

Final Report

Improving Tennessee Health Care Providers Understanding
of Neonatal Abstinence Syndrome
Award #34347-46814

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Executive Summary

A survey instrument based on the Theory of Planned Behavior and the Tennessee Chronic Pain Guidelines regarding Neonatal Abstinence Syndrome (NAS) prevention behaviors was distributed to Primary Care Providers, Pain Management Clinic Directors, Buprenorphine Treatment Providers, and Community Pharmacists in East Tennessee. Study findings include:

- Over 75% and 85% of prescribers and pharmacists, respectively, indicated that they have a responsibility to prevent NAS and over 70% and 78% feel that substance use during pregnancy is a concern in their practice settings
- Only 12% and 48% of prescribers and pharmacists, respectively, felt the use of prescription opioids during pregnancy was adequately covered in their professional training
- Over 76% of prescribers always discuss the expectation that their patients inform them if they become or plan to become pregnant while taking opioids. However:
 - 17% of prescribers never discuss birth control when initiating opioids
 - 24% of prescribers never administer pregnancy tests before initiating opioids
 - 22% prescribers never recommend LARCs to their patients
- Whereas pharmacists routinely counsel on the prescriber indication for a prescription opioid and ask patients if they have questions about the medication, most additional NAS prevention behaviors are the exception rather than the norm
- One-half to three-fourths of community pharmacists never engage in NAS prevention behaviors, including inquiring about a patient's pregnancy status when dispensing a prescription opioid for greater than 7 days and communicating about contraception-related issues
- A large majority of prescribers and community pharmacists do not trust pain specialists and buprenorphine prescribers who practice in their area
- Only one-third of community pharmacists and approximately half of prescribers perceive evidence-based information about NAS prevention to be readily available to them
- Attitudes and self-efficacy scores commonly predict prescribers NAS prevention behavioral engagement, while attitudes and subjective norm beliefs commonly predict community pharmacists' NAS prevention behavioral engagement
- Providing prescribers and pharmacists with easily accessible, evidence-based information may be an important strategy to increase NAS prevention behaviors.

To the knowledge of the investigators, this is the first study to theoretically examine predictors of NAS prevention behavioral engagement. The results can be used to inform intervention development and support development of large-scale studies to better understand prescriber and pharmacist behaviors.

Introduction

As described in the project proposal, little is known about health care provider neonatal abstinence syndrome (NAS) prevention knowledge, attitudes, beliefs or behaviors. Since the time the proposal was developed, no additional literature has been published specific to the aforementioned NAS prevention domains. Previous studies exploring provider perceptions and behaviors regarding similar conditions, such as fetal alcohol spectrum disorders,¹⁻⁴ smoking cessation counseling,⁵ and substance use disorders in general⁶⁻⁸ note a need for increased engagement in primary prevention efforts. Indeed, the NAS epidemic in our State supports a need for informed primary prevention engagement. A recommendation put forth in recently developed clinical practice guidelines specific to substance use in pregnancy states, “all pregnant women and women of childbearing age should be screened periodically for alcohol, tobacco, and prescription and illicit drug use.”⁹ Yet, this screening is accompanied by multiple barriers (e.g., prescriber and dispenser discomfort, lack of time, lack of reimbursement) and thus does not consistently occur in practice.^{8,10} Recent recommendations put forth by pharmacy constituents suggest development of consistent criteria for identifying potential opioid misuse or abuse.¹¹ In the same way, consistent criteria could be developed and implemented across multiple health care settings to engage patients in primary prevention conversations specific to substance use in pregnancy and NAS prevention. To our knowledge, such an approach has not been explored.

When considering primary prevention of NAS - a particular point of emphasis in this RFA and one supported by Commissioner Dreyzehner - it is particularly pertinent to increase our understanding of knowledge, attitudes, beliefs, and behaviors of prescribers and dispensers intimately involved in “pre”-prenatal health care provision. Considering prescription opioids (POs) specifically, primary care prescribers (e.g., family medicine prescribers, including mid-level practitioners), primary care prescribers who have obtained appropriate credentials (i.e., DATA Waiver) to treat narcotic dependence, prescribers in state-registered pain management clinics, and community pharmacists involved in PO dispensing are uniquely positioned to engage in NAS primary prevention efforts. This project sought to inform the State’s understanding of Tennessee prescriber and dispenser knowledge, attitudes, beliefs, and behaviors specific to PO use in pregnancy and NAS prevention by conducting a methodologically rigorous, theoretically based survey of TN prescribers and dispensers in Northeast Tennessee (NE TN).

Specific aims of the project were:

1. To develop and administer a theory-based self-report questionnaire to explore primary care prescribers’, DATA-waivered prescribers’, pain management clinic directors’ and community pharmacists’ perceptions and behaviors specific to NAS prevention and substance use in pregnancy
2. To explore differences in perceptions and behaviors across prescriber/dispenser characteristics.
3. To evaluate the impact of a NAS primary prevention academic detailing intervention with primary care prescribers and DATA-waivered prescribers

METHODS

Survey Instrument Development

A survey instrument was developed by the investigators to assess prescriber and dispenser knowledge, attitudes, beliefs, and behaviors specific to NAS prevention and substance use in women of childbearing age. Instrument development was guided by the Theory of Planned Behavior^{12,13} and based on previous theoretically sound work by the investigators as well as literature regarding attitudes toward substance use disorders in pregnancy^{14,15} and knowledge, attitudes, and perceptions related to fetal alcohol spectrum disorders.¹⁶⁻²⁰ Importantly, the Tennessee Chronic Pain Guidelines and drafts thereof guided NAS prevention behavior item development. Fifteen NAS prevention behaviors were identified and incorporated into four survey instruments developed specific to family medicine prescribers, DATA-

waivered prescribers, pain management clinic directors, and community pharmacists. For each of the 15 NAS prevention behaviors, behavioral engagement was evaluated by considering the following scenario: “Given 10 female patients of childbearing age dispensed a prescription opioid for greater than 7 days, with how many of these patients would you expect to...” Whereas the prescriber and pharmacist instruments were distinct, the three prescriber instruments were nearly identical, with only minor differences included to capture demographic differences and discipline specific perceptions.

Developed instruments were pilot tested and face validated by five community pharmacists and five prescribers. All NAS prevention behaviors were evaluated for relevance and clarity by the health care providers. Multiple changes were made to the items to reflect pilot testing input, including omission of one behavior in each survey instrument, clarification of included behaviors, and increased focus on long-term (>7 days) treatment with prescription opioids. The revised instruments were pilot tested by one prescriber and pharmacist prior to large-scale administration.

Per Theory of Planned Behavior (TPB) questionnaire development guidelines, survey items were developed to evaluate attitudes, subjective norms, and perceived behavioral control beliefs specific to each of the 15 NAS prevention behaviors. All items were responded to using a 7-point scale. Response scale anchors varied to coincide with TPB constructs. In total, 4 items were developed to assess health care professional attitudes, 4 items to evaluate subjective norm beliefs, and 4 items to assess perceived behavioral control beliefs. In aggregate, including the evaluation of behavioral engagement, respondents were asked to make 13 self-reported judgments for 15 different NAS prevention behaviors (195 NAS prevention TPB items).

Items representing the attitude construct elicited respondents’ perceptions regarding behavioral engagement importance, pleasantness, utility, and benefit. Subjective norm items elicited perceptions regarding what others expect of health professionals, and what respondents perceived other health professionals to do. For example, respondents indicated whether most people who are important to them think that they 1= should not; 7=should engage in the 15 NAS prevention behaviors. Likewise, respondents expressed levels of agreement or disagreement with the statement that most health professionals like them engage in the behaviors. Perceived behavioral control items reflected confidence or self-efficacy beliefs regarding respondents’ ability to complete the behaviors as well as perceptions as to whether or not the decision to engage in the behaviors is completely up to them.

Three other groups of survey items were developed and included to capture 1) respondent demographic and practice setting characteristics (7-9 items); 2) general perceptions of NAS (13 items); and 3) perceptions on contraception appropriateness (9 items). All survey instruments are presented in Appendices A-D. Pilot study participants indicated the survey instrument took approximately 15-20 minutes to complete. The study was approved by the ETSU IRB prior to conduction.

Participants

Participant recruitment methodology differed across study cohorts and is described hereafter.

Primary Care Physicians. A directory of all licensed medical doctors and doctors of osteopathy was obtained from the Tennessee Health Professional Licensing Reports. From this report, the investigators developed a list of primary care physicians (PCPs) (i.e. specializing in family practice, general practice, or internal medicine) practicing full-time in Northeast Tennessee (NE TN) counties (Carter, Greene, Hawkins, Johnson, Sullivan, Unicoi, Washington). Physicians were removed from the list if their practice location was unlisted or listed as a hospital or urgent care. One hundred participants were randomly selected from the 285 eligible PCPs.

Mid-Level Practitioners. A directory of all licensed advanced practice nurses (APNs) was obtained from the Tennessee Health Professional Licensing Reports. From this report, the investigators developed a list of APNs practicing full-time in Northeast Tennessee (NE TN) counties (Carter, Greene, Hawkins, Johnson, Sullivan, Unicoi, Washington). APNs were removed from the list if their practice location was unlisted or

listed as a hospital or urgent care. One hundred participants were randomly selected from the 546 eligible APNs.

DATA-Waivered Physicians. A registry of physicians who obtain a DATA waiver and are thus eligible to treat addiction “in-office” is maintained by the Substance Abuse and Mental Health Services Administration (SAMHSA) (<http://buprenorphine.samhsa.gov/>). Using this directory, the investigators developed a list of registered DATA-waivered physicians stratified by NE TN county zip codes (Carter, Greene, Hawkins, Johnson, Sullivan, Unicoi, and Washington counties), cleaned the data for duplicate entries, and randomly selected 100 study participants from the 102 eligible DATA-waivered prescribers.

Pain Management Clinic Directors. The State of Tennessee maintains a directory of pain management clinic (PMC) directors. The investigators originally intended to recruit PMC directors in NE TN counties (Blount, Carter, Claiborne, Cocke, Grainger, Greene, Hamblen, Hancock, Hawkins, Jefferson, Johnson, Knox, Sevier, Sullivan, Unicoi, Union, Washington counties). However, PMC directors were commonly the director of more than one PMC. To elicit the perceptions of 100 unique PMC directors, the sampling frame was extended to all counties east of, and inclusive of, Macon, Trousdale, Smith, Dekalb, Cannon, Coffee, and Franklin counties. One hundred PMC directors were randomly selected from 106 PMC directors comprising the sampling frame.

Community Pharmacists. A directory of all licensed community pharmacists in Carter, Greene, Hawkins, Johnson, Sullivan, Unicoi, and Washington counties was obtained via a Tennessee’s Health Professions License Report. The directory was cleaned to exclude any license status other than “Active: Fully Licensed” (e.g., expired, suspended). Additionally, pharmacists were removed from the sampling frame if their practice location was listed as a non-community setting or if their practice location was unlisted. One hundred pharmacists were thereafter randomly selected from the 332 pharmacists who met inclusion criteria.

Survey Administration

Survey administration followed the gold standard Tailored Design Method.²¹ Four paper-based waves of recruitment took place between December 2014 and February 2015. We first sent a personalized postcard to participants notifying them that they would be receiving a survey packet in the coming week. The survey packet containing a cover letter, professionally developed survey instrument, and self-addressed stamped return envelope was sent one week later. All survey instruments were stamped with a unique identifier that allowed the investigators to remove respondents from subsequent recruitment waves. Approximately two weeks thereafter, a reminder postcard was sent encouraging them to complete the questionnaire if they had not already done so. A second and final survey packet was sent two weeks following the reminder notice.

After four recruitment waves, the response rate across all provider types ranged from 10% to 27%. We therefore requested a protocol modification from the ETSU IRB to make an additional recruitment attempt via a telephone contact. A telephone script was developed and approved by the IRB. Additionally, four provider specific web-based versions of the survey instruments were developed using Qualtrics. The link to the web-based instrument (e.g., pcp.nasstudy.com, pharmacist.nasstudy.com) was offered to all subjects during the fifth and final telephone contact. Telephone contacts occurred from April 2015 through May 2015. Given that phone numbers were missing from the licensing database for the majority of mid-level practitioners combined with the lack of response from this group, we chose not to attempt to contact these providers via telephone and removed this group from analyses.

Data Analysis

SPSS versions 20 and 21 were used for all statistical analyses. Survey data were maintained in SPSS data files and cleaned by the research team. Descriptive statistics were calculated for all survey

items. Normality was assessed for NAS prevention behaviors by examination of item histograms and the Shapiro-Wilk test of significance. Items representing TPB constructs (i.e., attitude, subjective norm, perceived behavioral control) were first examined for internal consistency reliability across each behavior. A Cronbach's alpha of greater than 0.6 was sought for each construct. Item/scale correlations were calculated to examine the correlation of each item with the rest of the items included in the TPB construct for specific behaviors. To balance gains in internal consistency and retention of instrument items, an item representing a construct was removed from the instrument if the construct's Cronbach's alpha increased as result of item exclusion, up to $\alpha=0.8$. If omission of an item resulted in an improved α , but the α was already 0.8 or greater, the item was retained. Importantly, each NAS prevention behavior and the items representing it were evaluated individually. Therefore, construct composition differed across behaviors.

After maximizing internal consistency reliability for each TPB construct and thereby determining the composition of each TPB construct for each behavior, attitude, subjective norm, and perceived behavioral control scores were calculated by averaging all representative items and dividing by the number of items representing each construct.

TPB construct scores and additional perceptions were examined across respondent demographic characteristics (e.g., gender, practice setting, years in practice). Linear regression techniques were employed to examine the extent to which TPB constructs predict engagement in NAS prevention behaviors. Statistical significance was established as $p<0.05$.

Methodological Deviations from Study Proposal

Specific Aim #3, evaluation of the impact of a NAS primary prevention academic detailing intervention with primary care prescribers and DATA-waivered prescribers, originally proposed in this project was not completed during the project period. At the time the proposal was written, interventions were not being conducted by the TN Department of Health. However, in the summer of 2014, Dr. Cynthia Thomas, Preventive Medicine and Public Health Physician with the Northeast Regional Health Office, began conducting NAS prevention interventions with prescribers in Northeast Tennessee. The investigators communicated closely with Dr. Thomas during the study period given mutual interests and mutual involvement in a regional NAS Taskforce developed by representatives from Niswonger Children's Hospital in Johnson City. Dr. Thomas developed and disseminated a NAS Toolkit and shared with us her experiences disseminating the Toolkit with regional prescribers. Given the duplicity in NE TN Department of Health activities and the proposed project activities, and difficulty in obtaining survey responses despite evidence-based recruitment approaches, we determined that conducting the academic detailing intervention and subsequent analysis would not have been fiscally responsible. We therefore did not use the \$10,000 allotted for academic detailing consulting fees for this portion of the project.

RESULTS

Prescriber Results

Response Rate and Demographic Characteristics

In order to increase the overall power, we combined all prescriber groups for analyses. Respondent demographics did not significantly differ among groups. A response rate of 15.1% (41/272) was obtained for prescribers. Thirteen were returned blank (i.e., participant ineligible to participate), 15 were sent to locations at which respondents were no longer employed. Respondent demographic characteristics are presented in Table 1.

NAS Prevention Behaviors

Descriptive statistics for NAS prevention behavior engagement are presented in Table 2. In general, wide variation was noted in the extent to which prescribers engage in behaviors that could be

considered NAS preventative. Of note, 78% of prescribers indicated that they always discuss the patient's risk of physical dependence and addiction to opioids when initiated, however only 63.4% of prescribers indicated they discuss the potential of a newborn's physical dependence and withdrawal to opioids and 17.5% indicated they never discussed this potential. Only 46.3% of prescribers indicated they always discuss the results of a controlled substance monitoring database query with patients. Whereas over 76% of prescribers indicated they always discuss the expectation that patients inform them if they become or plan to become pregnant, over 24% indicated they never administer a pregnancy test prior to the initiation of opioid therapy and over 17% indicated they never discuss patients' pregnancy status at each visit if on long-term opioids. While 63.4% of prescribers indicated they always discuss a birth control plan when opioids are initiated, 22% indicated they never recommend long-acting reversible contraception (LARC) to patients on opioids and 36.6% indicated they never direct patients to community resources where they could obtain LARC.

Gender differences were noted in two NAS prevention behaviors. Male prescribers reported discussing the risks of opioid use during pregnancy with significantly more patients than female prescribers (mean = 9.27 vs. 4.50; $p=0.011$). Additionally, male prescribers reported discussing the potential of physical dependence to and withdrawal from opioids in a newborn with patients more so than female prescribers (mean=8.30 vs. 4.60; $p=0.037$). PCPs were less likely than Pain Management Clinic Directors to report discussing the results of a controlled substances monitoring database query with patients (mean =5.80 vs 9.00; $p=0.004$). PCPs were also less likely to discuss the expectation that the patient informs them if she becomes or plans to become pregnant than Pain Management Clinic Directors or DATA-waivered physicians (mean = 6.80 vs. 9.29 vs 9.85; $p=0.011$). No other significant differences between prescriber groups were found.

Attitudes

Internal consistency reliability analyses indicated that, for 4 of the 15 behaviors, omission of one or more of the four items representing the attitude construct resulted in significant improvement in reliability. Items were therefore removed from behavior specific attitude scales based on internal consistency analyses. The overall attitude construct had high internal consistency (Cronbach's $\alpha=0.95$). Resulting attitude scores across NAS prevention behaviors are presented in Table 3. Overall, respondent attitudes toward all NAS prevention behaviors were positive (mean range 5.48 – 6.21), with higher scores representing more positive attitudes.

Subjective Norms

Internal consistency reliability analyses revealed the behavior "obtaining a patient's personal history of drug abuse prior to initiating therapy" did not produce acceptable internal consistency when more than one item represented subjective norm beliefs. Of the remaining items, analyses indicated that, for 9 of the 15 behaviors, omission of one or more of the four items representing the subjective norms construct resulted in significant improvement in reliability. Resulting subjective norm scores across NAS prevention behaviors are presented in Table 4. Overall, respondent subjective norm scores were somewhat positive with a minimum score (mean = 4.43) reported for discussing a birth control plan when opioids are initiated and a maximum score (mean = 6.77) reported for discussing the risks of opioid use during pregnancy. Higher scores represent greater perception of normative expectations for engaging in the behavior.

Perceived Behavioral Control

Internal consistency reliability analyses revealed poor reliability for all items when all items developed to represent perceived behavioral control were included in the analyses. Removing the control belief "whether or not I do each of the following is entirely up to me" consistently maximized internal consistency. Therefore investigators chose to calculate self-efficacy belief scores and examine the items designed to assess perceptions of control and ease of behavioral engagement independently. Self-efficacy

belief scores are presented in Table 5. Internal consistency reliability analyses revealed the behavior “conduct a drug abuse risk assessment prior to prescribing an opioid medication” did not produce acceptable internal consistency when more than one item represented self-efficacy beliefs. The remaining scores were above the response scale midpoint and ranged from a minimum score (mean = 5.91) reported for directing patients to community resources through which long-acting, reversible contraception (LARC) can be accessed and a maximum score (mean = 6.81) for discussing your concern with a patient regarding her drug-taking behaviors when warranted. Control belief descriptive statistics are presented in Table 6. The majority of respondents agreed or strongly agreed with all items.

TPB Analyses across Prescriber Characteristics

Gender. Few significant differences were noted between genders. Male prescribers had significantly more positive attitudes than female prescribers toward discussing the patient’s risk of physical dependence and addiction to opioids (mean = 5.85 vs. 5.02; $p=0.028$), administering a pregnancy test prior to initiating opioids (mean = 6.44 vs. 5.55; $p=0.028$), and discussing their concern with a patient regarding her drug-taking behaviors when warranted (mean = 5.74 vs. 4.98; $p=0.022$). No significant gender differences were noted regarding subjective norm beliefs or self-efficacy beliefs.

Age. Few significant differences were noted across age categories. Attitudes toward recommending LARC to patients on opioids and directing patients to community resources through which LARC could be obtained were more positive among prescribers over 61 ($p<.05$). No significant differences were noted across age groups relative to subjective norm beliefs or self-efficacy beliefs.

Years in Practice. There were moderate positive correlations between years in practice and attitudes related to NAS prevention behaviors including discussing the patient’s risk of physical dependence and addiction to opioids ($p=0.026$), discussing a birth control plan when opioids are initiated ($p=0.024$), recommending LARC to patients on opioids ($p=0.046$), directing patients to community resources through which LARC could be obtained ($p=0.039$), discussing concerns with patients regarding their drug-taking behaviors when warranted ($p=0.01$), and verbally referring a patient for drug abuse treatment when warranted ($p=0.049$). Additionally, moderate positive correlations were noted between years in practice and subjective norm beliefs related to NAS prevention behaviors including discussing the risks of opioid use during pregnancy ($p=0.017$) and discussing the patient’s pregnancy status at each visit ($p=0.021$). No significant correlations were found between years in practice and self-efficacy scores.

TPB Linear Regression Analysis

Multiple regression analysis revealed statistically significant relationships between TPB constructs and seven NAS prevention behaviors (Table 7). Attitudes and self-efficacy beliefs tended to best predict engagement in NAS prevention behaviors. Subjective norm beliefs were predictive of one behavior. Assuming a medium effect size ($f^2 = 0.15$), the power to explain the models is approximately 43% given the sample size.

General NAS Perceptions

A majority of respondents indicated agreement that they have a responsibility to prevent NAS, and that substance use during pregnancy is a concern in their practice settings (Table 8). Only 12.2% of respondents felt that the use of prescription opioids during pregnancy was adequately covered in their medical training. Approximately two-thirds of respondents indicated evidence-based information about substance use during pregnancy is readily available to them, and more than half (56%) indicated the same for NAS-specific information. A majority of respondents (68%) had participated in continuing education programming about substance use during pregnancy and 59% had participated in NAS prevention continuing education. Approximately one-third of prescribers expressed agreement that they

trust pain specialists and buprenorphine prescribers in their area (36.6% and 34.2%, respectively). In regards to perceptions of medication-assisted treatment, a majority of respondents indicated methadone and buprenorphine can result in withdrawal symptoms in newborns (80.5% each). When asked four questions specific to supervised replacement therapy in pregnant patients, aggregated attitudes indicated a slight negative attitude (mean = 3.89; SD = 0.54) on a 1-7 scale. Respondents estimate, on average, that 31.6% of newborns diagnosed with NAS in Tennessee are born to mothers who are undergoing supervised replacement therapy.

On a 1=very inappropriate; 7=very appropriate scale, prescribers evaluated implants, injectable depots, Intrauterine devices (IUDs), oral contraceptives, and the patch as appropriate for female patients of childbearing age prescribed one or more opioid medications for a chronic condition (Table 9). Cervical caps, diaphragms, female condoms, and the sponge were rated as inappropriate.

Pharmacist Results

Response Rate and Demographic Characteristics

A response rate of 43.66% (31/71) was obtained for community pharmacists. Five questionnaires were returned blank (i.e., participant ineligible to participate) and 24 were sent to locations at which respondents were no longer employed (confirmed by telephone call during wave 5). Of the pharmacists who completed the questionnaire, 28 indicated they work in a community pharmacy setting 8 or more hours per month. Respondent demographic characteristics are presented in Table 10. Respondent gender and practice setting closely resembled the distribution of gender and practice setting of the study sample.

NAS Prevention Behaviors

Descriptive statistics for NAS prevention behavior engagement are presented in Table 11. In general, wide variation was noted in the extent to which pharmacists engage in behaviors that could be considered NAS preventative. Whereas a large majority (96.3%) of respondents indicated they would always ask if the patient has questions about the prescribed medications, over 70% of respondents indicated they would never document the type of contraception to be used while taking the prescription opioid.

Although no significant differences in behaviors were noted across gender, female respondents tended to indicate more engagement in NAS prevention behaviors than male respondents. Importantly, assuming a large effect size ($d=0.7$), the power to detect a difference in means across gender is approximately 40% given the sample size. Across practice setting, one statistically significant difference was noted for the extent to which respondents discuss the risks of prescription opioid use during pregnancy. Respondents in independent pharmacy settings engaged in this behavior significantly more so than respondents in supermarket and discount store settings (mean 7.0 vs. 1.8; $p=0.036$). No significant differences were observed across respondent age or hours worked per week in the community pharmacy setting.

Attitudes

Internal consistency reliability analyses indicated that, for 10 of the 15 behaviors, omission of one or more of the four items representing the attitude construct resulted in significant improvement in reliability. Items were therefore removed from behavior specific attitude scales based on internal consistency analyses. Resulting attitude scores across NAS prevention behaviors are presented in Table 12. Overall, respondent attitudes toward all NAS prevention behaviors were positive (mean range 5.15 – 6.46), with higher scores representing more positive attitudes.

Subjective Norms

Internal consistency reliability analyses revealed two behaviors (counseling on the indication of the prescribed medication, discussing the risk of physical dependence and addiction to opioids) that did

not produce acceptable internal consistency when more than one item represented subjective norm beliefs. For the other behaviors, variability was noted across reliability analyses; therefore items were removed from behavior specific subjective norm scales to maximize subjective norm internal consistency reliability. Resulting subjective norm scores across NAS prevention behaviors are presented in Table 13. Overall, respondent subjective norm belief scores hovered around the scale midpoint (i.e., neutral), with a minimum score (mean = 3.29) reported for directing patients to community resources through which long-acting, reversible contraception can be accessed and a maximum score (mean = 6.7) noted for asking the patient if she has questions about the prescribed medication. Again, higher scores represent greater perception of normative expectations for engaging in the behavior.

Perceived Behavioral Control

Internal consistency reliability analyses revealed poor reliability for all items when all items developed to represent perceived behavioral control were included in the analyses. Two items representing self-efficacy beliefs (confidence in one's ability to... and possession of the skills necessary to...) consistently maximized internal consistency reliability. Whereas inclusion of fewer than three items to represent a construct is not ideal, the investigators chose to calculate self-efficacy belief scores and examine the items designed to assess perceptions of control and ease of behavioral engagement independently. Self-efficacy belief scores are presented in Table 14. All scores were above the response scale midpoint and ranged from a mean of 4.6 (directing patients to community resources through which long-acting, reversible contraception can be accessed) to 6.9 (asking the patient if she has questions about the prescribed medication). Control belief (i.e., Whether or not I do each of the following is entirely up to me) descriptive statistics are presented in Table 15. Median scores ranged from 3.5 (counsel on the indication for the prescribed medication, ask the patient if she has questions about the prescribed medication) to 6 (document the type of contraception to be used while taking the prescribed opioid, discuss concern with a patient regarding her drug-taking behavior when warranted).

TPB Analyses across Pharmacist and Practice Setting Characteristics

Gender. Differences in attitudes toward NAS prevention behaviors were noted across gender, in particular for attitudes. Statistically higher attitude scores were noted for 10 behaviors, with female pharmacists reporting consistently higher scores ($p < 0.05$). Female respondents also reported significantly higher subjective norm beliefs specific to asking a patient if she has questions about the prescribed medication ($p = 0.005$), and higher self-efficacy beliefs regarding counseling on the indication for the prescribed medication ($p = 0.02$) and communicating with the prescriber's office to verify the prescription opioid is appropriate therapy ($p = 0.02$).

Age. Few significant differences were noted across age category. Attitudes toward documenting the type of contraception to be used while taking a prescription opioid and discussing the need to notify the prescriber if the patient becomes, or plans to become, pregnant were higher among 45-60 year old respondents as compared to older respondents ($p = 0.02$; $p = 0.03$). Pharmacists younger than 30 years of age and those 30-44 reported significantly higher self-efficacy beliefs regarding their ability to ask a patient about pregnancy status than pharmacists 61 years of age or older ($p = 0.04$; $p = 0.03$). Respondents 30 to 44 years of age agreed to a greater extent than all other aged respondents that whether or not they choose to verbally refer a patient for drug abuse treatment when warranted was up to them ($p < 0.05$).

Practice Setting. A few differences in NAS prevention behavior attitudes and subjective norm beliefs were noted across practice setting characteristics. Specifically, respondents in chain and independent pharmacy settings reported more favorable attitudes toward documenting pregnancy status in the patient's medication profile ($p = 0.02$) and conducting risk assessments or drug abuse screenings prior to dispensing prescription opioids ($p = 0.04$). Respondents in independent pharmacies reported more

favorable attitudes toward conducting a controlled substance monitoring database query prior to dispensing ($p=0.03$) and directing patients to community resources through which LARC can be accessed ($p=0.04$) as compared to pharmacists in supermarket/discount store settings.

Hours Worked per Week. Hour categories were constricted to 40 or fewer hours per week and more than 40 hours per week. No differences were noted across any TPB construct.

Years in Practice. Moderate negative correlations between years in practice and self-efficacy beliefs regarding counseling on the indication for the prescribed medication ($p=0.04$), asking about pregnancy status ($p=0.002$), documenting pregnancy status in the patient's medication profile ($p=0.005$), discussing the risks of prescription opioid use during pregnancy ($p=0.032$), discussing the risks of physical dependence and addiction to opioids ($p=0.019$), and discussing the need to notify the prescriber if the patient becomes, or plans to become, pregnant ($p=0.046$).

TPB Linear Regression Analysis

Multiple regression analysis revealed statistically significant relationships between TPB constructs and eight NAS prevention behaviors (Table 16). Attitudes and subjective norm beliefs tended to best predict engagement in NAS prevention behaviors. Self-efficacy beliefs and control beliefs were significant predictors for 3 behaviors. Given the small sample size, and limited power (approximately 25% power assuming effect size = 0.15, $\alpha = 0.05$, and a sample size of 26), regression output should be interpreted with caution.

General NAS Perceptions

A majority of respondents indicated agreement that they have a responsibility to prevent NAS, and that substance use during pregnancy is a concern in their practice settings (Table 17). Nearly half (48.1%) of respondents felt that they felt the use of prescription opioids during pregnancy was adequately covered in their pharmacy training. Approximately 60% of respondents indicated evidence-based information about substance use during pregnancy is readily available to them, and one-third indicated the same for NAS-specific information. About 15% of respondents had participated in continuing education programming about substance use during pregnancy and 11% had participated in NAS prevention continuing education. Few pharmacists expressed agreement that they trust pain specialists and buprenorphine prescribers in their area (14.8% and 3.7%, respectively). In regards to perceptions of medication-assisted treatment, a majority of respondents indicated methadone and buprenorphine can result in withdrawal symptoms in newborns (88.9% and 85.2%, respectively). When asked four questions specific to supervised replacement therapy in pregnant patients, aggregated attitudes were neutral (mean = 4.11; SD = 1.88) on a 1-7 scale. Respondents estimate, on average, that 45.28% of newborns diagnosed with NAS in Tennessee are born to mothers who are undergoing supervised replacement therapy.

On a 1=very inappropriate; 7=very appropriate scale, pharmacists' evaluations of contraception appropriateness for female patients of childbearing age prescribed one or more opioid medications for a chronic condition ranged from a median of 2 for the sponge to 7 for implants and injectable depots (Table 18). Intrauterine devices (IUDs), oral contraceptives, and hormone patches were also considered appropriate by respondents (median = 6).

DISCUSSION

Despite rapidly increasing rates of NAS across the Southeastern region of the country, little is known about health providers' perceptions and behaviors specific to NAS prevention and substance use in pregnancy. This study is the first to explore Tennessee health providers' attitudes, beliefs, and behaviors regarding NAS prevention.

Prescribers

General findings

In general, prescriber engagement in NAS prevention behaviors has significant room for improvement, especially in the area of unintended pregnancy prevention and appropriate contraception recommendations. Although most prescribers discuss the expectation that their patients inform them if they become or plan to become pregnant while taking opioids, many reported never administering pregnancy tests before initiating opioids or routinely recommending LARCs to their patients. Prescribers generally recognized LARCs as appropriate for women of childbearing age prescribed opioids; however they also rated oral contraceptives and the patch as appropriate. The Tennessee Chronic Pain Guidelines state providers recommend reliable contraception such as LARCs upon the initiation of opioid therapy. Despite a majority of prescribers indicating they always discuss the risks of opioid use during pregnancy with their patients and the risk of physical dependence and addiction to opioids when initiated, fewer prescribers indicated they discussed the risks of opioid use on newborns.

Prescribers indicated they felt they have a responsibility to prevent NAS, and that substance use during pregnancy is a concern in their practice settings, but most felt they were not adequately prepared by their medical training in the use of prescription opioids during pregnancy. Only half indicated evidence based information about their role in NAS prevention is readily available to them, despite relatively high attendance to continuing education programs aimed at substance use in pregnancy and NAS. Providing prescribers with easily accessible, evidence-based information may be an important strategy to increase NAS prevention behaviors. Additionally, many prescribers indicated that they did not trust pain specialists and buprenorphine prescribers in their area and had a neutral or negative view of supervised replacement therapy in pregnant patients. Prescribers underestimated the rate of newborns diagnosed with NAS in Tennessee who are born to mothers undergoing supervised replacement therapy by approximately 24%. The lack of trust in treatment providers and skepticism surrounding supervised replacement therapy highlights the divisive nature of this therapy.

TPB-specific findings

Overall, prescribers had positive attitudes, normative expectations, and self-efficacy scores toward all NAS prevention behaviors. Slightly lower subjective norm scores and self-efficacy scores were reported for behaviors related to discussing birth control and LARCs, indicating that respondents felt less pressure to do so as well as not having the confidence and skills to engage in these behaviors. Older prescribers and those who had been in practice longer had more positive attitudes regarding discussing birth control and LARCs, although no subjective norm or self-efficacy differences were seen for these groups. Multiple regression indicated that attitudes toward recommending LARCs predicted engagement in this behavior. The prescriber's attitude also predicted discussing the patient's pregnancy status at each visit if on long-term opioids. Self-efficacy scores predicted five of the NAS prevention behaviors, including discussing the patient's risk of physical dependence and addiction, documenting contraception, discussing the expectation that the patient informs them if they become or plan to become pregnant, obtaining a personal history of drug abuse, and conducting a drug abuse risk assessment. Based on these findings, the investigators recommend educational interventions specifically aimed at improving attitudes toward and confidence and skills in engaging in these behaviors.

Pharmacists

General findings

In general, pharmacists' engagement in NAS prevention behaviors has significant room for improvement. As perceivably the most accessible health care professionals in many communities, community pharmacists are uniquely positioned to assist prescribers in NAS prevention efforts. Our

findings indicate current engagement levels are limited for those activities that could be interpreted as outside of the routine community pharmacy activities. Overall, given the scenario in the survey instrument, pharmacists engaged with more than half of their patients for 5 of 15 NAS prevention behaviors. Despite over 85% of respondents agreeing that they have a responsibility to prevent NAS and a similar percent agreeing that substance use during pregnancy is a concern in their practice settings, behavioral engagement was lacking.

A majority of pharmacists did not agree that evidence based information about their role in NAS prevention is readily available to them. This is perhaps one means by which pharmacist engagement could be increased, especially through CE credit granting continuing education. Interestingly, very few pharmacists indicated they trust pain specialists and buprenorphine prescribers in their area. This is an area ripe for further study, as both cohorts are intimately involved in medication distribution. Combined with a neutral attitude toward medication-assisted therapy, the researchers perceive significant opportunity to improve interprofessional relations and improve patient care in the process.

TPB-specific findings

Importantly, and as was the case with prescribers, pharmacists' attitudes, subjective norm beliefs, and perceived behavioral control beliefs varied with the behavior of interest. Overall, attitudes were positive, indicating that focusing interventions on this construct may not improve behavioral engagement substantially. Subjective norm beliefs varied significantly, with several negative and neutral beliefs noted. This was particularly the case when engaging pharmacists in LARC conversations. Educational activities, geographically specific educational materials, or incentives could perhaps alter the extent to which pharmacists engage in these activities. Based on responses from our participating pharmacists, subjective norm beliefs align with actual LARC behavioral engagement.

Self-efficacy beliefs were generally high for pharmacists. However, improving self-efficacy beliefs for several behaviors would likely increase behavioral engagement. Regression analyses, while cautiously interpreted, reveal the variation in the significant predictors of NAS prevention behavioral engagement. Whereas attitudes and subjective norms predicted 8 prevention behaviors, self-efficacy beliefs were also significant predictors for some items. The wide variation perhaps points to the individual nature of prevention behaviors. Interventions to increase behavioral engagement may need to be targeted at individual behaviors and may not transfer to other related NAS prevention behaviors.

Limitations

There were several limitations to the current study. Although the investigators followed an evidence-based approach to sample selection and survey methodology, the response rates were relatively low, particularly for prescribers. Health care professionals, prescribers in particular, are difficult to reach for purposes of conducting survey-based research. We added an additional attempt to contact providers via the telephone, but had little success in reaching participants. An incentive may have increased the response rate in our study. Additionally, inconsistencies may be present in reporting practice addresses and a delay in information updates to the Tennessee Health Professionals Licensing database, as we had to remove several potential participants from our study because they were no longer employed at the address on file with the Board of Pharmacy and Board of Medical Examiners. Study variables were limited to self-reported demographics and TPB constructs. Additional factors may influence NAS prevention behaviors which were beyond the scope of this study. Several prescribers returned surveys indicating that they did not prescribe opioids at all. Finally, our study was limited by the fact that several NAS-specific interventions and awareness campaigns were implemented around the time of our study. It's possible that potential participants had been inundated by information and education regarding NAS.

Future Research

The investigators plan to work with Dr. Thomas to update the NAS Toolkit based upon the results of this study. Future research could include analyzing the utility and impact of the Toolkit. The Theory of Planned Behavior is a powerful theoretical foundation on which interventions can be built. Given the small sample size in our study, replication is warranted with a larger sample of prescribers and dispensers to better understand and statistically model the predictors of NAS prevention behaviors. We do plan to consult a statistical expert at ETSU to determine how best to use the obtained data to inform behavior engagement from a modeling perspective. Finally, research is warranted to evaluate the impact, both short term and long term, of interventions developed to improve prevention engagement, including Tennessee Department of Health statewide and regional efforts.

Research Dissemination

Using preliminary data specifically for pharmacists, one poster was presented by 2nd and 3rd professional year pharmacy students at the Appalachian Student Research Forum on April 9, 2015. The presenter received a third place award out of many health professions posters. The poster is included in Appendix E.

Despite the small sample size, the investigators plan to develop a minimum of one manuscript for publication in a peer-reviewed journal such as *Health Education & Behavior* or *Patient Education and Counseling*. Additionally, a minimum of two abstracts will be submitted to national meetings for oral or poster presentation. The authors intend to involve pharmacy students in the manuscript writing process. Additional funding may be sought to replicate this study, or portions thereof, with a nationally representative sample of prescribers and pharmacists.

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Table 1. Prescriber demographics (N=41).

Variable	Numeric Value
Gender, No. (%)	
Female	10 (24.4)
Male	31 (75.6)
Age, No. (%)	
<30	0 (0)
30-44	8 (19.5)
45-60	21 (51.2)
>60	12 (29.3)
Prescriber group, No. (%)	
PCPs	11 (26.8)
DATA-Waivered Physicians	13 (31.7)
Pain Management Clinic Directors	17 (41.5)
Primary medical specialty, No. (%)	
Addiction Medicine	2 (4.9)
Advanced Practice Nurse	2 (4.9)
Anesthesiology	4 (9.8)
Emergency Medicine	2 (4.9)
Family Medicine	16 (39.0)
Internal Medicine	6 (14.6)
Neurology	3 (7.3)
Physical Medicine and Rehabilitation	3 (7.3)
Other*	3 (7.3)
Board certified in pain medicine, No. (%)	7 (17.1)
Board certified in addiction medicine, No. (%)	6 (14.6)
Years in practice, Mean (SD)	25.9 (11.3)

SD=standard deviation

*Other specialties: ENT, Hematology/Oncology, Psychiatry

Table 2. NAS prevention behavior descriptive statistics – Prescribers (N=41)^a

Behavior	Mean (SD)	Median (IQR)
Discuss the risks of opioid use during pregnancy	8.08 (3.60)	10 (7.5-10)
Discuss the patient’s risk of physical dependence and addiction to opioids	9.46 (1.55)	10 (10-10)
Discuss the potential of physical dependence to and withdrawal from opioids in a newborn	7.38 (4.08)	10 (4.25-10)
Discuss the results of a controlled substance monitoring database query with the patient	7.57 (3.09)	10 (5-10)
Discuss a birth control plan when opioids are initiated	7.28 (4.06)	10 (3.25-10)
Recommend long-acting, reversible contraception (LARC) to patients on opioids	5.49 (4.16)	5.50 (.75-10)
Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed	4.59 (4.37)	5 (0-10)
Document the type of contraception used by the patient	7.65 (3.86)	10 (5-10)
Discuss the patient’s pregnancy status at each visit if on long-term opioids	7.27 (3.83)	10 (5-10)
Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant	8.85 (2.62)	10 (10-10)
Administer a pregnancy test prior to the initiation of opioid therapy	6.38 (4.36)	10 (0-10)
Obtain a patient’s personal history of drug abuse prior to initiating therapy	9.63 (1.28)	10 (10-10)
Conduct a drug abuse risk assessment prior to prescribing an opioid medication	9.03 (2.04)	10 (10-10)
Discuss your concern with a patient regarding her drug-taking behaviors when warranted	9.51 (1.38)	10 (10-10)
Verbally refer a patient for drug abuse treatment when warranted	9.05 (2.71)	10 (10-10)

^aPrescribers were asked to respond to the following scenario: “Given 10 female patients of childbearing age prescribed a prescription opioid for greater than 7 days, with how many of these patients would you typically... “

Table 3. NAS prevention behavior attitude scores – Prescribers (N=41)^a

Behavior	Mean (SD)	Cronbach's α
Discuss the risks of opioid use during pregnancy	5.60 (1.09)	.60
Discuss the patient's risk of physical dependence and addiction to opioids	5.65 (1.06)	.61
Discuss the potential of physical dependence to and withdrawal from opioids in a newborn	6.17 (0.91)	.61
Discuss the results of a controlled substance monitoring database query with the patient	5.52 (1.02)	.73
Discuss a birth control plan when opioids are initiated	5.78 (1.05)	.76
Recommend long-acting, reversible contraception (LARC) to patients on opioids	5.73 (1.21)	.88
Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed	5.75 (1.14)	.86
Document the type of contraception used by the patient	6.03 (0.90)	.75
Discuss the patient's pregnancy status at each visit if on long-term opioids	6.14 (0.94)	.79
Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant	6.21 (0.92)	.82
Administer a pregnancy test prior to the initiation of opioid therapy	6.20 (1.11)	.77
Obtain a patient's personal history of drug abuse prior to initiating therapy	5.49 (1.22)	.72
Conduct a drug abuse risk assessment prior to prescribing an opioid medication	5.79 (0.97)	.74
Discuss your concern with a patient regarding her drug-taking behaviors when warranted	5.54 (0.92)	.66
Verbally refer a patient for drug abuse treatment when warranted	5.48 (0.88)	.56

^aAttitude score range = 1 – 7. Higher scores reflect more positive attitudes toward behaviors.

Table 4. NAS prevention behavior subjective norm scores – Prescribers (N=41)^a

Behavior	Mean (SD)	Cronbach's α
Discuss the risks of opioid use during pregnancy	6.77 (0.58)	.89
Discuss the patient's risk of physical dependence and addiction to opioids	5.22 (1.65)	.59
Discuss the potential of physical dependence to and withdrawal from opioids in a newborn	5.88 (1.12)	.61
Discuss the results of a controlled substance monitoring database query with the patient	5.59 (1.06)	.60
Discuss a birth control plan when opioids are initiated	4.43 (1.72)	.58
Recommend long-acting, reversible contraception (LARC) to patients on opioids	5.85 (1.41)	.85
Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed	4.47 (1.79)	.70
Document the type of contraception used by the patient	5.45 (1.15)	.62
Discuss the patient's pregnancy status at each visit if on long-term opioids	5.28 (1.17)	.67
Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant	6.62 (0.87)	.78
Administer a pregnancy test prior to the initiation of opioid therapy	5.41 (1.37)	.68
Obtain a patient's personal history of drug abuse prior to initiating therapy	N/A	N/A
Conduct a drug abuse risk assessment prior to prescribing an opioid medication	5.33 (1.74)	.60
Discuss your concern with a patient regarding her drug-taking behaviors when warranted	5.30 (1.75)	.58
Verbally refer a patient for drug abuse treatment when warranted	5.16 (1.82)	.63

^aSubjective norm score range = 1 – 7. Higher scores reflect normative beliefs that promote behavioral engagement.

Table 5. NAS prevention behaviors self-efficacy scores – Prescribers (N=41)^a

Behavior	Mean (SD)	Cronbach's α
Discuss the risks of opioid use during pregnancy	6.72 (1.00)	.98
Discuss the patient's risk of physical dependence and addiction to opioids	6.75 (1.00)	.99
Discuss the potential of physical dependence to and withdrawal from opioids in a newborn	6.68 (1.01)	.93
Discuss the results of a controlled substance monitoring database query with the patient	6.67 (1.09)	.97
Discuss a birth control plan when opioids are initiated	6.57 (1.15)	.98
Recommend long-acting, reversible contraception (LARC) to patients on opioids	5.97 (1.70)	.95
Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed	5.91 (1.65)	.94
Document the type of contraception used by the patient	6.67 (0.83)	.66
Discuss the patient's pregnancy status at each visit if on long-term opioids	6.62 (0.93)	.77
Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant	6.78 (0.84)	.95
Administer a pregnancy test prior to the initiation of opioid therapy	6.51 (1.06)	.72
Obtain a patient's personal history of drug abuse prior to initiating therapy	6.78 (0.74)	.75
Conduct a drug abuse risk assessment prior to prescribing an opioid medication	N/A	N/A
Discuss your concern with a patient regarding her drug-taking behaviors when warranted	6.81 (0.68)	.69
Verbally refer a patient for drug abuse treatment when warranted	6.76 (0.81)	.90

^aSelf-efficacy score range = 1 – 7. Higher scores reflect higher self-efficacy beliefs.

Table 6. Items representing prescriber control beliefs for NAS behaviors.^a

Behavior	Response frequency, N (%)						Strongly Agree	Median (IQR)
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree		
Discuss the risks of opioid use during pregnancy	6 (14.6)	2 (4.9)	1 (2.4)	7 (17.1)	1 (2.4)	1 (2.4)	19 (46.3)	7 (3.5-7)
Discuss the patient's risk of physical dependence and addiction to opioids	5 (12.2)	2 (4.9)	2 (4.9)	6 (14.6)	0	2 (4.9)	19 (46.3)	7 (3.25-7)
Discuss the potential of physical dependence to and withdrawal from opioids in a newborn	4 (9.8)	2 (4.9)	1 (2.4)	8 (19.5)	0	2 (4.9)	20 (48.8)	7 (4-7)
Discuss the results of a controlled substance monitoring database query with the patient	3 (7.3)	1 (2.4)	2 (4.9)	5 (12.2)	2 (4.9)	4 (9.8)	20 (48.8)	7 (4-7)
Discuss a birth control plan when opioids are initiated	5 (12.2)	0	1 (2.4)	7 (17.1)	2 (4.9)	4 (9.8)	17 (41.5)	6 (4-7)
Recommend long-acting, reversible contraception (LARC) to patients on opioids	2 (4.9)	2 (4.9)	1 (2.4)	8 (19.5)	4 (9.8)	3 (7.3)	17 (41.5)	6 (4-7)
Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed	3 (7.3)	2 (4.9)	1 (2.4)	8 (19.5)	3 (7.3)	3 (7.3)	17 (41.5)	6 (4-7)
Document the type of contraception used by the patient	4 (9.8)	3 (7.3)	1 (2.4)	7 (17.1)	2 (4.9)	2 (4.9)	18 (43.9)	6 (4-7)
Discuss the patient's pregnancy status at each visit if on long-term opioids	4 (9.8)	1 (2.4)	3 (7.3)	9 (22.0)	1 (2.4)	3 (7.3)	16 (39.0)	6 (4-7)
Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant	5 (12.2)	2 (4.9)	1 (2.4)	5 (12.2)	1 (2.4)	4 (9.8)	19 (46.3)	7 (4-7)
Administer a pregnancy test prior to the initiation of opioid therapy	5 (12.2)	2 (4.9)	1 (2.4)	10 (24.4)	1 (2.4)	2 (4.9)	16 (39.0)	5 (4-7)
Obtain a patient's personal history of drug abuse prior to initiating therapy	6 (14.6)	2 (4.9)	1 (2.4)	5 (12.2)	4 (9.8)	1 (2.4)	18 (43.9)	6 (3.5-7)
Conduct a drug abuse risk assessment prior to prescribing an opioid medication	6 (14.6)	2 (4.9)	1 (2.4)	5 (12.2)	2 (4.9)	2 (4.9)	19 (46.3)	7 (3.5-7)
Discuss your concern with a patient regarding her drug-taking behaviors when warranted	5 (12.2)	1 (2.4)	2 (4.9)	6 (14.6)	1 (2.4)	3 (7.3)	19 (46.3)	7 (4-7)
Verbally refer a patient for drug abuse treatment when warranted	7 (17.1)	2 (4.9)	1 (2.4)	4 (9.8)	1 (2.4)	3 (7.3)	19 (46.3)	7 (2.5-7)

^aSurvey item: "Whether or not I do each of the following is entirely up to me"

Table 7. Linear regression analysis output for NAS prevention behaviors - Prescribers.

Behavior/Significant Construct	Unstandardized coefficient	95% CI	p-value
Discuss the risks of opioid use during pregnancy			0.095
Discuss the patient's risk of physical dependence and addiction to opioids SE ^a	1.23	0.82-1.64	<0.001
Discuss the potential of physical dependence to and withdrawal from opioids in a newborn			0.182
Discuss the results of a controlled substance monitoring database query with the patient			0.727
Discuss a birth control plan when opioids are initiated			0.088
Recommend long-acting reversible contraception (LARC) to patients on opioids A ^b	2.38	0.68-4.08	0.007 0.008
Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed			0.057
Document the type of contraception used by the patient SE	1.72	0.18-3.27	0.028 0.030
Discuss the patient's pregnancy status at each visit if on long-term opioids A	1.89	0.42-3.35	0.004 0.013
Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant SE	1.77	1.07-2.47	<0.001 <0.001
Administer a pregnancy test prior to the initiation of opioid therapy			0.498
Obtain a patient's personal history of drug abuse prior to initiating therapy SE	0.96	0.65-1.27	<0.001 <0.001
Conduct a drug abuse risk assessment prior to prescribing an opioid medication SN ^c	0.59	0.01-1.18	0.013 0.048
SE	0.87	0.14-1.59	0.021
Discuss your concern with a patient regarding her drug-taking behaviors when warranted			0.448
Verbally refer a patient for drug abuse treatment when warranted			0.094

^aSE=self-efficacy beliefs; ^bA=attitude; ^cSN=subjective norm beliefs

Table 8. Perceptions of neonatal abstinence syndrome (NAS) and substance use during pregnancy - Prescribers.

Behavior	Response frequency, N (%)						Strongly Agree	Median (IQR)
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree		
Prescribers like me have a responsibility to prevent neonatal abstinence syndrome	1 (2.4)	3 (7.3)	0 (0.0)	4 (9.8)	2 (4.9)	3 (7.3)	26 (63.4)	7 (5-7)
Substance use during pregnancy is a concern in my practice setting	4 (9.8)	2 (4.9)	2 (4.9)	2 (4.9)	1 (2.4)	4 (9.8)	24 (58.5)	7 (4-7)
Supervised replacement therapy (medication assisted treatment) with buprenorphine in pregnant women can result in withdrawal symptoms in newborns	0 (0.0)	0 (0.0)	2 (4.9)	3 (7.3)	5 (12.2)	10 (24.4)	18 (43.9)	6 (5-7)
Supervised replacement therapy (medication assisted treatment) with methadone in pregnant women can result in withdrawal symptoms in newborns	0 (0.0)	0 (0.0)	2 (4.9)	3 (7.3)	2 (4.9)	10 (24.4)	21 (51.2)	7 (6-7)
Use of prescription opioids in pregnancy was adequately covered in my medical training	21 (51.2)	5 (12.2)	4 (9.8)	4 (9.8)	2 (4.9)	0 (0.0)	3 (7.3)	1 (1-3)
Evidence-based information about substance use during pregnancy is readily available to me	2 (4.9)	2 (4.9)	4 (9.8)	4 (9.8)	5 (12.2)	7 (17.1)	15 (36.6)	6 (4-7)
Evidence-based information about my role in neonatal abstinence syndrome prevention is readily available to me	4 (9.8)	2 (4.9)	4 (9.8)	6 (14.6)	4 (9.8)	5 (12.2)	14 (34.1)	5 (3-7)
I have participated in one or more continuing education programs specific to substance use during pregnancy	9 (22.0)	1 (2.4)	1 (2.4)	0 (0.0)	6 (14.6)	5 (12.2)	17 (41.5)	6 (2-7)
I have participated in one or more continuing education programs specific to NAS prevention	11 (26.8)	2 (4.9)	2 (4.9)	0 (0.0)	4 (9.8)	4 (9.8)	16 (39.0)	6 (1-7)
Generally, I trust pain specialists in my area	8 (19.5)	6 (14.6)	5 (12.2)	5 (12.2)	5 (12.2)	6 (14.6)	4 (9.8)	4 (2-6)
Generally, I trust buprenorphine prescribers in my area	8 (19.5)	7 (17.1)	3 (7.3)	7 (17.1)	7 (17.1)	5 (12.2)	2 (4.9)	4 (2-5)

Table 9. Perceptions of contraceptive appropriateness - Prescribers.

Contraception type	Response frequency, N (%)							Median (IQR)
	Very Inappropriate	Inappropriate	Somewhat Inappropriate	Neutral	Somewhat Appropriate	Appropriate	Strongly Appropriate	
Cervical cap	7 (17.1)	7 (17.1)	7 (17.1)	7 (17.1)	3 (7.3)	4 (9.8)	2 (4.9)	3 (2-5)
Diaphragm	7 (17.1)	8 (19.5)	7 (17.1)	6 (14.6)	4 (9.8)	4 (9.8)	2 (4.9)	3 (2-5)
Female condom	8 (19.5)	7 (17.1)	9 (22.0)	6 (14.6)	3 (7.3)	2 (4.9)	3 (7.3)	3 (2-5)
Implant (Implanon, Nexplanon)	2 (4.9)	0 (0.0)	1 (2.4)	3 (7.3)	3 (7.3)	9 (22.0)	18 (43.9)	7 (5.5-7)
Injectable depot (Depo-Provera)	1 (2.4)	0 (0.0)	0 (0.0)	3 (7.3)	5 (12.2)	10 (24.4)	18 (43.9)	6.5 (5.8-7)
Intrauterine device (IUD)	2 (4.9)	1 (2.4)	1 (2.4)	3 (7.3)	5 (12.2)	12 (29.3)	14 (34.1)	6 (5-7)
Oral contraceptive	1 (2.4)	1 (2.4)	4 (9.8)	6 (14.6)	6 (14.6)	10 (24.4)	10 (24.4)	6 (4-7)
Patch (OrthoEvra)	4 (9.8)	0 (0.0)	2 (4.9)	7 (17.1)	8 (19.5)	11 (26.8)	6 (14.6)	5 (4-6)
Sponge	9 (22.0)	6 (14.6)	7 (17.1)	9 (22.0)	2 (4.9)	2 (4.9)	2 (4.9)	3 (1.75-4)

Table 10. Community pharmacist demographic and practice setting characteristics (N=28).

Variable	Numeric Value
Gender, No. (%)	
Female	14 (50)
Male	14 (50)
Age, No (%)	
<30	6 (21.4)
30-44	6 (21.4)
45-60	13 (46.4)
>60	3 (10.7)
Hours worked per week, No. (%)	36.2 (10.9)
<8	2 (7.1)
8-20	1 (3.6)
21-40	14 (50)
>40	11 (39.3)
Setting, No. (%)	
Chain	11 (39.3)
Grocer/Discount store	4 (14.3)
Independent	12 (42.9)
Other	1 (3.6)
Years in practice, Mean (SD)	19. (15.3)

SD=standard deviation

Table 11. NAS prevention behavior descriptive statistics – Pharmacists (N=27)^a

Behavior	Mean (SD)	Median (IQR)
Counsel on the indication for the prescribed medication	8.26 (2.43)	10 (7-10)
Ask about pregnancy status	3.11 (3.95)	0 (0-5)
Document pregnancy status in the patient’s medication profile	2.81 (4.20)	0 (0-7)
Discuss the risks of prescription opioid use during pregnancy	4.54 (3.99)	5 (0-8.25)
Discuss the risk of physical dependence and addiction to opioids	5.96 (4.04)	7 (2-10)
Counsel on the importance of long-acting, reversible contraception (LARC)	1.69 (2.75)	0 (0-3.5)
Ask if the patient has questions about the prescribed medication	9.93 (0.39)	10 (10-10)
Conduct a risk assessment or drug abuse screening prior to dispensing	4.38 (4.59)	1.5 (0-10)
Conduct a controlled substance monitoring database (CSMD) query prior to dispensing	7.56 (3.09)	10 (5-10)
Direct to community resources through which long-acting, reversible contraception (LARC) can be accessed	1.15 (2.54)	0 (0-0.25)
Document the type of contraception to be used while taking the prescription opioid	1.15 (2.48)	0 (0-1)
Communicate with the patient’s prescriber’s office to verify the prescription opioid is appropriate therapy	3.11 (3.70)	2 (0-5)
Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant	3.81 (3.97)	3 (0-8)
Discuss your concern regarding the patient’s drug taking behaviors when warranted	5.11 (4.15)	5 (0-10)
Verbally refer for drug abuse treatment when warranted	3.73 (4.44)	1 (0-10)

^aPharmacists were asked to respond to the following scenario: “Given 10 female patients of childbearing age dispensed a prescription opioid for greater than 7 days, with how many of these patients would you expect to...”

Table 12. NAS prevention behavior attitude scores - Pharmacists^a

Behavior	Mean (SD)	Cronbach's α
Counsel on the indication for the prescribed medication	5.79 (1.06)	0.67
Ask about pregnancy status	6.23 (1.04)	0.80
Document pregnancy status in the patient's medication profile	5.82 (1.05)	0.73
Discuss the risks of prescription opioid use during pregnancy	6.46 (0.88)	0.77
Discuss the risk of physical dependence and addiction to opioids	6.25 (1.15)	0.81
Counsel on the importance of long-acting, reversible contraception (LARC)	5.64 (1.24)	0.81
Ask if the patient has questions about the prescribed medication	6.41 (0.98)	0.63
Conduct a risk assessment or drug abuse screening prior to dispensing	5.24 (1.18)	0.82
Conduct a controlled substance monitoring database (CSMD) query prior to dispensing	6.06 (0.89)	0.68
Direct to community resources through which long-acting, reversible contraception (LARC) can be accessed	5.32(1.07)	0.80
Document the type of contraception to be used while taking the prescription opioid	5.15 (1.36)	0.85
Communicate with the patient's prescriber's office to verify the prescription opioid is appropriate therapy	5.51 (1.51)	0.88
Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant	5.56 (1.54)	0.87
Discuss your concern regarding the patient's drug taking behaviors when warranted	5.73 (1.11)	0.80
Verbally refer for drug abuse treatment when warranted	5.75 (1.16)	0.88

^aAttitude score range = 1 – 7. Higher scores reflect more positive attitudes toward behaviors.

Table 13. NAS prevention behavior subjective norm scores - Pharmacists^a

Behavior	Mean (SD)	Cronbach's α
Counsel on the indication for the prescribed medication	N/A	N/A
Ask about pregnancy status	4.35 (1.42)	0.72
Document pregnancy status in the patient's medication profile	4.76 (1.25)	0.61
Discuss the risks of prescription opioid use during pregnancy	5.10 (1.16)	0.60
Discuss the risk of physical dependence and addiction to opioids	N/A	N/A
Counsel on the importance of long-acting, reversible contraception (LARC)	3.56 (1.40)	0.78
Ask if the patient has questions about the prescribed medication	6.65 (0.50)	0.51
Conduct a risk assessment or drug abuse screening prior to dispensing	4.25 (1.76)	0.89
Conduct a controlled substance monitoring database (CSMD) query prior to dispensing	5.79 (1.14)	0.85
Direct to community resources through which long-acting, reversible contraception (LARC) can be accessed	3.29 (1.24)	0.80
Document the type of contraception to be used while taking the prescription opioid	3.37 (1.43)	0.83
Communicate with the patient's prescriber's office to verify the prescription opioid is appropriate therapy	4.23 (1.37)	0.78
Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant	4.52 (1.50)	0.89
Discuss your concern regarding the patient's drug taking behaviors when warranted	5.21 (1.33)	0.83
Verbally refer for drug abuse treatment when warranted	4.26 (1.79)	0.93

^aSubjective norm score range = 1 – 7. Higher scores reflect normative beliefs that promote behavioral engagement.

Table 14. NAS prevention behaviors self-efficacy scores - Pharmacists ^a		
Behavior	Mean (SD)	Cronbach's α
Counsel on the indication for the prescribed medication	6.88 (0.29)	0.68
Ask about pregnancy status	6.20 (1.35)	0.87
Document pregnancy status in the patient's medication profile	6.23 (1.36)	0.91
Discuss the risks of prescription opioid use during pregnancy	6.21 (1.17)	0.67
Discuss the risk of physical dependence and addiction to opioids	6.46 (0.93)	0.88
Counsel on the importance of long-acting, reversible contraception (LARC)	5.11 (1.86)	0.92
Ask if the patient has questions about the prescribed medication	6.89 (0.31)	0.64
Conduct a risk assessment or drug abuse screening prior to dispensing	5.54 (1.62)	0.85
Conduct a controlled substance monitoring database (CSMD) query prior to dispensing	6.75 (0.50)	0.68
Direct to community resources through which long-acting, reversible contraception (LARC) can be accessed	4.57 (1.91)	0.86
Document the type of contraception to be used while taking the prescription opioid	5.30 (1.91)	0.88
Communicate with the patient's prescriber's office to verify the prescription opioid is appropriate therapy	5.80 (1.65)	0.95
Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant	5.89 (1.70)	0.93
Discuss your concern regarding the patient's drug taking behaviors when warranted	5.79 (1.40)	0.90
Verbally refer for drug abuse treatment when warranted	4.86 (1.86)	0.88

^aSelf-efficacy score range = 1 – 7. Higher scores reflect higher self-efficacy beliefs.

Table 15. Items representing control beliefs for NAS behaviors.^a

Behavior	Response frequency, N (%)						Strongly Agree	Median (IQR)
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree		
Counsel on the indication for the prescribed medication	10 (35.7)	3 (10.7)	1 (3.6)	2 (7.1)	1 (3.6)	2 (7.1)	9 (32.1)	3.5 (1-7)
Ask the patient if she is pregnant	3 (10.7)	2 (7.1)	1 (3.6)	6 (21.4)	4 (14.3)	4 (14.3)	8 (28.6)	5 (4-7)
Document pregnancy status in the patient's medication profile	5 (17.9)	1 (3.6)	1 (3.6)	5 (17.9)	3 (10.7)	5 (17.9)	8 (28.6)	5 (3.3-7)
Discuss the risks of opiate use during pregnancy	3 (10.7)	2(7.1)	1(3.6)	5 (17.9)	4 (14.3)	7 (25.0)	6 (21.4)	5 (4-6)
Discuss the risk of physical dependence and addiction to opioids	2 (7.1)	1 (3.6)	3 (10.7)	5 (17.9)	5 (17.9)	5 (17.9)	7 (25.0)	5 (4-6.8)
Counsel on the importance of long-acting, reversible contraception	2 (7.1)	1 (3.6)	1 (3.6)	7 (25.0)	5 (17.9)	5 (17.9)	7 (25.0)	5 (4-6.8)
Ask if the patient has questions about the prescribed medication	11 (39.3)	2 (7.1)	1 (3.6)	2 (7.1)	0 (0)	2 (7.1)	10 (35.7)	3.5 (1-7)
Conduct a risk assessment or drug abuse screening prior to dispensing	4 (14.3)	0 (0)	2 (7.1)	6 (21.4)	5 (17.9)	4 (14.3)	7 (25.0)	5 (4-6.8)
Conduct a CSMD query prior to dispensing the medication	4 (14.3)	3 (10.7)	2 (7.1)	3 (10.7)	3 (10.7)	4 (14.3)	9 (32.1)	5 (2.3-7)
Direct patients to community resources through which long-acting, reversible contraception can be obtained	2 (7.1)	1 (3.6)	0 (0)	8 (28.6)	5 (17.9)	4 (14.3)	8 (28.6)	5 (4-7)
Document the type of contraception to be used while taking the prescription opioid	2 (7.1)	1 (3.6)	0 (0)	8 (28.6)	2 (7.1)	3 (10.7)	12 (42.9)	6 (4-7)
Communicate with the patient's prescriber's office to verify the prescription is appropriate therapy	2 (7.1)	1 (3.6)	1 (3.6)	7 (25.0)	3 (10.7)	4 (14.3)	10 (35.7)	5.5 (4-7)
Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant	2 (7.1)	1 (3.6)	1 (3.6)	6 (21.4)	4 (14.3)	5 (17.9)	9 (32.1)	5.5 (4-7)
Discuss my concern with a patient regarding her drug-taking behaviors when warranted	1 (3.6)	1 (3.6)	1 (3.6)	5 (17.9)	5 (17.9)	4 (14.3)	11 (39.3)	6 (4-7)
Verbally refer patients for drug abuse treatment when warranted	3 (10.7)	0 (0)	1 (3.6)	7 (25.0)	3 (10.7)	4 (14.3)	10 (35.7)	5.5 (4-7)

^aSurvey item: "Whether or not I do each of the following is entirely up to me"

Table 16. Linear regression analysis output for NAS prevention behaviors - Pharmacists.

Behavior/Significant Construct	Unstandardized coefficient	95% CI	p-value
Counsel on the indication for the prescribed medication			0.004
A ^a	1.13	-32.5-8.6	0.013
SE ^b	-0.45	-6.9- -0.5	0.025
Item 4.1.2 ^c	5.38	2.5-8.2	0.001
Ask the patient if she is pregnant			0.043
SN ^d	1.85	0.4-3.3	0.013
Document pregnancy status in the patient's medication profile			0.858
Discuss the risks of opiate use during pregnancy			0.446
Discuss the risk of physical dependence and addiction to opioids			0.097
A	2.47	0.7-4.2	0.009
Counsel on the importance of long-acting, reversible contraception			0.101
Ask if the patient has questions about the prescribed medication			0.570
Conduct a risk assessment or drug abuse screening prior to dispensing			0.048
Conduct a CSMD query prior to dispensing the medication			0.396
Direct patients to community resources through which long-acting, reversible contraception can be obtained			0.005
SN	0.99	0.4-1.9	0.042
BC ^e	-0.87	-1.4- -0.3	0.004
Document the type of contraception to be used while taking the prescription opioid			0.011
SN	1.08	0.3-1.8	0.006
BC	-0.60	-1.1- -0.1	0.033
Communicate with the patient's prescriber's office to verify the prescription is appropriate therapy			0.179
Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant			0.047
A	1.85	0.3-3.4	0.019
Discuss my concern with a patient regarding her drug-taking behaviors when warranted			0.062
A	1.91	0.3-3.5	0.022
Verbally refer patients for drug abuse treatment when warranted			0.106

a: A=attitude; b: SE=self-efficacy beliefs; c: Item 4.1.2="It is expected of me that I counsel on the indication for the prescribed medication"; d: SN=subjective norm beliefs; e: BC="Whether or not I direct patients to community resources through which long-acting, reversible contraception can be accessed is entirely up to me"

Table 17. Perceptions of neonatal abstinence syndrome (NAS) and substance use during pregnancy - Pharmacists.

Behavior	Response frequency, N (%)							Median (IQR)
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree	
Pharmacists like me have a responsibility to prevent neonatal abstinence syndrome	1 (3.7)	0 (0)	0 (0)	3 (11.1)	5 (18.5)	11 (40.7)	7 (25.9)	6 (5-7)
Substance use during pregnancy is a concern in my practice setting	1 (3.6)	1 (3.6)	1 (3.6)	3 (10.7)	3 (10.7)	5 (17.9)	14 (50.0)	6.5 (5-7)
Supervised replacement therapy (medication assisted treatment) with buprenorphine in pregnant women can result in withdrawal symptoms in newborns	0 (0)	0 (0)	0 (0)	4 (14.8)	4 (14.8)	6 (22.2)	13 (48.1)	6 (5-7)
Supervised replacement therapy (medication assisted treatment) with methadone in pregnant women can result in withdrawal symptoms in newborns	0 (0)	0 (0)	0 (0)	3 (10.7)	3 (10.7)	5 (18.5)	27 (59.3)	7 (6-7)
Use of prescription opioids in pregnancy was adequately covered in my pharmacy training	1 (3.7)	6 (22.2)	5 (18.5)	2 (7.4)	5 (18.5)	4 (14.8)	4 (14.8)	4 (2-6)
Evidence-based information about substance use during pregnancy is readily available to me	1 (3.7)	1 (3.7)	4 (14.8)	5 (18.5)	2 (7.4)	9 (33.3)	5 (18.5)	6 (4-6)
Evidence-based information about my role in neonatal abstinence syndrome prevention is readily available to me	3 (11.1)	2 (7.4)	4 (14.8)	9 (33.3)	5 (18.5)	2 (7.4)	2 (7.4)	4 (3-5)
I have participated in one or more continuing education programs specific to substance use during pregnancy	10 (37.0)	6 (22.2)	3 (11.1)	4 (14.8)	0 (0)	3 (11.1)	1 (3.7)	2 (1-4)
I have participated in one or more continuing education programs specific to NAS prevention	11 (40.7)	7 (25.9)	3 (11.1)	3 (11.1)	0 (0)	2 (7.4)	1 (3.7)	2 (1-3)
Generally, I trust pain specialists in my area	9 (33.3)	2 (7.4)	9 (33.3)	3 (11.1)	3 (11.1)	1 (3.7)	0 (0)	3 (1-4)
Generally, I trust buprenorphine prescribers in my area	16 (59.3)	3 (11.1)	6 (22.2)	1 (3.7)	1 (3.7)	0 (0)	0 (0)	1 (1-3)

Table 18. Perceptions of contraceptive appropriateness - Pharmacists.

Contraception type	Response frequency, N (%)							Median (IQR)
	Very Inappropriate	Inappropriate	Somewhat Inappropriate	Neutral	Somewhat Appropriate	Appropriate	Strongly Appropriate	
Cervical cap	5 (19.2)	2 (7.1)	6 (23.1)	5 (19.2)	4 (15.4)	3 (11.5)	1 (3.8)	3.5 (2-5)
Diaphragm	4 (15.4)	3 (11.5)	4 (15.4)	5 (19.2)	5 (19.2)	4 (15.4)	1 (3.8)	4 (2-5)
Female condom	4 (15.4)	4 (15.4)	7 (26.9)	4 (15.4)	3 (11.5)	3 (11.5)	1 (3.8)	3 (2-5)
Implant (Implanon, Nexplanon)	0 (0)	0 (0)	1 (3.8)	0 (0)	3 (11.5)	7 (26.9)	15 (57.7)	7 (6-7)
Injectable depot (Depo-Provera)	0 (0)	0 (0)	0 (0)	1 (3.8)	2 (7.7)	7 (26.9)	16 (61.5)	7 (6-7)
Intrauterine device (IUD)	2 (7.7)	0 (0)	0 (0)	1 (3.8)	3 (11.5)	8 (30.8)	12 (46.2)	6 (5.8-7)
Oral contraceptive	1 (3.8)	1 (3.8)	0 (0)	1 (3.8)	5 (19.2)	10 (38.5)	8 (30.8)	6 (5-7)
Patch (OrthoEvra)	1 (4.0)	0 (0)	1 (4.0)	3 (12.0)	2 (8.0)	13 (52.0)	5 (20.0)	6 (5-6)
Sponge	5 (20.0)	8 (32.0)	4 (16.0)	4 (16.0)	2 (8.0)	1 (4.0)	1 (4.0)	2 (2-4)

Appendix A

PCP Survey

APPENDIX A - PCP SURVEY

SECTION 1: Demographic Information

- 1.1 Please indicate your gender
 Female Male
- 1.2 Please indicate your age
 <30 30-44 45-60 61+
- 1.3 Including your residency training, how many years have you been in practice?
_____ (please enter a numerical value)
- 1.4 In what county is your primary practice setting located?
_____ County
- 1.5 What is your primary medical specialty?
 Advanced Practice Nurse
 Emergency Medicine
 Family Medicine
 Internal Medicine
 Physical Medicine and Rehabilitation
 Physician Assistant
 Other (please specify _____)
- 1.6 Are you board certified in pain medicine?
 No Yes
- 1.7 Are you board certified in addiction medicine?
 No Yes
- 1.8 Please check one box that best describes your primary practice setting.
- | | |
|--|--|
| <input type="checkbox"/> 2-Person Partnership | <input type="checkbox"/> Primary Care Practice Group |
| <input type="checkbox"/> Community Health Center | <input type="checkbox"/> Public Health Clinic |
| <input type="checkbox"/> Federally Qualified Health Center | <input type="checkbox"/> Residency Clinic |
| <input type="checkbox"/> Hospital | <input type="checkbox"/> Rural Health Clinic |
| <input type="checkbox"/> Multispecialty Practice Group | <input type="checkbox"/> Solo Practice |
| <input type="checkbox"/> Pain Management Clinic | <input type="checkbox"/> Urgent Care Clinic |

SECTION 2: Prescriber Activities

Given 10 female patients of childbearing age prescribed a prescription opioid for greater than 7 days, with how many of these patients would you typically...

(Please enter a number from 0-10 for each activity)

- | | |
|------------|--|
| _____ 2.1 | Discuss the risks of opioid use during pregnancy? |
| _____ 2.2 | Discuss the patient's risk of physical dependence and addiction to opioids? |
| _____ 2.3 | Discuss the potential of physical dependence to and withdrawal from opioids in a newborn? |
| _____ 2.4 | Discuss the results of a controlled substance monitoring database query with the patient? |
| _____ 2.5 | Discuss a birth control plan when opioids are initiated? |
| _____ 2.6 | Recommend long-acting, reversible contraception (LARC) to patients on opioids? |
| _____ 2.7 | Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed? |
| _____ 2.8 | Document the type of contraception used by the patient? |
| _____ 2.9 | Discuss the patient's pregnancy status at <u>each visit</u> if on long-term opioids? |
| _____ 2.10 | Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant? |
| _____ 2.11 | Administer a pregnancy test prior to the initiation of opioid therapy? |
| _____ 2.12 | Obtain a patient's personal history of drug abuse prior to initiating therapy? |
| _____ 2.13 | Conduct a drug abuse risk assessment prior to prescribing an opioid medication? |
| _____ 2.14 | Discuss your concern with a patient regarding her drug-taking behaviors when warranted? |
| _____ 2.15 | Verbally refer a patient for drug abuse treatment when warranted? |

SECTION 3: Prescriber Attitudes

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

3.1 Discussing the risks of opioid use during pregnancy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.2 Discussing the patient's risk of physical dependence and addiction to opioids is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.3 Discussing the potential of physical dependence to and withdrawal from opioids in a newborn is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.4 Discussing the results of a controlled substance monitoring database query with a patient is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.5 Discussing a birth control plan when opioids are initiated is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.6 Recommending long-acting, reversible contraception is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.7 Directing patients to community resources through which long-acting, reversible contraception can be accessed is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.8 Documenting the type of contraception used by patients...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.9 Discussing pregnancy status at each visit with patients on long-term opioid therapy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.10 Discussing the expectation that a patient inform you if she becomes, or plans to become, pregnant is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.11 Administering a pregnancy test prior to the initiation of opioid therapy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.12 Obtaining a patient's personal history of drug abuse is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.13 Conducting a risk assessment or drug abuse screening prior to prescribing an opiate is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.14 Discussing your concern with a patient regarding her drug-taking behaviors is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.15 Verbally referring patients for drug abuse treatment when warranted is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

SECTION 4: Prescriber Perceptions of Others

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (should not) to 7 (should), please circle one number item indicating how you feel about each of the following statements.

Most people who are important to me think that I...									
	SHOULD NOT				SHOULD				
	1	2	3	4	5	6	7		
4.1.1	1	2	3	4	5	6	7		discuss the risks of opioid use during pregnancy.
4.2.1	1	2	3	4	5	6	7		discuss the patient's risk of physical dependence and addiction to opioids.
4.3.1	1	2	3	4	5	6	7		discuss the potential of physical dependence to and withdrawal from opioids in a newborn.
4.4.1	1	2	3	4	5	6	7		discuss the results of controlled substance monitoring database queries with patients.
4.5.1	1	2	3	4	5	6	7		discuss a birth control plan when opioids are initiated.
4.6.1	1	2	3	4	5	6	7		recommend long-acting, reversible contraception.
4.7.1	1	2	3	4	5	6	7		direct patients to community resources through which long-acting, reversible contraception can be accessed.
4.8.1	1	2	3	4	5	6	7		document the type of contraception used by patients.
4.9.1	1	2	3	4	5	6	7		discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.
4.10.1	1	2	3	4	5	6	7		discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.
4.11.1	1	2	3	4	5	6	7		administer a pregnancy test prior to the initiation of opioid therapy.
4.12.1	1	2	3	4	5	6	7		obtain a patient's personal history of drug abuse prior to initiating therapy.
4.13.1	1	2	3	4	5	6	7		conduct a risk assessment or drug abuse screening prior to prescribing an opiate.
4.14.1	1	2	3	4	5	6	7		discuss your concern with a patient regarding her drug-taking behaviors.
4.15.1	1	2	3	4	5	6	7		verbally refer patients for drug abuse treatment when warranted.

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

	It is expected of me that I...	SD						SA
4.1.2	discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7
4.2.2	discuss the patient's risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7
4.3.2	discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7
4.4.2	discuss the results of a controlled substance monitoring database query with patients.	1	2	3	4	5	6	7
4.5.2	discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7
4.6.2	recommend long-acting, reversible contraception.	1	2	3	4	5	6	7
4.7.2	direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7
4.8.2	document the type of contraception used by patients.	1	2	3	4	5	6	7
4.9.2	discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7
4.10.2	discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7
4.11.2	administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7
4.12.2	obtain a patient's personal history of drug abuse.	1	2	3	4	5	6	7
4.13.2	conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7
4.14.2	discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7
4.15.2	verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7

SECTION 5: Prescriber Confidence and Control

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

I am confident in my ability to...		SD							SA
5.1.1	discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7	
5.2.1	discuss the patient's risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7	
5.3.1	discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7	
5.4.1	discuss the results of controlled substance monitoring database queries with patients.	1	2	3	4	5	6	7	
5.5.1	discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7	
5.6.1	recommend long-acting, reversible contraception.	1	2	3	4	5	6	7	
5.7.1	direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7	
5.8.1	document the type of contraception used by patients.	1	2	3	4	5	6	7	
5.9.1	discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7	
5.10.1	discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7	
5.11.1	administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7	
5.12.1	obtain a patient's personal history of drug abuse.	1	2	3	4	5	6	7	
5.13.1	conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7	
5.14.1	discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7	
5.15.1	verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7	

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neutral 5 Somewhat Agree 6 Agree 7 Strongly Agree

Whether or not I do each of the following is entirely up to me.		SD							SA
5.1.3	Discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7	
5.2.3	Discuss the patient's risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7	
5.3.3	Discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7	
5.4.3	Discuss the results of controlled substance monitoring database queries with patients.	1	2	3	4	5	6	7	
5.5.3	Discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7	
5.6.3	Recommend long-acting, reversible contraception.	1	2	3	4	5	6	7	
5.7.3	Direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7	
5.8.3	Document the type of contraception used by patients.	1	2	3	4	5	6	7	
5.9.3	Discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7	
5.10.3	Discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7	
5.11.3	Administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7	
5.12.3	Obtain a patient's personal history of drug abuse.	1	2	3	4	5	6	7	
5.13.3	Conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7	
5.14.3	Discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7	
5.15.3	Verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7	

SECTION 6: Prescriber Perceptions

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree						
							SD	SA					
6.1	Prescribers like me have a responsibility to prevent neonatal abstinence syndrome						1	2	3	4	5	6	7
6.2	Substance use during pregnancy is a concern in my practice setting						1	2	3	4	5	6	7
6.3	Supervised replacement therapy (medication assisted treatment) with buprenorphine in pregnant women can result in withdrawal symptoms in newborns						1	2	3	4	5	6	7
6.4	Supervised replacement therapy (medication assisted treatment) with methadone in pregnant women can result in withdrawal symptoms in newborns						1	2	3	4	5	6	7
6.5	Use of prescription opioids in pregnancy was adequately covered in my medical training						1	2	3	4	5	6	7
6.6	Evidence-based information about substance use during pregnancy is readily available to me						1	2	3	4	5	6	7
6.7	Evidence-based information about my role in neonatal abstinence syndrome prevention is readily available to me						1	2	3	4	5	6	7
6.8	I have participated in one or more continuing education programs specific to substance use during pregnancy						1	2	3	4	5	6	7
6.9	I have participated in one or more continuing education programs specific to NAS prevention						1	2	3	4	5	6	7
6.10	Generally, I trust pain specialists in my area						1	2	3	4	5	6	7
6.11	Generally, I trust buprenorphine prescribers in my area						1	2	3	4	5	6	7

6.12 Supervised replacement therapy (medication assisted treatment) in pregnant patients is

Good	1	2	3	4	5	6	7	Bad
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Inappropriate	1	2	3	4	5	6	7	Appropriate

6.13 What percent of newborns diagnosed with neonatal abstinence syndrome (NAS) in Tennessee would you estimate are born to mothers who are undergoing supervised replacement therapy (medically assisted treatment) with either buprenorphine or methadone?

_____ %

SECTION 7: Contraception Perceptions

On a scale of 1 (very inappropriate) to 7 (very appropriate), please rate the appropriateness of the following contraceptive methods for a female patient of childbearing age who is prescribed one or more opioid medications for a chronic condition.

	Very Inappropriate			Very Appropriate			
Cervical Cap	1	2	3	4	5	6	7
Diaphragm	1	2	3	4	5	6	7
Female Condom	1	2	3	4	5	6	7
Implant (Implanon, Nexplanon)	1	2	3	4	5	6	7
Injectable depot (Depo-Provera)	1	2	3	4	5	6	7
Intrauterine device (IUD)	1	2	3	4	5	6	7
Oral contraceptive	1	2	3	4	5	6	7
Patch (OrthoEvra)	1	2	3	4	5	6	7
Sponge	1	2	3	4	5	6	7

Thank you for your time and your expertise!

Please return your questionnaire using the enclosed postage-paid envelope at your earliest convenience.

Appendix B

DATA-Waivered Prescriber Survey

APPENDIX B - DATA-WAIVERED PRESCRIBER SURVEY

SECTION 1: Demographic Information

- 1.1 Please indicate your gender
 Female Male
- 1.2 Please indicate your age
 <30 30-44 45-60 61+
- 1.3 Including your residency training, how many years have you been in practice?
_____ Years (please enter a numerical value)
- 1.4 In what county is your primary practice setting located?
_____ County
- 1.5 What is your primary medical specialty?
 Advanced Practice Nurse
 Emergency Medicine
 Family Medicine
 Internal Medicine
 Physical Medicine and Rehabilitation
 Physician Assistant
 Other (please specify _____)
- 1.6 Are you board certified in pain medicine?
 No Yes
- 1.7 Are you board certified in addiction medicine?
 No Yes
- 1.8 How many years have you practiced as a waived physician authorized to engage in "in office" treatment of opioid addiction?
_____ Years (please enter a numerical value)
- 1.9 Please check one box that best describes your primary practice setting.
- | | |
|--|--|
| <input type="checkbox"/> 2-Person Partnership | <input type="checkbox"/> Primary Care Practice Group |
| <input type="checkbox"/> Community Health Center | <input type="checkbox"/> Public Health Clinic |
| <input type="checkbox"/> Federally Qualified Health Center | <input type="checkbox"/> Residency Clinic |
| <input type="checkbox"/> Hospital | <input type="checkbox"/> Rural Health Clinic |
| <input type="checkbox"/> Multispecialty Practice Group | <input type="checkbox"/> Solo Practice |
| <input type="checkbox"/> Pain Management Clinic | <input type="checkbox"/> Urgent Care Clinic |

SECTION 2: Prescriber Activities

Given 10 female patients of childbearing age prescribed a prescription opioid for greater than 7 days, with how many of these patients would you typically...

(Please enter a number from 0-10 for each activity)

- | | |
|------------|--|
| _____ 2.1 | Discuss the risks of opioid use during pregnancy? |
| _____ 2.2 | Discuss the patient's risk of physical dependence and addiction to opioids? |
| _____ 2.3 | Discuss the potential of physical dependence to and withdrawal from opioids in a newborn? |
| _____ 2.4 | Discuss the results of a controlled substance monitoring database query with the patient? |
| _____ 2.5 | Discuss a birth control plan when opioids are initiated? |
| _____ 2.6 | Recommend long-acting, reversible contraception (LARC) to patients on opioids? |
| _____ 2.7 | Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed? |
| _____ 2.8 | Document the type of contraception used by the patient? |
| _____ 2.9 | Discuss the patient's pregnancy status at <u>each visit</u> if on long-term opioids? |
| _____ 2.10 | Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant? |
| _____ 2.11 | Administer a pregnancy test prior to the initiation of opioid therapy? |
| _____ 2.12 | Obtain a patient's personal history of drug abuse prior to initiating therapy? |
| _____ 2.13 | Conduct a drug abuse risk assessment prior to prescribing an opioid medication? |
| _____ 2.14 | Discuss your concern with a patient regarding her drug-taking behaviors when warranted? |
| _____ 2.15 | Verbally refer a patient for drug abuse treatment when warranted? |

SECTION 3: Prescriber Attitudes

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

3.1 Discussing the risks of opioid use during pregnancy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.2 Discussing the patient's risk of physical dependence and addiction to opioids is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.3 Discussing the potential of physical dependence to and withdrawal from opioids in a newborn is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.4 Discussing the results of a controlled substance monitoring database query with a patient is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.5 Discussing a birth control plan when opioids are initiated is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.6 Recommending long-acting, reversible contraception is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.7 Directing patients to community resources through which long-acting, reversible contraception can be accessed is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.8 Documenting the type of contraception used by patients...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.9 Discussing pregnancy status at each visit with patients on long-term opioid therapy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.10 Discussing the expectation that a patient inform you if she becomes, or plans to become, pregnant is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.11 Administering a pregnancy test prior to the initiation of opioid therapy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.12 Obtaining a patient's personal history of drug abuse is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.13 Conducting a risk assessment or drug abuse screening prior to prescribing an opiate is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.14 Discussing your concern with a patient regarding her drug-taking behaviors is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.15 Verbally referring patients for drug abuse treatment when warranted is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

SECTION 4: Prescriber Perceptions of Others

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (should not) to 7 (should), please circle one number item indicating how you feel about each of the following statements.

Most people who are important to me think that I...									
	SHOULD NOT				SHOULD				
4.1.1	1	2	3	4	5	6	7	discuss the risks of opioid use during pregnancy.	
4.2.1	1	2	3	4	5	6	7	discuss the patient's risk of physical dependence and addiction to opioids.	
4.3.1	1	2	3	4	5	6	7	discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	
4.4.1	1	2	3	4	5	6	7	discuss the results of controlled substance monitoring database queries with patients.	
4.5.1	1	2	3	4	5	6	7	discuss a birth control plan when opioids are initiated.	
4.6.1	1	2	3	4	5	6	7	recommend long-acting, reversible contraception.	
4.7.1	1	2	3	4	5	6	7	direct patients to community resources through which long-acting, reversible contraception can be accessed.	
4.8.1	1	2	3	4	5	6	7	document the type of contraception used by patients.	
4.9.1	1	2	3	4	5	6	7	discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	
4.10.1	1	2	3	4	5	6	7	discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	
4.11.1	1	2	3	4	5	6	7	administer a pregnancy test prior to the initiation of opioid therapy.	
4.12.1	1	2	3	4	5	6	7	obtain a patient's personal history of drug abuse prior to initiating therapy.	
4.13.1	1	2	3	4	5	6	7	conduct a risk assessment or drug abuse screening prior to prescribing an opiate.	
4.14.1	1	2	3	4	5	6	7	discuss your concern with a patient regarding her drug-taking behaviors.	
4.15.1	1	2	3	4	5	6	7	verbally refer patients for drug abuse treatment when warranted.	

SECTION 5: Prescriber Confidence and Control

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

I am confident in my ability to...		SD							SA
5.1.1	discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7	
5.2.1	discuss the patient's risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7	
5.3.1	discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7	
5.4.1	discuss the results of controlled substance monitoring database queries with patients.	1	2	3	4	5	6	7	
5.5.1	discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7	
5.6.1	recommend long-acting, reversible contraception.	1	2	3	4	5	6	7	
5.7.1	direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7	
5.8.1	document the type of contraception used by patients.	1	2	3	4	5	6	7	
5.9.1	discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7	
5.10.1	discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7	
5.11.1	administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7	
5.12.1	obtain a patient's personal history of drug abuse.	1	2	3	4	5	6	7	
5.13.1	conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7	
5.14.1	discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7	
5.15.1	verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7	

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neutral 5 Somewhat Agree 6 Agree 7 Strongly Agree

Whether or not I do each of the following is entirely up to me.		SD							SA
5.1.3	Discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7	
5.2.3	Discuss the patient’s risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7	
5.3.3	Discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7	
5.4.3	Discuss the results of controlled substance monitoring database queries with patients.	1	2	3	4	5	6	7	
5.5.3	Discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7	
5.6.3	Recommend long-acting, reversible contraception.	1	2	3	4	5	6	7	
5.7.3	Direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7	
5.8.3	Document the type of contraception used by patients.	1	2	3	4	5	6	7	
5.9.3	Discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7	
5.10.3	Discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7	
5.11.3	Administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7	
5.12.3	Obtain a patient’s personal history of drug abuse.	1	2	3	4	5	6	7	
5.13.3	Conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7	
5.14.3	Discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7	
5.15.3	Verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7	

SECTION 6: Prescriber Perceptions

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree							
	SD						SA							
6.1	Prescribers like me have a responsibility to prevent neonatal abstinence syndrome							1	2	3	4	5	6	7
6.2	Substance use during pregnancy is a concern in my practice setting							1	2	3	4	5	6	7
6.3	Supervised replacement therapy (medication assisted treatment) with buprenorphine in pregnant women can result in withdrawal symptoms in newborns							1	2	3	4	5	6	7
6.4	Supervised replacement therapy (medication assisted treatment) with methadone in pregnant women can result in withdrawal symptoms in newborns							1	2	3	4	5	6	7
6.5	Use of prescription opioids in pregnancy was adequately covered in my medical school curriculum							1	2	3	4	5	6	7
6.6	Evidence-based information about substance use during pregnancy is readily available to me							1	2	3	4	5	6	7
6.7	Evidence-based information about my role in neonatal abstinence syndrome prevention is readily available to me							1	2	3	4	5	6	7
6.8	I have participated in one or more continuing education programs specific to substance use during pregnancy							1	2	3	4	5	6	7
6.9	I have participated in one or more continuing education programs specific to NAS prevention							1	2	3	4	5	6	7
6.10	Generally, I trust pain specialists in my area							1	2	3	4	5	6	7
6.11	Generally, I trust other buprenorphine prescribers in my area							1	2	3	4	5	6	7

6.12 Supervised replacement therapy (medication assisted treatment) in pregnant patients is

Good	1	2	3	4	5	6	7	Bad
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Inappropriate	1	2	3	4	5	6	7	Appropriate

6.13 What percent of newborns diagnosed with neonatal abstinence syndrome (NAS) in Tennessee would you estimate are born to mothers who are undergoing supervised replacement therapy (medically assisted treatment) with either buprenorphine or methadone?

_____ %

SECTION 7: Contraception Perceptions

On a scale of 1 (very inappropriate) to 7 (very appropriate), please rate the appropriateness of the following contraceptive methods for a female patient of childbearing age who is prescribed one or more opioid medications for a chronic condition.

	Very Inappropriate			Very Appropriate			
Cervical Cap	1	2	3	4	5	6	7
Diaphragm	1	2	3	4	5	6	7
Female Condom	1	2	3	4	5	6	7
Implant (Implanon, Nexplanon)	1	2	3	4	5	6	7
Injectable depot (Depo-Provera)	1	2	3	4	5	6	7
Intrauterine device (IUD)	1	2	3	4	5	6	7
Oral contraceptive	1	2	3	4	5	6	7
Patch (OrthoEvra)	1	2	3	4	5	6	7
Sponge	1	2	3	4	5	6	7

Thank you for your time and your expertise!

Please return your questionnaire using the enclosed postage-paid envelope at your earliest convenience.

Appendix C

Pain Management Clinic Directors Survey

APPENDIX C - PAIN MANAGEMENT CLINIC DIRECTOR SURVEY

SECTION 1: Demographic Information

1.1 Please indicate your gender

- Female Male

1.2 Please indicate your age

- <30 30-44 45-60 61+

1.3 Including your residency training, how many years have you been in practice?

_____ Years (please enter a numerical value)

1.4 In what county is your primary practice setting located?

_____ County

1.5 What is your primary medical specialty?

- Advanced Practice Nurse
 Emergency Medicine
 Family Medicine
 Internal Medicine
 Physical Medicine and Rehabilitation
 Physician Assistant
 Other (please specify _____)

1.6 Are you board certified in pain medicine?

- No Yes

1.7 Are you board certified in addiction medicine?

- No Yes

1.8 How many prescribers practice within the pain management clinic you direct?

_____ Prescribers (please enter a numerical value)

1.9 Please check one box that best describes your primary practice setting.

- | | |
|--|--|
| <input type="checkbox"/> 2-Person Partnership | <input type="checkbox"/> Primary Care Practice Group |
| <input type="checkbox"/> Community Health Center | <input type="checkbox"/> Public Health Clinic |
| <input type="checkbox"/> Federally Qualified Health Center | <input type="checkbox"/> Residency Clinic |
| <input type="checkbox"/> Hospital | <input type="checkbox"/> Rural Health Clinic |
| <input type="checkbox"/> Multispecialty Practice Group | <input type="checkbox"/> Solo Practice |
| <input type="checkbox"/> Pain Management Clinic | <input type="checkbox"/> Urgent Care Clinic |

SECTION 2: Prescriber Activities

Given 10 female patients of childbearing age prescribed a prescription opioid for greater than 7 days, with how many of these patients would you typically...

(Please enter a number from 0-10 for each activity)

- | | |
|------------|--|
| _____ 2.1 | Discuss the risks of opioid use during pregnancy? |
| _____ 2.2 | Discuss the patient's risk of physical dependence and addiction to opioids? |
| _____ 2.3 | Discuss the potential of physical dependence to and withdrawal from opioids in a newborn? |
| _____ 2.4 | Discuss the results of a controlled substance monitoring database query with the patient? |
| _____ 2.5 | Discuss a birth control plan when opioids are initiated? |
| _____ 2.6 | Recommend long-acting, reversible contraception (LARC) to patients on opioids? |
| _____ 2.7 | Direct patients to community resources through which long-acting, reversible contraception (LARC) can be accessed? |
| _____ 2.8 | Document the type of contraception used by the patient? |
| _____ 2.9 | Discuss the patient's pregnancy status at <u>each visit</u> if on long-term opioids? |
| _____ 2.10 | Discuss the expectation that the patient inform you if she becomes, or plans to become, pregnant? |
| _____ 2.11 | Administer a pregnancy test prior to the initiation of opioid therapy? |
| _____ 2.12 | Obtain a patient's personal history of drug abuse prior to initiating therapy? |
| _____ 2.13 | Conduct a drug abuse risk assessment prior to prescribing an opioid medication? |
| _____ 2.14 | Discuss your concern with a patient regarding her drug-taking behaviors when warranted? |
| _____ 2.15 | Verbally refer a patient for drug abuse treatment when warranted? |

SECTION 3: Prescriber Attitudes

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

3.1 Discussing the risks of opioid use during pregnancy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.2 Discussing the patient's risk of physical dependence and addiction to opioids is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.3 Discussing the potential of physical dependence to and withdrawal from opioids in a newborn is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.4 Discussing the results of a controlled substance monitoring database query with a patient is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.5 Discussing a birth control plan when opioids are initiated is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.6 Recommending long-acting, reversible contraception is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.7 Directing patients to community resources through which long-acting, reversible contraception can be accessed is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.8 Documenting the type of contraception used by patients...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.9 Discussing pregnancy status at each visit with patients on long-term opioid therapy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.10 Discussing the expectation that a patient inform you if she becomes, or plans to become, pregnant is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.11 Administering a pregnancy test prior to the initiation of opioid therapy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.12 Obtaining a patient's personal history of drug abuse is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.13 Conducting a risk assessment or drug abuse screening prior to prescribing an opiate is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.14 Discussing your concern with a patient regarding her drug-taking behaviors is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.15 Verbally referring patients for drug abuse treatment when warranted is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

SECTION 4: Prescriber Perceptions of Others

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (should not) to 7 (should), please circle one number item indicating how you feel about each of the following statements.

Most people who are important to me think that I...									
	SHOULD NOT				SHOULD				
4.1.1	1	2	3	4	5	6	7	discuss the risks of opioid use during pregnancy.	
4.2.1	1	2	3	4	5	6	7	discuss the patient's risk of physical dependence and addiction to opioids.	
4.3.1	1	2	3	4	5	6	7	discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	
4.4.1	1	2	3	4	5	6	7	discuss the results of controlled substance monitoring database queries with patients.	
4.5.1	1	2	3	4	5	6	7	discuss a birth control plan when opioids are initiated.	
4.6.1	1	2	3	4	5	6	7	recommend long-acting, reversible contraception.	
4.7.1	1	2	3	4	5	6	7	direct patients to community resources through which long-acting, reversible contraception can be accessed.	
4.8.1	1	2	3	4	5	6	7	document the type of contraception used by patients.	
4.9.1	1	2	3	4	5	6	7	discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	
4.10.1	1	2	3	4	5	6	7	discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	
4.11.1	1	2	3	4	5	6	7	administer a pregnancy test prior to the initiation of opioid therapy.	
4.12.1	1	2	3	4	5	6	7	obtain a patient's personal history of drug abuse prior to initiating therapy.	
4.13.1	1	2	3	4	5	6	7	conduct a risk assessment or drug abuse screening prior to prescribing an opiate.	
4.14.1	1	2	3	4	5	6	7	discuss your concern with a patient regarding her drug-taking behaviors.	
4.15.1	1	2	3	4	5	6	7	verbally refer patients for drug abuse treatment when warranted.	

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

It is expected of me that I...		SD							SA
4.1.2	discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7	
4.2.2	discuss the patient's risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7	
4.3.2	discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7	
4.4.2	discuss the results of a controlled substance monitoring database query with patients.	1	2	3	4	5	6	7	
4.5.2	discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7	
4.6.2	recommend long-acting, reversible contraception.	1	2	3	4	5	6	7	
4.7.2	direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7	
4.8.2	document the type of contraception used by patients.	1	2	3	4	5	6	7	
4.9.2	discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7	
4.10.2	discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7	
4.11.2	administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7	
4.12.2	obtain a patient's personal history of drug abuse.	1	2	3	4	5	6	7	
4.13.2	conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7	
4.14.2	discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7	
4.15.2	verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7	

SECTION 5: Prescriber Confidence and Control

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

I am confident in my ability to...		SD							SA
5.1.1	discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7	
5.2.1	discuss the patient's risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7	
5.3.1	discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7	
5.4.1	discuss the results of controlled substance monitoring database queries with patients.	1	2	3	4	5	6	7	
5.5.1	discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7	
5.6.1	recommend long-acting, reversible contraception.	1	2	3	4	5	6	7	
5.7.1	direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7	
5.8.1	document the type of contraception used by patients.	1	2	3	4	5	6	7	
5.9.1	discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7	
5.10.1	discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7	
5.11.1	administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7	
5.12.1	obtain a patient's personal history of drug abuse.	1	2	3	4	5	6	7	
5.13.1	conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7	
5.14.1	discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7	
5.15.1	verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7	

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE PRESCRIBED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neutral 5 Somewhat Agree 6 Agree 7 Strongly Agree

Whether or not I do each of the following is entirely up to me.		SD						SA
5.1.3	Discuss the risks of opioid use during pregnancy.	1	2	3	4	5	6	7
5.2.3	Discuss the patient’s risk of physical dependence and addiction to opioids.	1	2	3	4	5	6	7
5.3.3	Discuss the potential of physical dependence to and withdrawal from opioids in a newborn.	1	2	3	4	5	6	7
5.4.3	Discuss the results of controlled substance monitoring database queries with patients.	1	2	3	4	5	6	7
5.5.3	Discuss a birth control plan when opioids are initiated.	1	2	3	4	5	6	7
5.6.3	Recommend long-acting, reversible contraception.	1	2	3	4	5	6	7
5.7.3	Direct patients to community resources through which long-acting, reversible contraception can be accessed.	1	2	3	4	5	6	7
5.8.3	Document the type of contraception used by patients.	1	2	3	4	5	6	7
5.9.3	Discuss pregnancy status at <u>each visit</u> with patients on long-term opioid therapy.	1	2	3	4	5	6	7
5.10.3	Discuss the expectation that a patient inform you if she becomes, or plans to become, pregnant.	1	2	3	4	5	6	7
5.11.3	Administer a pregnancy test prior to the initiation of opioid therapy.	1	2	3	4	5	6	7
5.12.3	Obtain a patient’s personal history of drug abuse.	1	2	3	4	5	6	7
5.13.3	Conduct a risk assessment or drug abuse screening prior to initiating therapy.	1	2	3	4	5	6	7
5.14.3	Discuss my concern with a patient regarding her drug-taking behaviors when warranted.	1	2	3	4	5	6	7
5.15.3	Verbally refer patients for drug abuse treatment when warranted.	1	2	3	4	5	6	7

SECTION 6: Prescriber Perceptions

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree						
							SD	SA					
6.1	Prescribers like me have a responsibility to prevent neonatal abstinence syndrome						1	2	3	4	5	6	7
6.2	Substance use during pregnancy is a concern in my practice setting						1	2	3	4	5	6	7
6.3	Supervised replacement therapy (medication assisted treatment) with buprenorphine in pregnant women can result in withdrawal symptoms in newborns						1	2	3	4	5	6	7
6.4	Supervised replacement therapy (medication assisted treatment) with methadone in pregnant women can result in withdrawal symptoms in newborns						1	2	3	4	5	6	7
6.5	Use of prescription opioids in pregnancy was adequately covered in my medical training						1	2	3	4	5	6	7
6.6	Evidence-based information about substance use during pregnancy is readily available to me						1	2	3	4	5	6	7
6.7	Evidence-based information about my role in neonatal abstinence syndrome prevention is readily available to me						1	2	3	4	5	6	7
6.8	I have participated in one or more continuing education programs specific to substance use during pregnancy						1	2	3	4	5	6	7
6.9	I have participated in one or more continuing education programs specific to NAS prevention						1	2	3	4	5	6	7
6.10	Generally, I trust other pain specialists in my area						1	2	3	4	5	6	7
6.11	Generally, I trust buprenorphine prescribers in my area						1	2	3	4	5	6	7

6.12 Supervised replacement therapy (medication assisted treatment) in pregnant patients is

Good	1	2	3	4	5	6	7	Bad
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Inappropriate	1	2	3	4	5	6	7	Appropriate

6.13 What percent of newborns diagnosed with neonatal abstinence syndrome (NAS) in Tennessee would you estimate are born to mothers who are undergoing supervised replacement therapy (medically assisted treatment) with either buprenorphine or methadone?

_____ %

SECTION 7: Contraception Perceptions

On a scale of 1 (very inappropriate) to 7 (very appropriate), please rate the appropriateness of the following contraceptive methods for a female patient of childbearing age who is prescribed one or more opioid medications for a chronic condition.

	Very Inappropriate			Very Appropriate			
Cervical Cap	1	2	3	4	5	6	7
Diaphragm	1	2	3	4	5	6	7
Female Condom	1	2	3	4	5	6	7
Implant (Implanon, Nexplanon)	1	2	3	4	5	6	7
Injectable depot (Depo-Provera)	1	2	3	4	5	6	7
Intrauterine device (IUD)	1	2	3	4	5	6	7
Oral contraceptive	1	2	3	4	5	6	7
Patch (OrthoEvra)	1	2	3	4	5	6	7
Sponge	1	2	3	4	5	6	7

Thank you for your time and your expertise!

Please return your questionnaire using the enclosed postage-paid envelope at your earliest convenience.

Appendix D

Community Pharmacists Survey

APPENDIX D - COMMUNITY PHARMACIST SURVEY

SECTION 1: Demographic Information

1.1 Please indicate your gender

- Female Male

1.2 Please indicate your age

- <30 30-44 45-60 61+

1.3 Do you practice in the community pharmacy setting 8 or more hours per month?

- Yes **(please continue to next question)**
 No **(please skip to Section 6 on page 13)**

1.4 How many years have you practiced in the community pharmacy setting?

_____ Years (please enter a numerical value)

1.5 In what **county** is your primary practice setting located?

_____ County

1.6 What is your primary community pharmacy practice setting?

- Chain setting
 Independent setting
 Supermarket/discount store setting
 Other (please specify) _____

1.7 On average, how many hours per week do you work in a community pharmacy practice setting?

- < 8 hours/wk 8-20 hours/wk 21-40 hours/wk > 40 hours/wk
-

SECTION 2: Pharmacist Activities

Given 10 female patients of childbearing age dispensed a prescription opioid for greater than 7 days, with how many of these patients would you expect to...

(Please enter a number from 0-10 for each activity)

- | | |
|------------|--|
| _____ 2.1 | Counsel on the indication for the prescribed medication? |
| _____ 2.2 | Ask about pregnancy status? |
| _____ 2.3 | Document pregnancy status in the patient's medication profile? |
| _____ 2.4 | Discuss the risks of prescription opioid use during pregnancy? |
| _____ 2.5 | Discuss the risk of physical dependence and addiction to opioids? |
| _____ 2.6 | Counsel on the importance of long-acting, reversible contraception (LARC)? |
| _____ 2.7 | Ask if the patient has questions about the prescribed medication? |
| _____ 2.8 | Conduct a risk assessment or drug abuse screening prior to dispensing? |
| _____ 2.9 | Conduct a controlled substance monitoring database (CSMD) query prior to dispensing? |
| _____ 2.10 | Direct to community resources through which long-acting, reversible contraception (LARC) can be accessed? |
| _____ 2.11 | Document the type of contraception to be used while taking the prescription opioid? |
| _____ 2.12 | Communicate with the patient's prescriber's office to verify the prescription opioid is appropriate therapy? |
| _____ 2.13 | Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant? |
| _____ 2.14 | Discuss your concern regarding the patient's drug taking behaviors when warranted? |
| _____ 2.15 | Verbally refer for drug abuse treatment when warranted? |

SECTION 3: Pharmacist Attitudes

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE DISPENSED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

3.1 Counseling on the indication for the prescribed medication is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.2 Asking the patient if she is pregnant is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.3 Documenting pregnancy status in the patient's medication profile is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.4 Discussing the risks of prescription opioid use during pregnancy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.5 Discussing the risk of physical dependence and addiction to opioids is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.6 Counseling on the importance of long-acting, reliable contraception (LARC) is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.7 Asking if the patient has questions about the prescribed medication is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.8 Conducting a risk assessment or drug abuse screening prior to dispensing is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.9 Conducting a CSMD query prior to dispensing the medication is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.10 Directing patients to community resources through which long-acting, reversible contraception can be accessed is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.11 Documenting the type of contraception to be used while taking the prescription opioid is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.12 Communicating with the prescriber's office to verify the prescription opioid is appropriate therapy is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.13 Discussing the need to notify the prescriber if the patient becomes, or plans to become, pregnant is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.14 Discussing my concern with a patient regarding her drug taking behaviors when warranted is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

3.15 Verbally referring patients for drug abuse treatment when warranted is...

Unimportant	1	2	3	4	5	6	7	Important
Unpleasant	1	2	3	4	5	6	7	Pleasant
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Easy	1	2	3	4	5	6	7	Hard

SECTION 4: Pharmacist Perceptions of Others

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE DISPENSED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (should not) to 7 (should), please circle one number for each item indicating how you feel about each of the following statements.

Most people who are important to me think that I...								
	SHOULD NOT			SHOULD				
4.1.1	1	2	3	4	5	6	7	counsel on the indication for the prescribed medication
4.2.1	1	2	3	4	5	6	7	ask the patient if she is pregnant
4.3.1	1	2	3	4	5	6	7	document pregnancy status in the patient's medication profile
4.4.1	1	2	3	4	5	6	7	discuss the risks of opiate use during pregnancy
4.5.1	1	2	3	4	5	6	7	discuss the risk of physical dependence and addiction to opioids
4.6.1	1	2	3	4	5	6	7	counsel on the importance of long-acting, reversible contraception
4.7.1	1	2	3	4	5	6	7	ask if the patient has questions about the prescribed medication
4.8.1	1	2	3	4	5	6	7	conduct a risk assessment or drug abuse screening prior to dispensing
4.9.1	1	2	3	4	5	6	7	conduct a CSMD query prior to dispensing the medication
4.10.1	1	2	3	4	5	6	7	direct patients to community resources through which long-acting, reversible contraception can be obtained
4.11.1	1	2	3	4	5	6	7	document the type of contraception to be used while taking the prescription opioid
4.12.1	1	2	3	4	5	6	7	communicate with the prescriber's office to verify the prescription opioid is appropriate therapy
4.13.1	1	2	3	4	5	6	7	discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant
4.14.1	1	2	3	4	5	6	7	discuss my concern with a patient regarding her drug-taking behaviors when warranted
4.15.1	1	2	3	4	5	6	7	verbally refer patients for drug abuse treatment when warranted

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE DISPENSED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neutral 5 Somewhat Agree 6 Agree 7 Strongly Agree

I possess the skills necessary to...		SD							SA						
5.1.2	counsel on the indication for the prescribed medication	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.2.2	ask the patient if she is pregnant	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.3.2	document pregnancy status in the patient's medication profile	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.4.2	discuss the risks of opiate use during pregnancy	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.5.2	discuss the risk of physical dependence and addiction to opioids	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.6.2	counsel on the importance of long-acting, reversible contraception	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.7.2	ask if the patient has questions about the prescribed medication	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.8.2	conduct a risk assessment or drug abuse screening prior to dispensing	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.9.2	conduct a CSMD query prior to dispensing the medication	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.10.2	direct patients to community resources through which long-acting, reversible contraception can be obtained	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.11.2	document the type of contraception to be used while taking the prescription opioid	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.12.2	communicate with the patient's prescriber's office to verify the prescription is appropriate therapy	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.13.2	discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.14.2	discuss my concern with a patient regarding her drug-taking behaviors when warranted	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.15.2	verbally refer patients for drug abuse treatment when warranted	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Note: Each question in this section refers to FEMALE PATIENTS OF CHILDBEARING AGE DISPENSED A PRESCRIPTION OPIOID FOR GREATER THAN 7 DAYS.

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neutral 5 Somewhat Agree 6 Agree 7 Strongly Agree

Whether or not I do each of the following is entirely up to me.		SD							SA						
5.1.3	Counsel on the indication for the prescribed medication	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.2.3	Ask the patient if she is pregnant	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.3.3	Document pregnancy status in the patient's medication profile	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.4.3	Discuss the risks of opiate use during pregnancy	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.5.3	Discuss the risk of physical dependence and addiction to opioids	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.6.3	Counsel on the importance of long-acting, reversible contraception	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.7.3	Ask if the patient has questions about the prescribed medication	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.8.3	Conduct a risk assessment or drug abuse screening prior to dispensing	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.9.3	Conduct a CSMD query prior to dispensing the medication	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.10.3	Direct patients to community resources through which long-acting, reversible contraception can be obtained	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.11.3	Document the type of contraception to be used while taking the prescription opioid	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.12.3	Communicate with the patient's prescriber's office to verify the prescription is appropriate therapy	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.13.3	Discuss the need to notify the prescriber if the patient becomes, or plans to become, pregnant	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.14.3	Discuss my concern with a patient regarding her drug-taking behaviors when warranted	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5.15.3	Verbally refer patients for drug abuse treatment when warranted	1	2	3	4	5	6	7	1	2	3	4	5	6	7

SECTION 6: Pharmacist Perceptions

On a scale of 1 (strongly disagree) to 7 (strongly agree), please circle one number for each item indicating the extent to which you disagree/agree with each of the following statements.

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree						
							SD	SA					
6.1	Pharmacists like me have a responsibility to prevent neonatal abstinence syndrome						1	2	3	4	5	6	7
6.2	Substance use during pregnancy is a concern in my practice setting						1	2	3	4	5	6	7
6.3	Supervised replacement therapy (medication assisted treatment) with buprenorphine in pregnant women can result in withdrawal symptoms in newborns						1	2	3	4	5	6	7
6.4	Supervised replacement therapy (medication assisted treatment) with methadone in pregnant women can result in withdrawal symptoms in newborns						1	2	3	4	5	6	7
6.5	Use of prescription opioids in pregnancy was adequately covered in my pharmacy training						1	2	3	4	5	6	7
6.6	Evidence-based information about substance use during pregnancy is readily available to me						1	2	3	4	5	6	7
6.7	Evidence-based information about my role in neonatal abstinence syndrome prevention is readily available to me						1	2	3	4	5	6	7
6.8	I have participated in one or more continuing education programs specific to substance use during pregnancy						1	2	3	4	5	6	7
6.9	I have participated in one or more continuing education programs specific to NAS prevention						1	2	3	4	5	6	7
6.10	Generally, I trust pain specialists in my area						1	2	3	4	5	6	7
6.11	Generally, I trust buprenorphine prescribers in my area						1	2	3	4	5	6	7

6.12 Supervised replacement therapy (medication assisted treatment) in pregnant patients is

Good	1	2	3	4	5	6	7	Bad
Useful	1	2	3	4	5	6	7	Worthless
Harmful	1	2	3	4	5	6	7	Beneficial
Inappropriate	1	2	3	4	5	6	7	Appropriate

6.13 What percent of newborns diagnosed with NAS in TN would you estimate are born to mothers who were undergoing supervised replacement therapy (medically assisted treatment)?

_____ %

SECTION 7: Contraception Perceptions

On a scale of 1 (very inappropriate) to 7 (very appropriate), please circle one number for each item rating the appropriateness of the following contraceptive methods for a female patient of childbearing age who is prescribed one or more opioid medications for a chronic condition.

1 2 3 4 5 6 7
Very Inappropriate Somewhat Neutral Somewhat Appropriate Very
Inappropriate Inappropriate Appropriate Appropriate

	Very Inappropriate			Very Appropriate			
Cervical Cap	1	2	3	4	5	6	7
Diaphragm	1	2	3	4	5	6	7
Female Condom	1	2	3	4	5	6	7
Implant (Implanon, Nexplanon)	1	2	3	4	5	6	7
Injectable depot (Depo-Provera)	1	2	3	4	5	6	7
Intrauterine device (IUD)	1	2	3	4	5	6	7
Oral contraceptive	1	2	3	4	5	6	7
Patch (OrthoEvra)	1	2	3	4	5	6	7
Sponge	1	2	3	4	5	6	7

Thank you for your time and your expertise!

Please return your questionnaire using the enclosed postage-paid envelope at your earliest convenience.

Appendix E

Appalachian Student Research Forum Poster



Tennessee Community Pharmacists' Neonatal Abstinence Syndrome (NAS) Prevention Perceptions and Behaviors

Holly Gilliam, PharmD Candidate,1 Ronald Carico Jr, PharmD/MPH Candidate,2 Heather Flippin, PharmD Candidate,1 Casey Murray, PharmD Candidate,1 Jeri Ann Basden, MS,3 Ivy A Click, EdD,3 Nicholas E Hagemeyer, PharmD, PhD1

1 Department of Pharmacy Practice, Gatton College of Pharmacy

2 Departments of Pharmacy Practice and Community and Behavioral Health, Gatton College of Pharmacy and College of Public Health

3 Department of Family Medicine, Quillen College of Medicine



Introduction

- Prescription opioid medications are commonly prescribed and dispensed to women of reproductive age in the United States. Between 2000 and 2009, the prevalence of maternal opioid use increased from 1.19 to 5.63 cases per 1000 hospital births per year...

Methods

Instrument Development

A survey instrument was developed using constructs from the TPB. Community pharmacists' perceived behavioral control (PBC) beliefs specific to substance use and NAS prevention were evaluated.

Instrument Administration

The survey instrument was administered to a stratified random sample of 100 licensed Northeast TN community pharmacists from December 2014 to March of 2015.

Data Analysis

Respondents who reported working less than 8 hours per week were excluded from analysis. Descriptive statistics and Spearman's rho were employed to describe and model the relationship between PBC beliefs and prevention behaviors.

Results

Community Pharmacist Demographic Characteristics (N = 18) table with columns for Variable and Numeric Value. Includes gender, pharmacy setting, age, and hours worked.

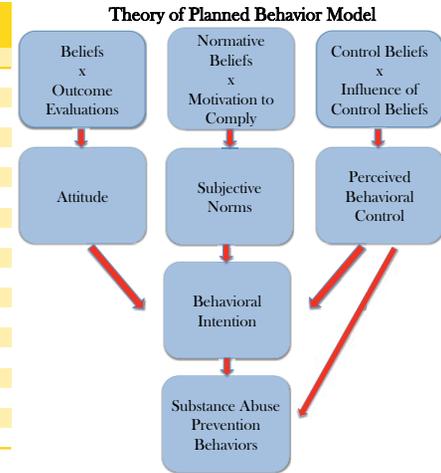


Table with 3 columns: Behavior, Behavioral Engagement (Mean (SD)), and PBC Composite Score (Mean (SD)). Lists 15 specific behaviors and their corresponding scores.

a: Responded to on a 0-10 scale; b: Responded to on a 1-7 Likert scale

Discussion

- NAS is an emerging health threat that is likely to require action from an interdisciplinary healthcare team, including community pharmacists. Wide variation in prevention behaviors was noted across study respondents...

Limitations

- As with many forms of survey research, this study was limited by recall bias. The relatively small sample size (n = 18) limits power, and thus may lead to a higher risk of Type II error in measurements such as the Spearman rho.

Implications

- Pharmacists studied reported high rates of perceived behavioral control with respect to NAS prevention behaviors. Self-reported rates of community pharmacists' NAS prevention behaviors are variable.