latimer (2010). Epidemiologic Trends of Adolescent Use of Alcohol, Tobacco, and Other Drugs. *Child and adolescent psychiatric clinics of North America. V*ol:19 iss:3 Nonmedical Prescription Drug Use Among Adolescents : The Influence of Bonds to Family and School *Youth Society* 2009 40: 336 Jason A. Ford
Peer Norms that Encourage Prescription Drug Misuse/Abuse	The abuse of prescription stimulants has become common among students ever since these drugs were introduced for the treatment of attention-deficit/hyperactivity disorder. The conceptualization of this condition as a lifelong disorder has increased the duration of treatment with methylphenidate and also increased the number of prescriptions in circulation. The Drug Enforcement Agency reported a 600% increase in methylphenidate prescriptions from 1990 to 1995. Nonmedical	SH Hernandez and LS Nelson (2010). *Prescription Drug Abuse: Insight Into the Epidemic*. Clinical pharmacology & Therapeutics Vol. 88 No. 3 The Changing Face of Teenage Drug Abuse — The Trend toward Prescription Drugs Richard A. Friedman, M.D. n engl j med 354;14 (2006)

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Risk Factor	Brief Findings	Literature (not exhaustive list)
	use of stimulant medication is most common among college-aged students (18–24 years). A survey of students taking methylphenidate for attention-deficit/hyperactivity disorder found that 16% of the respondents had been asked by other students to trade, sell, or give them their stimulant medication (Hernandez and Nelson 2010) An Internet survey of >3,000 undergraduate students asked respondents about their nonmedical use of prescription drugs and their perceptions about nonmedical use of drugs by their peers and found that the majority of the students overestimated the prevalence of this practice. Not only is nonmedical use of prescription drugs perceived as avoiding the high-risk lifestyle and stigma associated with the use of illegal drugs, but it is perceived as being safer overall. (Hernandez and Nelson 2010) Teenagers whom I interviewed said that whereas they used illicit drugs only for recreation, they often used prescription drugs for "practical" effects: hypnotic drugs for sleep, stimulants to enhance their school performance, and tranquilizers such as benzodiazepines to decrease stress. They often characterized their use of prescription drugs as "responsible," "controlled," or "safe." (Friedman 2006)	
Family Norms that Encourage Rx Misuse/Abuse	*Note: There is not much connection with parental monitoring and 18- to 25-year-olds in the literature, most are looking at young adults or adolescents living at home.* Higher levels of parental involvement emerged as a protective factor against past-year misuse of prescription opioids. Youths who had perceived strong disapproval of marijuana use from their parents, whose parents often checked their homework, or who had frequently been commended by their parents were significantly less likely to have engaged in prescription opioid misuse in the past year (Sung, Richter, Vaughan, Johnson, & Thom, 2005). Positive parental style and close monitoring by	Bogenschneider, K., Wu, M., Raffaelli, M., & Tsay, J. (1998). Parent Influences on Adolescent Peer Orientation and Substance Use: The Interference of Parenting Practices and Values. *Child Development*. Dec 69(6). 1672. Newcomb, M. D. and M. Felix-Ortiz. (1992). Multiple protective and risk factors for drug use and abuse: Cross-sectional and prospective findings. *Journal Of Personality And Social Psychology, 63*(2), 280-296. Shillington, A. M., S. Lehman, et al. (2005). Parental monitoring: Can it continue to be protective among high-risk

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Risk Factor	Brief Findings	Literature (not exhaustive list)
	parents have proved to be protective factors for adolescent's use of substances (Stewart, 2002). Adolescents using prescription stimulants nonmedically reported less involvement in criminal behaviors, however, they still exhibited a number of serious risk factors, including accessing mental health treatment, sensation seeking behaviors, and high family conflict (Herman-Stahl, Krebs, Kroutil, & Heller, 2006). Common correlates of or risk factors for illicit drug abuse, such as low parental involvement and positive youth attitudes toward drugs, are also predictive of prescription opioid misuse (Sung et al, 2005). Research shows a reduction of paternal care perception in marijuana users and an even lower perception of care among poly-drug users when compared to an abstinent population. Reported maternal care perception was also significantly reduced in ''alcohol abusers'' and poly-drug users. (Gerra et al, 2004) Adolescents who are strongly bonded to parents are more likely to have behavior closely monitored. Parental monitoring makes substance use less likely because adolescents believe deviant behavior is more likely to be recognized and punished when parents closely monitor their activities. Close monitoring by parents also limits free time spent socializing with peers in unstructured settings, which reduces opportunities for deviance. A strong bond to school makes substance use less likely by establishing a stake in conformity. (Ford 2009)	adolescents? *Journal of Child & Adolescent Substance Abuse, 15*(1), 1-15. Stewart, C. (2002). Family factors of low-income African-American youth associated with substance use: An exploratory analysis. *Journal of Ethnicity in Substance Abuse, 1*(1), 97-111. Sung, H.-E., Richter, L., Vaughan, R., Johnson, P. B., & Thom, B. (2005). Nonmedical use of prescription opioids among teenagers in the United States: Trends and correlates. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine, 37*(1), 44-51. Friedman, A. S., S. Granick, et al. (1995). Gender differences in early life risk factors for substance use/abuse: A study of an African-American sample. *The American Journal Of Drug And Alcohol Abuse, 21*(4), 511-531. Gerra, G., L. Angioni, et al. (2004). Substance use among high-school students: Relationships with temperament, personality traits, and parental care perception. *Substance Use & Misuse, 39*(2), 345-367. Herman-Stahl, M., Krebs, C., Kroutil, L., & Heller, D. (2006). Risk and protective factors for nonmedical use of prescription stimulants and methamphetamine among adolescents. *Journal of Adolescent Health, 39*(3), 374-380. Rai A.A., Stanton B., Wu, Y., Li X., Galbraith, J., Cottrell, L., Pack, R., Harris, C., D'Alessandri. D., and Burns, J. (2003). Relative influences of perceived parental monitoring and perceived peer involvement on adolescent risk behaviors: An analysis of six cross-sectional data sets. *The Journal of Adolescent Health, 33*(2), 108-118.

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Risk Factor	Brief Findings	Literature (not exhaustive list)
		Nonmedical Prescription Drug Use Among Adolescents : The Influence of Bonds to Family and School *Youth Society* 2009 40: 336 Jason A. Ford
Low Perceived Risk of Harm	*Note: There is not a strong connection between perceived benefits and prescription drug misuse in the literature. It is mainly around being perceived as safer to use than street drugs, with some of the same effects.* What might explain the growing confidence in the safety of prescription drugs? Nowadays, it is nearly impossible to open a newspaper, turn on the television, or search the Internet without encountering an advertisement for a prescription medication. One effect has been to foster an image of prescription drugs as an integral and routine aspect of everyday life. Any adverse effects are relegated to the fine print of an advertisement or dispatched in a few seconds of rapid-fire speech (Friedman, 2006). Expectation of drug effects may be a key ingredient in the addictive potential of prescription drugs. A drug taken for a bona fide medical condition may be inherently less reinforcing than the same drug taken with the express purpose of intoxication or psychic enhancement. The increases in marketing of medications through media (especially television) may be related to changed attitudes toward ingestion of psychotherapeutic agents. Moreover, the fact that these drugs are considered "medication" and are endorsed by physicians may give a false sense of safety. It should also be noted that a key difference of the prescription drugs from other drugs of abuse is the explicit or implicit medical context of administration (Compton & Volkow, 2006). Beliefs about one's own control in the world and perceived future opportunities are also associated with drug use. Perceived harmfulness of drugs is also associated	Friedman, R. A. (2006). The changing face of teenage drug abuse--the trend toward prescription drugs. *New England Journal of Medicine, 354*(14), 1448-1450. Compton, W. M., & Volkow, N. D. (2006). Abuse of prescription drugs and the risk of addiction. *Drug & Alcohol Dependence, 83*(1), S4-S7. Dawkins, M. P. (1996). The social context of substance use among African American youth: Rural, urban and suburban comparisons. *Journal of Alcohol and Drug Education, 41*(3), 68-85. Félix-Ortiz, M. and M. D. Newcomb. (1999). Vulnerability for drug use among Latino adolescents. *Journal of Community Psychology, 27*(3), 257-280. Friedman, R. A. (2006). The changing face of teenage drug abuse--the trend toward prescription drugs. *New England Journal of Medicine, 354*(14), 1448-1450. Hawkins, D. J., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other substance problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, *112*(1), 64–105. Smith, G.M., & Fogg, C.P. (1978), Psychological predictors of early use, late use, and non-use of marijuana among teenage students. In D.B. Kandel (Ed.), *Longitudinal research on drug use: Empirical findings and methodological issues* (pp. 101-

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Risk Factor	Brief Findings	Literature (not exhaustive list)
	with low drug use. (Félix-Ortiz et al, 1999). Not only is nonmedical use of prescription drugs perceived as avoiding the high-risk lifestyle and stigma associated with the use of illegal drugs, but it is perceived as being safer overall. Prescription drugs are prepared by pharmaceutical companies and prescribed by physicians, and therefore the components and dosages are more predictable. Survey data indicate that ~50% of schoolchildren in grades 7–12 do not believe that there is a great risk in abusing prescription medicine, and ~30% believe that prescription pain relievers are not addictive. 4 When these drugs are used to enhance mental or physical performance, the potential adverse effects may be ignored. (Hernandez and Nelson 2010)	113). Washington, DC: Hemisphere-Wiley.