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The Impact of the Rhode Island Duplicate Prescription Law on Prescribing Practices for Schedule II Drugs

Bridgit A. Anness
University of Rhode Island

THE IMPACT OF
THE RHODE ISLAND DUPLICATE PRESCRIPTION LAW
ON PRESCRIBING PRACTICES
FOR SCHEDULE II DRUGS

BY

BRIDGIT A. ANNESS

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BRIDGIT A. ANNESS

APPROVED:

Thesis Committee

Major Professor Albert H. Tashman

Norman A. Campbell

Charles Huckabee

Cynthia Halsey

Ronald C. Hogue

Kenneth Marr

DEAN OF THE GRADUATE SCHOOL

THE UNIVERSITY OF RHODE ISLAND

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ABSTRACT

Multiple copy prescription laws have been implemented or proposed in several states to better track the distribution of drugs in Schedule II to the ultimate consumer. The states with such statutes report a 30 to 50 percent decrease in the number of Schedule II prescriptions written as well as a reduction in diversion of these drugs and forgeries. Risk factors were assessed for the effect of the Rhode Island Duplicate Prescription program on prescribers. A questionnaire was mailed to all prescribers (N=3016) registered with the Rhode Island Department of Health Division of Drug Control to prescribe Schedule II drugs. The response rate was approximately 22%. The response group was evaluated for demographics, prescribing history, perception of the impact of the law on prescribing, and knowledge of the law. Associations were determined between prescriber characteristics and two outcomes (effect of the Rhode Island duplicate prescription form on decision-making and therapeutic preference to choose an alternative drug to a clearly indicated Schedule II drug). Both the pre- and post-law groups were evaluated for the outcomes. Odds ratios were calculated for variables significant at the 0.15 level.

Risk factors which explain some of the variation of the outcomes are age, sex, primary professional degree, specialty practice, practice type, number of years licensed, issuance of Schedule II prescriptions, and knowledge of Division of Drug

Control review of duplicate prescriptions for Schedule II.

Multivariate regression models were devised to evaluate prescribers for the risk of perceiving an effect of the form on decision-making and of choosing an alternative drug to a Schedule II. These models assist in identifying those prescribers at higher risk for a certain outcome.

It appears that education of the prescribers about the Rhode Island Duplicate Prescription Law, its purpose, its intent and its workings is needed.

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DEDICATION

This project is dedicated to my father, the late John Joseph Witbeck, who taught me that education spans all ages and cultures, to my husband Walter who taught me that education is only one part of knowledge, and to my daughter Emily who has taught me that motherhood is an education.

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Substance abuse and drug diversion have been and continue to be considerable national problems in terms of health care, economics and societal stability. In an effort to address, in part, these two issues insofar as they relate to legal prescription drugs, nine states have implemented and one state has proposed multiple copy prescription programs. The premise of these programs is to track the distribution of drugs in Schedule II to the ultimate consumer thereby identifying the prescriber, the drug and the patient. The success of these programs in decreasing the number of prescriptions written for Schedule II drugs has prompted an interest in a national multiple copy prescription program. These programs have prompted several special interest groups to question whether multiple copy prescription programs inhibit the prescriber's willingness and ability to prescribe drugs in Schedule II thereby impacting negatively upon good medical practice, economics and the health of patients.

This study shall investigate the impact of the Rhode Island Duplicate Prescription Law on prescribing practices for Schedule II as well as identifying risk factors which may explain a practitioner's willingness to prescribe those substances.

INTRODUCTION

A. Historical Perspectives of Drug Control

The United States has recognized the significance of drug

abuse, illegal drug distribution and the impact of these on society at large. In terms of historical perspective, the first one hundred years of Federal law dealt primarily with quality control (Strauss and Sherman 1985). The Harrison Narcotic Act of 1914 mandated a tax on narcotics as a means of discouraging utilization. In 1927, the Food, Drug and Insecticide Administration was formed as a law enforcement agency which became the Food and Drug Administration (FDA) in 1931. The Federal Food, Drug and Cosmetic Act of 1938 (FDCA) was enacted as a result of the sulfanilamide disaster which required manufacturers to prove safety of products prior to distribution. In 1951, the Durham-Humphrey Amendments required that drugs which could not safely be used without medical supervision must be dispensed pursuant to a prescription written by a licensed practitioner. In 1965, the Drug Abuse Control Amendments were implemented to deal with problems resulting from three therapeutic categories - central nervous system stimulants, central nervous system depressants and hallucinogens. In 1968, the Bureau of Narcotics and Dangerous Drugs (BNDD) in the Department of Justice was formed from the FDA Bureau of Drug Abuse Control to monitor illegal drug trafficking. Following the passage of the Drug Abuse Prevention and Control Act of 1970, the Drug Enforcement Administration (DEA) was created by merging components of several agencies with the BNDD. It mandated the evaluation of all drugs with the potential for abuse and designated these drugs into five distinct schedules (I-V). Those drugs in

Schedule I have no currently accepted medical use in the United States and have the highest potential for abuse. Those drugs in Schedule II are defined as having a currently accepted medical use in the United States and a high abuse potential, with severe psychological or physical dependence liability. The higher the schedule number, the lower the abuse potential. Despite these regulatory efforts, drug abuse and diversion continue to exist in the United States.

According to a 1985 National Household Survey on Drug Abuse by the National Institute on Drug Abuse (NIDA 1985), that of the estimated 15.7% of the United States population over age 12 who have reported using psychotherapeutic drugs, approximately 31% of these respondents have admitted to using these drugs for non-medical purposes. According to the 1985 Drug Abuse Warning Network (DAWN) statistics, legal controlled substances were involved in 53.5% of all drug-related emergency room visits and 49.6% of drug-related deaths (NIDA 1986). In the 1986 list of the top DAWN emergency room statistics, nearly 20% of those drugs listed were Schedule II substances (NIDA 1986). The Drug Enforcement Administration statistics reveal that 80 to 90 percent of drug diversion for non-medical use is at the practitioner and pharmacy levels (U.S. Department of Justice 1987). The concern over Schedule II drugs is that categorically these drugs have a high prevalence for non-medical use, and they result in large health consequences when used non-medically (AMA Department of Substance Abuse 1988).

B. Multiple Copy Prescription Programs in the United States

To provide greater control in the area of distribution of Schedule II drugs to the ultimate user, the multiple copy prescription was devised. According to DEA, the multiple copy prescription creates a closed-distribution system which shows the final level of distribution to the non-hospitalized patient (U.S. Department of Justice 1987). The multiple copy prescription system allows for the collection of information for law enforcement and regulatory purposes in identifying potential diversion by prescribing and dispensing practitioners, "doctor shoppers" (those individuals who attempt to obtain prescriptions from multiple prescribers), drug abusers and forgers. The system provides a deterrent to indiscriminant prescribing and dispensing by making the practitioner more aware that he is being monitored.

Multiple copy prescription laws have existed since 1913 when New York State passed a law in an effort to control opium usage and distribution. This law was revoked in 1915. To date only nine states have implemented and one state has proposed multiple copy prescription laws. These states are California (whose program merits as the oldest, continuous program in existence since 1940), Illinois, Idaho, Hawaii, New York (whose system recently included Schedule III benzodiazepines), Texas, Indiana, Michigan and Rhode Island. Massachusetts recently passed legislation to create a multiple copy prescription program. Collectively, these states

represent over 40% of the total number of prescribers in the United States registered with DEA to prescribe controlled substances (U.S. Department of Justice 1987). Each state, with the exceptions of Michigan and Indiana due to the infancy of their programs, has reported a 30 to 50 percent reduction in Schedule II prescribing within the first two years of the implementation of the program (N.Y.S. Department of Health 1980, U.S. Department of Justice 1987). All states participating in such programs have reported a decrease in the incidence of armed robbery, breaking and entering and other categories of diversion (N.Y.S. Department of Health 1980, U.S. Department of Justice 1987). The DEA's Automation of Reports and Consolidated Orders System data reveal a shift in the purchasing of Schedule III and IV drugs in these states (U.S. Department of Justice 1987). House Representative Fortney H. (Pete) Stark of California has introduced legislation in the 1990 and 1991 Congresses to consider a national multiple copy prescription program as a means to protecting the nation's health care (HR 5529, HR 5530, and HR 5531).

C. The Rhode Island Duplicate Prescription Law

In February 1979, Rhode Island became the sixth state to institute a multiple copy prescription program by statute. As defined in Title 21, Chapter 28, Section 3.18(d) of the Rhode Island Uniform Controlled Substances Act,

> **Prescriptions for controlled substances in schedule II shall be filed separately and shall not**

be refilled. The form of record for prescription slips for controlled substances in schedule II shall consist of two (2) parts, an original and a duplicate which are required to be presented to the pharmacy by the ultimate user or his representative.

Pharmacies dispensing controlled substances in schedule II are required to deliver to the division of drug control all duplicate copies of such prescriptions on or before the fifth day of the month following the date of dispensing. The prescription slip shall be a form provided by the director of health.

Division of Drug Control (DDC) personnel review each duplicate form received. Based upon this data collection, the identification of prescribers, dispensers and patients who might utilize the prescription route to obtain or distribute legal drugs for illegal purposes is readily accessible, as well as information relative to legitimate prescribing patterns and use.

Rhode Island reports a decrease in the number of Schedule II prescriptions as well as a decrease in the number of units of drug dispensed since the implementation of the program. Between 1978 and 1990, there has been an overall 50% reduction in the number of Schedule II prescriptions dispensed (R.I. Department of Health 1990). After an initial distribution of 200 duplicate forms to each prescriber, only 2% of all practitioners reordered forms more than once between 1979 and 1984 (R.I. Department of Health 1989). Between 1979 and 1986, ten practitioners have surrendered or had their licenses revoked due to investigation of their Schedule II prescribing practices (R.I. Department of Health 1989).

D. Perceptions of the Impact of Multiple Copy Prescription Programs on Prescribing

The multiple copy prescription programs have sparked widespread controversy. Although such programs have shown to reduce the quantity of drug dispensed thereby reducing the potential for abuse and diversion, the multiple copy prescription programs have not been uniformly accepted by the medical community. Both the American Medical Association and the American Pharmaceutical Association have made stands against the implementation of a national multiple copy prescription law. These organizations argue that such programs are an invasion of the prescriber's confidentiality to prescribe and patient confidentiality. The argument of patient confidentiality was heard in the New York State case Whalen v. Roe (Whalen 1977). The District Court ruled that the use of the triplicate form in New York was an unconstitutional invasion of privacy. This ruling was overturned by the U.S. Supreme Court in 1977 stating that the identification of a patient on a prescription was a reasonable means of the State's police powers.

The DEA contends that no significant complaints from patients or physicians have been received in any of the program states concerning the laws' interference with prescribing these substances or ability to obtain quality health care (U.S. Department of Justice 1987). A study conducted in Texas following the implementation of its triplicate prescription law showed a 60.4% decrease in the number of Schedule II prescriptions written in the first year

of the program and concluded that the law discouraged the prescribing of Schedule II drugs (Sigler et al. 1984). In an overview article about states with multiple copy prescription programs, the authors acknowledge the reduction of the prescribing of Schedule II drugs and offer several anecdotal reasons such as prescriber education or the utilization of Schedule III, IV or V drugs for the sake of convenience (Strauss and Bracelin 1984). Some manufacturers of Schedule II medications argue that multiple copy prescription programs are costly for the number of diversion cases convicted, patient confidentiality is compromised, the forms have street value thereby endangering the prescriber and his staff, and prescribers may alter their practices to avoid scrutiny by the law enforcement officials (Konnor, 1983).

A review of the literature reveals several theories for predicting physicians' prescribing (Soumerai and Avorn 1987, Boreham 1989), the interaction among criteria when prescribing (Zelnio 1982) and means to improve physicians' decision making (Soumerai and Avorn 1990, Peterson and Goldberg 1989). These theories do not provide an understanding of how a law such as the multiple copy prescription law interacts or affects prescribing practices.

The identification of the effects of the Rhode Island Duplicate Prescription Law on prescribing practices for Schedule II drugs is potentially inferable to other states already implementing such programs or to states proposing similar statutes. The purpose of this research project

is to describe the perceptions of licensed practitioners concerning the Rhode Island Duplicate Prescription Law on prescribing practices, to document the practitioner's willingness and ability to prescribe Schedule II drugs which are indicated as the primary drug(s) of choice and to describe the prescribers' perceptions of the Program and how it has affected their behavior by certain risk factors.

DATA COLLECTION

A cover letter and questionnaire were mailed to all potential prescribers (n=3016) of Schedule II drugs registered with the Rhode Island Division of Drug Control. The purpose of these vehicles was to define the impact of the Rhode Island Duplicate Prescription law on prescribing practices for Schedule II drugs. The target population was comprised of medical physicians, osteopathic physicians, dentists, podiatrists and veterinarians. This population represented both in-state and out-of-state practitioners. A set of mailing labels of those practitioners registered with Rhode Island Division of Drug Control (DDC) to prescribe Schedule II drugs was obtained from DDC in June, 1990. It contained the names and addresses of 2724 medical and osteopathic physicians, 211 dentists, 33 podiatrists and 48 veterinarians (3016 *in toto*). A cover letter (Appendix A) describing the intent of the questionnaire as a data collection vehicle and the intent of the authors to utilize the data was included with the two-paged questionnaire. A self-addressed stamped return envelope was included in each packet.

The questionnaire (Appendix A) was developed to define several study categories. All questions were followed by several answer options. The questionnaire was divided into four parts, each prefaced by an explanation of the purpose of the section, instructions on how to identify one's responses, and qualifying statements which assured the anonymity of the

respondent due to the sensitive nature of the subject matter and the aggregate manner in which the data would be processed. Each question was column-coded for ease of data entry.

The purpose of part I, Sections A and B was to demographically describe the respondent. Section A gathered information concerning the practitioner's primary professional degree, specialty practice, board certification and practice setting. Inquiries to the number of years as a licensed practitioner in any jurisdiction and in Rhode Island, to location of practice, to sex and to age were made in Section B.

The strategy of Part II was two-fold. First, information concerning the practitioner's issuance of prescriptions for Schedule II drugs was gathered. This also included the types of Schedule II drugs written for as well as an approximation of the number of prescriptions for these substances issued per month. Second, the respondent was asked if he/she was a licensed practitioner in Rhode Island prior to 1979, the year in which the Duplicate Prescription law was passed. If the answer was positive, the respondent was then queried whether a change was perceived in prescribing patterns for Schedule II drugs. If yes, a battery of questions identifying several reasons explaining the change was included. The purpose of the dichotomization of respondents into the categories of practicing prior to and after 1979 was to describe a variation in the two groups as well as to analyze change in prescribing patterns.

Part III attempted to determine the effect of the Rhode

Island Duplicate Prescription law on the practitioner's prescribing of Schedule II drugs and to ascertain the practitioner's knowledge of the law and its intent. Answer options to all questions in Part III were based on a LIKERT scale ranging from 1 (strongly agree) to 5 (strongly disagree). The first eight questions in Part III asked if and how the duplicate prescription law affected the prescriber's choice of drugs in creating a therapeutic regimen as well as how the prescriber perceived the impact of the law on the patient. The next eight questions challenged the prescriber's knowledge of the law and how the prescriber perceived the intent and benefits of the law.

The final section (Part IV) of the questionnaire was designed to establish the direct repercussions the law has had on the prescriber. This included a question on how the prescriber perceived the impact of the law on quality of care and a question relating to Division of Drug Control review of the duplicate prescription forms and knowledge of a colleague who has undergone licensure limitations due to his Schedule II prescribing practices and the subsequent effect on the respondent's prescribing practices. This final section also created a forum by which the respondent was invited to convey his extemporaneous thoughts about the Rhode Island Duplicate Prescription Law.

The mailing of the questionnaire began in November, 1990. A cut-off date of January 1, 1991 was made for the inclusion of responses for the data file. No attempt for a second

mailing of the questionnaire was made. All responses were reviewed and hand-coded for specialty practice.

DATA ANALYSIS

The data collected from the questionnaire were analyzed using the Statistical Analysis System (SAS) Version 6.06 on the IBM mainframe computer at the University of Rhode Island. The focus of the analysis was the relationship between the Rhode Island Duplicate Prescription Law and the therapeutic decision-making process and certain demographic characteristics.

The PROC FREQ procedure was used in the initial analysis to describe the frequency of each variable. This led to an identification of potential dependent variables to be used in later analyses. These dependent variables were recoded to a bivariate structure. Chi-square statistics were performed on dependent variables to measure association. The levels of significance were chosen as follows: highly significant relationships had p-values of less than 0.01, significant relationships had p-values of 0.01 to 0.10, and marginally significant relationships had p-values of greater than 0.10 to 0.15. The dependent variables chosen for the analysis of this project were the effect of the Rhode Island Duplicate Prescription form on the prescriber's decision-making in the

creation of a therapeutic regimen (Part III, Question 3 of the questionnaire) and the preference of a prescriber to choose an alternative drug to a Schedule II in a situation where the Schedule II drug was clearly indicated (Part III, Question 1 of the questionnaire). The research questions examined were:

1.) what is the effect of the Rhode Island Duplicate Prescription Form on prescriber's decision-making, and

2.) is there a preference for the prescriber to choose an alternative drug to a clearly indicated Schedule II drug.

The independent variables of interest were identified as the following: primary professional degree, specialty practice, practice setting, current practice location, number of years as a licensed professional in any jurisdiction, practice in Rhode Island before 1979, issuance of prescription(s) for Schedule II drugs, approximate number of Schedule II prescriptions issued per month, knowledge of review of prescribing by Division of Drug Control, age and sex. Odds ratios (OR) for the bivariate relationship between the dependent and independent variables were calculated to estimate risk ratio using the following formula (Kleinbaum 1982):

$$OR = \frac{(\#\ \text{exposed cases}) * (\#\ \text{unexposed non-cases})}{(\#\ \text{exposed non-cases}) * (\#\ \text{unexposed cases})} .$$

A 95% confidence interval (91% CI) was calculated on the odds ratio using the following formula:

$$95\%\ CI = OR^{1 \pm (1.96/X)}$$

where OR is the odds ratio and X is the square root of Chi-square.

Possible interaction terms were explored for the model. These terms were created in the DATA step of the SAS program. The interaction terms were included in the analysis of the model. These interaction terms are listed in the Results. The purpose of the exploration of interaction terms in the creation of the Rhode Island Duplicate Prescription Form Effects Model and the Therapeutic Preference Model is that the interaction effect between two or more independent variables may be lesser or greater that the sum of the effect of those independent variables.

The initial models were tested for multicollinearity using the PROC REG procedure with COLLIN option. Those variables having high collinearity were dropped from the model, and the model was retested for multicollinearity with the remaining variables. Final models were tested using PROC LOGIST with the STEPWISE option. Statistics derived from this final step were used to determine the multivariate adjusted risk odds ratios of the independent variables.

The adjusted risk odds ratios, ROR (adj.), for all independent variables in the final model as well as the model was calculated using the following formula (Kleinbaum 1982):

$$ROR = e^{(B + E_x S_x W_x)}$$

The ninety-five percent confidence intervals for the estimates of relative risk were calculated using the following formula:

$$CI = e^{B \pm Z(Var)}$$

Dichotomization of Variables

Dependent Variables:

Rhode Island Duplicate Prescription Form Affects Therapeutic Decision-making Process	0=Disagree 1=Agree
Prefer to Prescribe an Alternative Drug in a Situation Where a Schedule II Drug is Indicated	0=Disagree 1=Agree

Independent Variable

Primary Professional Degree	0=Non-MD 1=MD
Specialty Practice	0=No 1=Yes
Practice Type	0=Solo 1=Non-Solo
Presently Practicing in Rhode Island	0=No 1=Yes
Number of Years Licensed in Any Jurisdiction	0=Up to 10 1=Over 10
Practiced in Rhode Island Prior to 1979	0=No 1=Yes
Has Ever Issued Schedule II Prescription	0=No 1=Yes
Number of Schedule II Prescriptions Issued per Month	0=Zero 1=$\geq$ One

Knowledge of Division of Drug Control Review	0=No 1=Yes
Age	0=Up to 40 1=Over 40
Sex	0=Male 1=Female

RESULTS

A total of 3016 questionnaires were mailed to prescribers registered with Division of Drug Control. The number of undeliverable questionnaires was 43. Of those considered mailable, 20 were returned either unanswered or incomplete, 3 were returned after the proposed cut-off date, and 661 were considered complete (22.2%).

A. Characteristics of Prescribers

1. Demographics of Prescribers

A total of 661 prescribers responded to the survey. Medical physicians represented 80.5% of the total number of respondents, and of those in practice in Rhode Island before 1979, 85.4% were medical physicians compared to 76.1% of those in practice in Rhode Island after 1979. Males dominated the study group, representing 82.5% of the study group. Nearly 25% of the respondents in the post-1979 group were female, while only 6.4% of the pre-1979 group were females. This reflects a general trend that women are representing a greater percentage of those in health care professions. Although 39.2% of the study group were under 40 years of age, more than 70% of the respondents in the post-1979 group were under 40 years of age, and 2.7% of the respondents in the pre-1979 group were under 40. Only 16.5% of the study group stated that it did not have a specialty practice. A list of

the distribution of specialties is found in Appendix C.

(Table 1)

Table 1. Demographic Characteristics of Prescribers

Characteristic	% Total (n=661)	% in Practice Before 1979 (n=295)	% in Practice After 1979 (n=355)
Sex			
Male	82.5	91.5	74.9
Female	16.3	6.4	24.8
Age Category			
Under 30	2.9	0.0	5.4
30 to 39	36.3	2.7	65.1
40 to 49	27.5	33.9	22.8
50 to 59	16.2	28.1	5.4
60 to 69	11.0	22.7	0.9
Over 70	5.7	12.2	0.3
Professional Degree			
MD	80.5	85.4	76.1
DO	6.1	4.4	7.3
DMD/DDS	9.7	7.8	11.5
DPM	2.0	1.0	2.8
DVM	1.5	1.0	2.0
Specialty Practice			
Yes	78.5	85.4	76.1
No	16.5	14.9	17.7
Board Certification			
Yes	68.1	66.4	69.0
No	16.5	19.0	14.4

2. Demographics of Prescribers' Practices

Forty-one percent of the respondents described their practice type as solo, and 2.1% stated that they are employed in the government or industry sectors. Moreover, 21.1% of the prescribers in the post-1979 group indicated that the hospital setting was their practice type while 10.2% of the respondents in the pre-1979 group stated that they were presently practicing in a hospital. Nearly 90% of the respondents were currently practicing in Rhode Island. More than 94% of those in the post-1979 group stated that they had been licensed in any jurisdiction for no more than 20 years (versus 40.4% for the pre-1979 group), while 59.3% of the pre-1979 group had been licensed for more than 20 years (versus 3.9% for the post-1979 group). An overwhelming majority of respondents (91.1%) indicated that they have practiced in Rhode Island for more than 10 years. (Table 2).

Table 2. Characteristics of Prescribers' Practices

Characteristic	% Total (n=661)	% In Practice Before 1979 (n=295)	% In Practice After 1979 (n=355)
Practice Type			
Solo	41.0	59.0	26.2
Small Group (2-4)	19.5	14.6	23.7
Large Group (≥5)	12.4	10.2	14.4
Hospital	16.5	10.2	21.1
Government/ Industry	2.1	1.7	2.5
Other	5.4	2.7	7.9
Number of Years Licensed			
Under 5	15.6	0.7	28.2
6 to 10	25.0	0.7	45.9
11 to 20	28.9	39.0	20.6
21 to 30	15.4	29.8	3.1
31 to 40	8.5	17.3	0.7
Over 40	6.2	12.2	1.1
Presently Practicing in Rhode Island			
Yes	89.4	89.8	91.0
No	9.5	9.2	8.5
Number of Years in Rhode Island			
0	2.9	1.4	3.7
1 to 10	52.3	7.1	90.7
11 to 20	23.4	46.1	4.5
21 to 30	11.3	24.7	0.3
Over 30	9.2	20.3	0.0
Practiced in RI Before 1979			
Yes	44.6		
No	53.7		

3. Prescribing of Schedule II Drugs

Regarding the total sample, 88.5% have prescribed drugs in Schedule II for their ambulatory, non-hospitalized patients. Seventy percent of the sample also revealed that they prescribed between one and twenty-five Schedule II prescriptions per month, and analgesic narcotics in that schedule were prescribed by 76.6% of the group. (Table 3).

Table 3. Prescribing of Schedule II Drugs

Characteristic	% Total[1] (n=661)	% In Practice Before 1979 (n=295)	% In Practice After 1979 (n=355)
Prescribes Schedule II Drugs			
Yes	88.5	89.5	89.9
No	9.4	9.5	9.3
Number of Schedule II R_x Per Month			
0	21.6	20.0	23.7
1 to 25	70.5	72.2	70.7
Over 25	4.4	5.4	3.4
Type of Schedule II Drug Prescribed			
Narcotic	76.6	77.6	77.5
Sedative/ Hypnotic	22.1	27.8	19.0
CNS Stimulant	17.9	14.9	20.3
Other	5.9	5.1	6.8

[1]% of total may be larger or smaller than range between pre- and post-1979 groups due to attrition from lack of response.

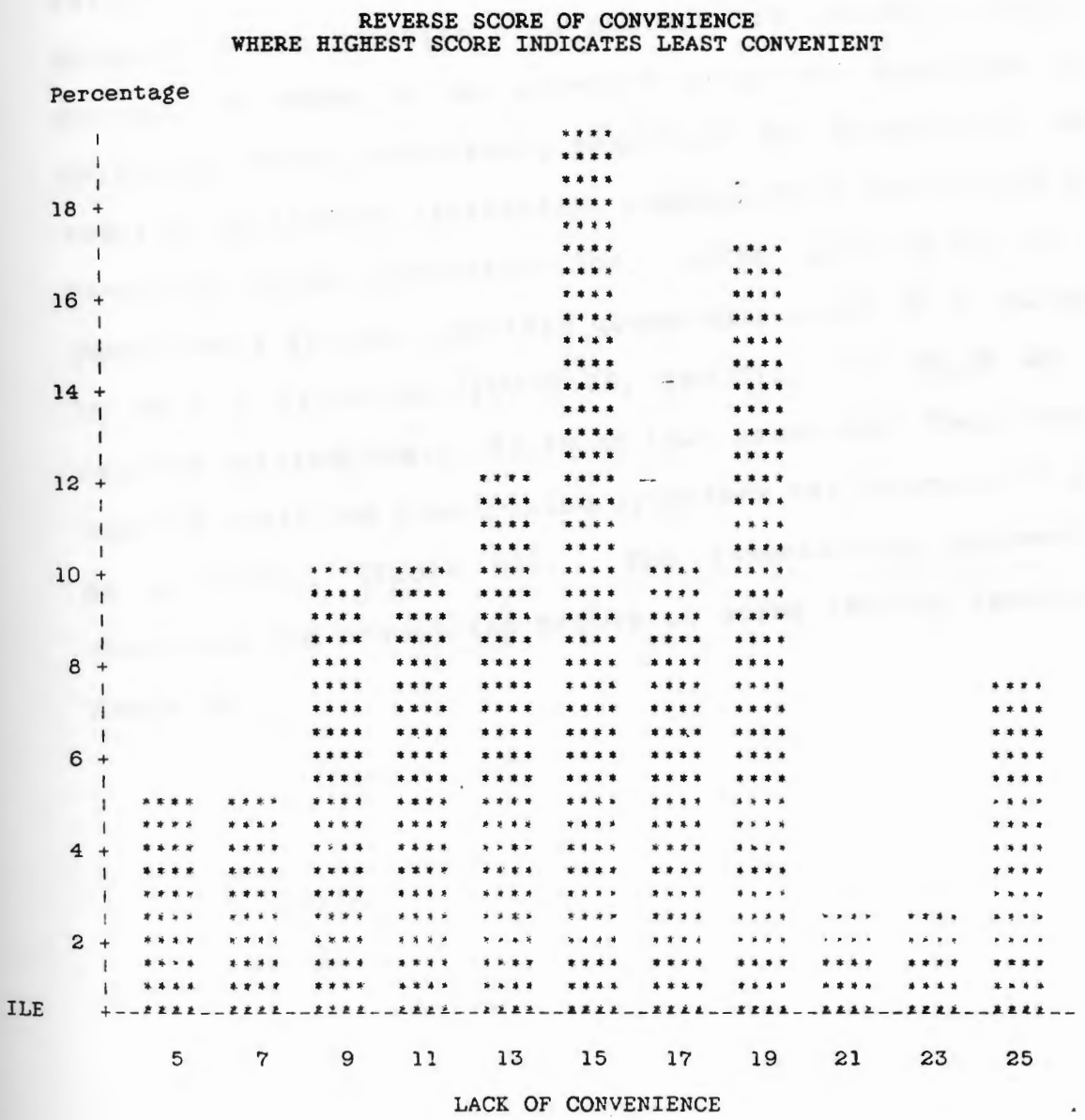
4. Change in Prescribing Practices for Schedule II Drugs for Those in Practice in Rhode Island Before 1979

Of those in practice in Rhode Island prior to the passage of the Duplicate Prescription Law, 59 respondents (20%) perceive a change in their prescribing practices for Schedule II drugs. The availability of therapeutic alternatives to Schedule II drugs and a better risk-benefit ratio for the patient by utilizing an alternative to the Schedule II drug were indicated as reasons for the change in prescribing by 44.1% of this group. However, the most commonly mentioned reason for the decrease in prescribing of Schedule II drugs was that the Schedule II prescription form was not handy to use. Nearly half of the respondents (40.7%) state that the form was not difficult to use. Lack of prescribing confidentiality, lack of patient confidentiality and pharmacy problems were not reasons for the decrease in prescribing of Schedule II drugs by approximately one-third of the respondents of this sub-group (35.6%, 32.2% and 33.9% respectively). (Table 4). A plot of the reverse scores to indicate convenience of the form, i.e. the higher the score, the more inconvenient the form appears to be for the prescriber, shows a skew to the right. (Figure 1).

Table 4. Reasons Identified for the Decrease in Prescribing Schedule II Drugs by Those in Practice in Rhode Island Before 1979 Whose Prescribing Patterns Have Changed (n=59).

Reasons	% Agree	% Disagree	% No Effect No Answer
Availability of Therapeutic Alternatives	44.1	18.6	37.3
Better Risk-Benefit Ratio	44.1	15.3	40.6
Patient Mix	15.3	13.6	71.1
Fewer Utilization Problems with Alternatives	28.8	15.3	55.9
Difficulty with Form	22.0	40.7	37.3
Lack of Handiness of Form	47.5	18.6	33.9
Lack of Prescribing Confidentiality	11.9	35.6	52.5
Lack of Patient Confidentiality	20.3	32.2	52.5
Pharmacy Problems	16.9	33.9	50.8

Figure 1. **Reverse Score of Convenience of Duplicate Prescription Form for Those Respondents in Practice in Rhode Island before 1979 Who Identify a Change in Prescribing**



5. The Rhode Island Duplicate Prescription Law and Prescribing Practices

Of the entire study group, 34.2% stated that the Rhode Island Duplicate Prescription Law affected their decision process in the creation of a therapeutic regimen. Nineteen percent of those in the pre-1979 group had knowledge of a colleague whose prescribing practices for Schedule II drugs resulted in license limitation, suspension or revocation or in mandatory drug rehabilitation, while only 9.9% of the respondents in the post-1979 group were aware of a colleague in such a situation (X^2=12.38, p=0.0). Of those who did respond affirmatively, 23.4% of that group felt that they had limited their own prescribing practices for Schedule II drugs as a result. (Table 5A). The associations between the responses and practicing before or after 1979 is reported in Table 5B.

Table 5A. The Rhode Island Duplicate Prescription Law and Prescribing Practices[1]

Effect of Law	% Total (n)	% In Practice Before 1979 (n)	% In Practice After 1979 (n)
Duplicate R_x Affects Decision			
Agree	34.2 (226)	35.3 (104)	34.1 (121)
Disagree	36.8 (243)	33.9 (100)	40.0 (142)
No Effect	23.2 (153)	24.4 (72)	22.5 (80)
Knowledge of Colleague Under Review			
Yes	14.1 (93)	19.0 (56)	9.9 (35)
No	81.4 (538)	75.9 (224)	88.2 (313)
Limitation of Schedule II Prescriptions			
Yes	23.4 (22)	25.0 (14)	20.0 (7)
No	65.6 (61)	66.1 (37)	65.7 (23)

[1]Column totals may not add up to 100% due to lack of response.

Table 5B. The Rhode Island Duplicate Prescription Law and Prescribing Practices and the Association Between Pre- and Post-1979 Groups.

Effect of Law	X^2	P-value
Duplicate Prescription Affects Decision	1.14	0.29
Knowledge of Colleague Under DDC Review	12.38	0.00
Limitation of Schedule II Prescriptions	0.17	0.68

6. Prescribers' Perceptions of the Rhode Island Duplicate Prescription Law

Prescribers were asked how they perceived the benefits of the Rhode Island Duplicate Prescription Law. A majority (64.1%) agreed that the law helped to reduce the abuse of Schedule II drugs. The difficulty for forgery of prescriptions for these drugs was identified as a beneficial end by 77.7% of the study group. For purpose of comparison, only those who agreed (i.e. those who strongly agreed plus those who agreed) and those who disagreed (i.e. those who strongly disagreed plus disagreed) were studied. The Chi-square for the relationship between the response for forgery and whether the respondent had practiced in Rhode Island before the passage of the law was 3.29 ($p=0.07$) indicating a significant relationship. Slightly more than 50% of the target group was aware that Division of Drug Control reviewed each duplicate prescription form, and a statistically significant relationship existed between knowledge of the review and whether the respondent had practiced in Rhode Island before the passage of the law ($X^2=6.76$, $p=0.01$). Of those respondents in the pre-1979 group, 55.3% agreed that the state should mandate review of prescribing for Schedule II drugs, while 62.8% of the post-1979 group agreed. This perception and practicing after the passage of the law had a highly associated relationship ($X^2=6.04$, $p=0.01$). Most respondents (76.4%) stated that their patients did not report problems concerning pharmacies when attempting to fill Schedule II prescriptions,

and there was no difference between the pre- and post-1979 groups for this response. Overall, 45.1% of the study group felt that the Rhode Island Duplicate Prescription Law had no effect on the quality of care they delivered to their patients, while 22.5% of the total group stated that the Law had a beneficial effect on quality of care. The relationship between responses for this question and whether a respondent practiced before 1979 or not was significant ($X^2=6.33$, $p=0.04$). Table 6A summarizes the perceptions of the law, and Table 6B summarizes the Chi-square and p-values for the relationships between the perceptions of the law and the pre- and post-1979 groups.

Table 6A. Prescribers' Perceptions of the Rhode Island Duplicate Prescription Law[1].

Perception	% Total[2] (n=661)	% in Practice Before 1979 (n=295)	% In Practice After 1979 (n=355)
Reduces Abuse of C-II Drugs			
Agree	64.1	66.1	64.7
Disagree	14.1	13.6	14.6
No Effect	13.3	11.5	15.2
Thwarts Doctor Shoppers			
Agree	58.1	63.1	55.2
Disagree	16.3	16.3	16.9
No Effect	17.1	12.5	21.1
Decreases C-II Availability			
Agree	46.0	49.5	43.7
Disagree	24.1	23.1	25.6
No Effect	21.3	18.6	24.2
Makes Forgery Difficult			
Agree	77.2	77.3	78.9
Disagree	6.8	8.8	5.1
No Effect	8.5	6.4	10.4
Makes Aware of Side Effects			
Agree	57.3	61.0	55.8
Disagree	18.6	16.6	20.6
No Effect	17.1	14.9	19.2
Decreases Overutilization			
Agree	66.4	71.5	63.7
Disagree	11.0	11.2	11.0
No Effect	15.6	10.5	20.3
Identifies Abusers in Medical Community			
Agree	51.6	56.9	48.2
Disagree	16.8	14.9	18.6
No Effect	22.1	19.0	25.4
Protects Prescriber from the Patient			
Agree	64.0	69.5	60.8
Disagree	9.8	9.2	10.4
No Effect	19.5	16.3	22.8
Aware of DDC Review			
Yes	50.1	55.6	46.5
No	45.7	40.3	51.3

Table 6A. (Cont.)

Perception	% Total (n=661)	% In Practice Before 1979 (n=295)	% In Practice After 1979 (n=355)
State Should Mandate Review of Prescribing			
Agree	58.5	55.3	62.8
Disagree	23.1	12.4	19.7
No Effect	11.2	9.2	13.0
Patients Report Problems With Pharmacy			
Yes	19.3	19.0	18.3
No	76.4	76.3	78.0
Affects Quality of Care			
Yes, Beneficial	22.5	23.7	22.3
Yes, Negative	6.2	8.5	4.2
No	45.1	42.0	48.5

[1]Columns do not add up to 100% due to lack of responses.
[2]Percent of total group may appear larger or smaller than the range between the two separate groups due to attrition in reponses in dichotomizing the study group.

Table 6B. The Association Between the Prescribers' Perceptions of the Rhode Island Duplicate Prescription Law and Practice in Rhode Island Before or After the Passage of the Law.[1]

Perception	X^2	P-value
Reduces Abuse of C-II Drugs	0.18	0.68
Thwarts Doctor Shoppers	0.61	0.44
Decrease C-II Availability	1.38	0.24
Makes Forgery Difficult	3.29	0.07
Makes Aware of Side Effects	2.07	0.15
Decreases Overutilization	0.15	0.70
Identifies Abusers in the Medical Community	3.04	0.08
Protects Prescriber from the Patient	0.94	0.33
Aware of DDC Review	6.76	0.01
State Should Mandate Review of Prescribing	6.04	0.01
Patients Report Problems With Pharmacy	0.08	0.77
Affects Quality of Care	6.33	0.04

[1]Chi-squares and p-values are for the comparison of the extremes in responses (i.e., agree and disagree) and the pre- and post- 1979 groups.

7. Perceptions of Prescribers' Willingness to Prescribe Agents in Schedule II Which are the Primary Drug(s) of Choice

Prescribers were asked several questions designed to measure their willingness and ability to prescribe Schedule II drugs. Nearly one-third (32.8%) of the respondents stated that they preferred to prescribe drugs other than Schedule II medications (i.e. Schedule III, IV or V or non-scheduled legend drugs) in situations where a Schedule II drug is clearly indicated. The availability of alternative medications to Schedule II drugs was a reason for <u>not</u> prescribing Schedule II drugs for 71% of the total group. The concern over malpractice litigation resulting from the use of an alternative drug to a Schedule II when the Schedule II was clearly indicated is apparent in 18.2% of the target group. Although 51% and 54% of the study group agreed that the use of a scheduled alternative or a non-scheduled alternative respectively may have adverse consequences for the patient, 56.6% of the respondents believe that there is not less risk for the patient in using an alternative drug to the Schedule II (X^2=7.02, p=0.01). Nearly 62% of the study group disagreed that there was better patient compliance in using an alternative drug to a Schedule II, and a significant relationship between that response and spatial time with respect to the passage of the Law (X^2=3.34, p=0.07). Table 7A summarizes the responses to the questions concerning perception of the willingness to prescribe Schedule II drugs, and Table 7B summarizes the Chi-squares and p-values.

Table 7A. Prescribers' Perceptions of the Willingness to Prescribe Agents in Schedule II Which are the Primary Drugs of Choice.[1]

Perception	% Total[2] (n=665)	% In Practice Before 1979 (n=295)	% In Practice After 1979 (n=355)
Prefer to Prescribe Alternative to C-II			
Agree	32.8	31.9	34.4
Disagree	53.4	51.5	55.5
No Effect	8.2	10.8	6.2
Therapeutic Alternative Reason to Not Prescribe Schedule II Drug			
Agree	71.0	69.8	73.2
Disagree	14.1	14.9	13.5
No Effect	9.1	8.5	9.9
Use of Alternative May Cause Malpractice			
Agree	18.2	19.3	17.2
Disagree	54.9	49.8	60.6
No Effect	20.1	23.4	18.0
Use of Schedule III,IV or V Alternative May Cause Pt. Adverse Consequence			
Agree	51.0	47.5	54.6
Disagree	27.8	29.8	27.0
No Effect	14.2	14.9	16.9
Use of Non-Scheduled Alternative May Cause Pt. Adverse Consequence			
Agree	54.0	53.2	55.5
Disagree	21.5	23.7	20.3
No Effect	14.5	13.5	15.7
Less Risk for Patient in Using Alternative			
Agree	19.4	23.4	16.6
Disagree	56.6	50.8	62.3
No Effect	16.0	17.3	15.5
Better Patient Compliance with Non-Schedule II			
Agree	5.9	7.8	4.5
Disagree	61.9	60.3	64.5
No Effect	24.4	23.7	25.4

[1]Columns do not add up to 100% due to lack of responses.
[2]% of total may appear larger or smaller due to attrition.

Table 7B. The Association Between the Prescribers' Perceptions of the Willingness to Prescribe Agents in Schedule II Which Are the Primary Drugs of Choice and Practice in Rhode Island Before or After the Passage of the Duplicate Prescription Law.[1]

Perception	X^2	P-value
Prefer to Prescribe Alternative to Schedule II	0.00	0.99
Therapeutic Alternative Reason to Not Prescribe Schedule II	0.41	0.52
Use of Alternative May Cause Malpractice	2.16	0.14
Use of Schedule III, IV or V Alternative May Cause Patient Adverse Consequence	1.68	0.19
Use of Non-scheduled Alternative May Cause Patient Adverse Consequence	1.00	0.32
Less Risk for Patient in Using Alternative	7.02	0.01
Better Patient Compliance with Non-schedule II	3.34	0.07

[1]Chi-squares and p-values are for the comparison of the extremes in responses (i.e. agree and disagree) and the pre- and post-1979 groups.

B. Bivariate Analysis of Independent and Dependent Variables

The analysis between the independent and dependent variables was limited to eleven pertinent independent variables and the two dependent variables of interest (whether the Schedule II duplicate prescription form affected decision making when creating a therapeutic regimen and if there existed a preference for the prescriber to select alternatives to a Schedule II drug in a situation where the Schedule II drug was clearly indicated). Most variables, both independent and dependent, were altered in such a way to create a bivariation within the variable to illustrate exposure versus unexposure. This allowed for calculation of Chi-square, p values, odds ratio and 95% confidence intervals. The following independent variables were altered in such a manner:

1. Age	Over 40 years of age 40 or younger
2. Sex	Female Male
3. Degree	Medical physicians Non-MD professionals
4. Specialty	Has specialty practice Does not have specialty
5. Practice Type	Non-solo practice Solo practice
6. Presently Practicing in Rhode Island	Yes No
7. Number of Years Licensed	Over 10 years Up to 10 years

8.	Practiced in RI Prior to 1979	Yes No
9.	Has Ever Issued Schedule II Prescription	Yes No
10.	Number of Schedule II Prescriptions Per Month	One or more Zero
11.	Knowledge of Division of Drug Control Review	Yes No

The dependent variables of interest were collapsed as follows:

1.	RI Duplicate Prescription Form Affects Decision-making	Agree Disagree
2.	Prefers to Prescribe Alternatives to Schedule II	Agree Disagree

Odds ratios and 95% confidence intervals were calculated.

1. The Bivariate Relationship Between the Independent Variables and If the Rhode Island Duplicate Prescription Form Affects Decision-making for the Study Group

The summary of the relationship between whether the Rhode Island duplicate prescription form affects the decision-making process in the creation of a therapeutic regimen and the independent variables for the entire study group is found in Table 8. Six variables exhibited Chi-squares greater than 2.00 (degree, specialty, number of years licensed, presently practicing in Rhode Island, sex and number of prescriptions issued per month). Practitioners with an MD degree were 2.03 times as likely to agree that the form affects one's decision (95% CI 1.25, 3.29). The risk that having a specialty practice was associated with agreeing that the form affects

one's decision was 2.16 (95% CI 1.26, 3.70). Two variables, sex and number of prescriptions issued per month, had odds ratios of less than 1 (OR=0.47 and 0.68 respectively).

Table 8. Summary of the bivariate association of the independent variables and the effect of the form.

Variable	X^2	p-value	OR	95% CI
Degree (MD vs. Non-MD)	8.23	0.004	2.03	1.25, 3.29
Specialty (Yes vs. No)	7.86	0.005	2.16	1.26, 3.70
Practice Type (Solo vs. Not)	0.11	0.745		
# Yrs Licensed (>10 vs $\leq$10)	2.93	0.087	1.38	1.05, 1.45
Practice in RI (Yes vs. No)	2.07	0.150	1.74	1.22, 3.70
Sex (F vs. M)	8.00	0.005	0.47	0.28, 0.79
Age (>40 vs. $\leq$40)	1.63	0.202		
Issuance of Rx (Yes vs. No)	0.36	0.547		
# Rx/Month ($\geq$1 vs 0)	2.61	0.106	0.68	0.53, 0.90
Before 1979 (Yes vs. No)	1.14	0.286		
Review (Yes vs. No)	1.81	0.178		

2. Bivariate Association Between Independent Variables and If the Rhode Island Duplicate Prescription Form Affects Decision-making for the Pre-1979 Group

The analysis for the group of respondents who stated that they were in practice in Rhode Island prior to 1979 and the association of independent variables and if the Schedule II prescription form affects decision-making is presented in Table 9. The bivariate analysis reveals that

there are three variables which have cells too small to count, i.e., there were five or less respondents in a particular cell. These variables were the number of years licensed, presently practicing in Rhode Island and age. Of the remaining variables, the review variable had a Chi-square of 3.03 and was significant (p=0.082). The odds ratio associated with this variable was 0.61.

Table 9. Summary of the bivariate association of the independent variables and the effect of the form for the pre-1979 group.

Variable	X^2	p-value	OR	95% CI
Degree (MD Vs. Non-MD)	1.25	0.264		
Specialty (Yes vs. No)	0.42	0.520		
Practice Type (Solo vs. Not)	0.07	0.787		
# Yrs Licensed (>10 vs. ≤10)	CELLS TOO SMALL TO COUNT			
Practice in RI (Yes vs. No)	CELLS TOO SMALL TO COUNT			
Sex (F vs. M)	0.00	0.949		
Age (>40 vs. ≤40)	CELLS TOO SMALL TO COUNT			
Issuance of Rx (Yes vs. No)	0.71	0.398		
# Rx/Month (≥1 vs. 0)	0.14	0.713		
Review (Yes vs. No)	3.03	0.082	0.61	0.35, 0.94

3. Bivariate Association Between Independent Variables and If the Rhode Island Duplicate Prescription Form Affects Decision-making for the Post-1979 Group.

The analysis for bivariate association for the post-1979 group revealed five statistically significant variables. They were degree, specialty, number of years licensed, sex and number of schedule II prescriptions written per month. The range of the Chi-squares for the independent variables was 0.00 (practice type) to 9.07 (specialty). The odds ratios for the significant variables ranged from 0.42 (sex) to 2.99 (specialty). The results are summarized in Table 10.

Table 10. Summary of the bivariate association between the independent variables and the effect of the form on decision-making for the post-1979 group.

Variable	X^2	p-value	OR	95% CI
Degree (MD vs. Non-MD)	6.88	0.009	2.27	1.23, 4.19
Specialty (Yes vs. No)	9.07	0.003	2.99	1.47, 6.10
Practice Type (Solo vs. Not)	0.00	0.955		
# Yrs Licensed (>10 vs. ≤10)	2.98	0.084	1.62	1.07, 2.08
Practice in RI (Yes vs. No)	0.17	0.681		
Sex (F vs. M)	8.17	0.004	0.42	0.23, 0.77
Age (>40 vs. ≤40)	1.03	0.310		
Issuance of Rx (Yes vs. No)	0.00	0.956		
# Rx/Month (≥1 vs. 0)	6.03	0.014	0.47	0.26, 0.86
Review (Yes vs. No)	0.30	0.587		

4. Bivariate Association Between the Independent Variables and Therapeutic Preference for an Alternative Drug to a Schedule II Drug for the Study Group.

All Chi-squares for the independent variables were below 3.0 with the exception of three variables. The issuance of schedule II prescriptions had the highest chi-square (5.41) and a p-value of 0.02. The odds ratio associated with this variable was 0.48 (95% CI=0.26, 0.89). The variable with the least association was a whether a prescriber practiced in Rhode Island prior to 1979 (X^2=0.00, p=0.994). Table 11 summarizes these statistics.

Table 11. Summary of the bivariate association between independent variables and therapeutic preference in the study group

Variable	X^2	p-value	OR	95% CI
Degree (MD vs. Non-MD)	3.42	0.064	0.68	0.45, 0.98
Specialty (Yes vs. No)	0.52	0.469		
Practice Type (Solo vs. Not)	2.53	0.112	0.75	0.52, 0.94
# Yrs Licensed (>10 vs. ≤10)	0.20	0.653		
Practice in RI (Yes vs. No)	0.19	0.667		
Sex (F vs. M)	0.48	0.495		
Age (>40 vs. ≤40)	0.57	0.449		
Issuance of Rx (Yes vs. No)	5.41	0.020	0.48	0.26, 0.89
# Rx/Month (≥1 vs. 0)	5.03	0.025	0.62	0.41, 0.94
Before 1979 (Yes vs. No)	0.00	0.994		
Review (Yes vs. No)	0.01	0.930		

5. Bivariate Association Between the Independent Variables and Therapeutic Preference for an Alternative Drug to a Schedule II Drug for the Pre-1979 Group.

The summary of the association between the independent variables and therapeutic preference for the pre-1979 group is found in Table 12. One variable had cells too small to count for Chi-square statistics (number of years licensed). The variable, issuance of a Schedule II prescription, was the only statistically significant variable (X^2=3.41, p=0.065). The remaining variables had Chi-squares ranging from 0.06 (age) to 1.74 (number of prescriptions issued per month).

Table 12. Summary of the bivariate association between the independent variables and therapeutic preference in the pre-1979 group

Variable	X^2	p-value	OR	95% CI
Degree (MD vs. Non-MD)	0.12	0.725		
Specialty (Yes vs. No)	0.07	0.796		
Practice Type (Solo vs. Not)	1.44	0.231		
# Yrs Licensed (>10 vs. ≤10)	CELLS TOO SMALL TO COUNT			
Practice in RI (Yes vs. No)	0.63	0.427		
Sex (F vs. M)	0.46	0.498		
Age (>40 vs. ≤40)	0.06	0.804		
Issuance of Rx (Yes vs. No)	3.41	0.065	0.399	0.15, 0.95
# Rx/Month (≥1 vs. 0)	0.09	0.761		
Review (Yes vs. No)	1.74	0.187		

6. Bivariate Association Between the Independent Variables and Therapeutic Preference for an Alternative Drug to a Schedule II Drug for the Post-1979 Group.

The number of prescriptions for Schedule II drugs issued per month was highly associated with therapeutic preference for an alternative drug to a Schedule II drug (X^2=6.54, p=0.011) for the post-1979 group. The odds ratio for that variable was 0.50 and the 95% confidence interval was 0.29 to 0.98. Two additional variables were shown to be associated to the dependent variable. Those variables were degree and the issuance of a schedule II prescription. Table 13 summarizes the bivariate statistics.

Table 13. Summary of the bivariate association between the independent variables and therapeutic preference for the post-1979 group

Variable	X^2	p-value	OR	95% CI
Degree (MD vs. Non-MD)	4.03	0.045	0.59	0.35, 0.99
Specialty (Yes vs. No)	0.65	0.421		
Practice Type (Solo vs. Not)	1.33	0.249		
# Yrs Licensed (>10 vs. ≤10)	0.05	0.825		
Practice in RI (Yes vs. No)	0.02	0.881		
Sex (F vs. M)	0.08	0.773		
Age (>40 vs. ≤40)	1.31	0.252		
Issuance of Rx (Yes vs. No)	2.70	0.101	0.50	0.22, 0.87
# Rx/Month (≥1 vs. 0)	6.54	0.011	0.50	0.29, 0.98
Review (Yes vs. No)	1.68	0.195		

C. Multivariate Analysis of Independent and Dependent Variables

The original binary regression models contained the eleven independent variables which have been discussed in previous sections. These variables were regressed on the two dependent variables. Collinearity was assessed for each model, and preliminary regression models were run. Table 14 summarizes the binary regression statistics for the original model for the effect of the form on decision-making, and Table 15 also summarizes these statistics for the original model for the dependent variable, therapeutic preference. The former model Chi-square was 27.88 with 11 degrees of freedom and a p-value of 0.003 while the latter model exhibited a Chi-square of 15.39 with 11 degrees of freedom and a p-value of 0.167.

Table 14. Summary of the results of the binary regression procedure on the initial form effects model.

Variable	beta	X^2	p-value	r
Intercept	-1.6115	5.4534	0.0195	
Degree	0.4422	2.0007	0.1572	0.094
Practice Type	-0.0269	0.0148	0.9032	-0.007
Specialty	0.5280	2.4451	0.1179	0.105
# Yrs Licensed	0.2941	0.6702	0.4130	0.080
Practice in RI	0.9818	3.7054	0.0542	0.121
Age	-0.1837	0.2937	0.5878	-0.050
Sex	-0.7402	5.3504	0.0207	-0.146
Before 1979	-0.1548	0.2315	0.6304	-0.042
Issuance of Rx	0.7019	2.0391	0.1533	0.097
# Rx/Month	-0.8333	7.0039	0.0081	-0.180
Review	-0.1824	0.7787	0.3775	-0.050

Table 15. Summary of the results of the binary regression procedure on the initial therapeutic preference model.

Variable	beta	X^2	p-value	r
Intercept	0.3715	0.4072	0.5234	
Degree	-0.3259	1.5017	0.2204	-0.093
Practice Type	-0.3713	3.2502	0.0714	-0.100
Specialty	0.0527	0.2876	0.8521	0.011
# Yrs Licensed	-0.2547	0.5934	0.4411	-0.069
Practice in RI	0.2097	0.2736	0.6009	0.028
Age	0.4762	2.2383	0.1346	0.130
Sex	0.1091	0.1596	0.6895	0.022
Before 1979	-0.2632	0.7495	0.3866	-0.071
Issuance of Rx	-0.4086	0.9303	0.3348	-0.055
# Rx/Month	-0.4267	2.6424	0.1040	-0.093
Review	0.1026	0.2876	0.5918	0.020

The regression models were tested for collinearity and for interactions between two or more variables. Models were also designed for both dependent variables to determine the association between the independent variables for the pre- and post-1979 groups.

1. Collinearity

The PROC REG procedure with COLLIN option was invoked to assess collinearity problems. A summary of the collinearity diagnostics is found in Appendix D. A collinearity value of greater than 0.5 was used as an indicator of possible problems. All collinearities greater than 0.5 involved interaction terms.

2. Interactions

The models were assessed for the interactions between two or more of the independent variables. The interaction terms which were evaluated were:

SEXAGE	sex x age
DEGAGE	degree x age
SEXDEG	sex x degree
PRAC79	practice type x practice in RI before 1979
DEG79	degree x practice in RI before 1979

The interaction terms were evaluated in the models using the PROC LOGIST with STEPWISE option. No interaction terms were found to be significant in any of the models.

3. Evaluation of Interim Models

The interim models were evaluated for model Chi-squares and model p-values. Each independent variable for each model was evaluated for Chi-square value, p-value and standard error. Those models with low chi-squares and low p-values plus model variables with low chi-squares, low p-values and high standard error were eliminated. The PROC LOGIST procedure with STEPWISE option was used to determine the best fit models.

4. The Final Models

The following models were chosen which best describe the relationship of the independent variables and the dependent variables. The SAS output for the regression models may be found in Appendix E.

A. Table 16 summarizes the results of the binary logistic regression model on the final form effects model for the entire study group. The test statistics for the model were:

Model Chi-Square	23.353
Degrees of Freedom	9
p-value	0.0051

This model was significant.

Table 16. The summary of results of binary logistic regression on the final form effects model for the entire study group.

Variable	beta	X^2	p-value	r
Intercept	-0.2399	0.3668	0.5448	
# Rx/Month	-0.5169	3.8384	0.0501	-0.112
Before 1979	-0.1262	0.1562	0.6927	-0.034
Sex	-0.8337	7.0291	0.0080	-0.165
Age	-0.2003	0.3527	0.5526	-0.054
Specialty	0.5206	2.4135	0.1203	0.103
Review	-0.2560	1.5828	0.2084	-0.070
Degree	0.4459	2.0855	0.1487	0.095
Practice Type	-0.00840	0.0015	0.9692	-0.002
# Yrs Licensed	0.3127	0.7688	0.3806	0.080

The multivariate adjusted odds risk ratio, ROR (adj.) was calculated for each variable in the model. A 95% confidence interval was ascertained from the odds ratio.

Those variables with the greatest ROR (adj.) were specialty (1.68), degree (1.56) and number of years licensed (1.37). Summaries of the ROR (adj.) and confidence intervals are found in table 17.

Table 17. Summary: Logistic Regression - Prescriber Characteristics as Predictors of Self-Reports of Whether the RI Duplicate Prescription Form Affects Prescribing for Schedule II Drugs for the Entire Study Group.

Variable	ROR (adj.)	95% CI
Intercept	0.79	0.36, 1.71
# Rx/Month (≥1 vs. 0)	0.60	0.36, 1.00
Before 1979 (Yes vs. No)	0.88	0.47, 1.65
Sex (Female vs. Male)	0.43	0.24, 0.81
Age (>40 vs. ≤40)	0.82	0.42, 1.59
Specialty (Yes vs. No)	1.68	0.87, 3.25
Review (Yes vs. No)	0.77	0.52, 1.15
Degree (MD vs. Non-MD)	1.56	0.85, 2.86
Practice Type (Solo vs. Non-Solo)	0.99	0.65, 1.52
# Yrs Licensed (>10 vs. ≤10)	1.37	0.68, 2.75

B. Table 18 summarizes the statistics for the final therapeutic preference model for the entire study group. The test statistics for the model were:

Model Chi-Square	15.084
Degrees of Freedom	9
P-Value	0.0887

This model was significant.

Table 18. The summary of results of binary logistic regression on the final therapeutic preference model for the entire study group.

Variable	Beta	X^2	p-value	r
Intercept	0.3103	0.8090	0.3684	
Before 1979	-0.2570	0.7198	0.3962	-0.070
Sex	0.1461	0.2965	0.5861	0.029
Age	0.4860	2.3440	0.1258	0.133
Specialty	0.0586	0.0433	0.8352	0.012
# Rx/Month	-0.5353	5.2626	0.0218	-0.116
Degree	-0.3343	1.5981	0.2062	-0.075
Practice Type	-0.4172	4.1794	0.0409	-0.133
# Yrs Licensed	-0.2656	0.6467	0.4213	-0.070
Review	0.0946	0.2495	0.6175	0.026

The adjusted odds ratios calculated for each variable reveal those with the greatest association are the intercept (1.36), sex (1.16), age (1.63) and specialty (1.06). Those 95% confidence intervals which did not include 1 in the interval were number of prescriptions written per month and practice type. (Table 19)

Table 19. Summary: Logistic Regression - Prescriber Characteristics as Predictors of Self-Reports of Therapeutic Preference to Prescribe an Alternative Drug to an Indicated Schedule II Drug for the Entire Study Group.

Variable	ROR (adj.)	95% CI
Intercept	1.36	0.69, 2.68
Before 1979 (Yes vs. No)	0.77	0.43, 1.40
Sex (Female vs. Male)	1.16	0.68, 1.96
Age (>40 vs. ≤40)	1.63	0.87, 3.03
Specialty (Yes vs. No)	1.06	0.61, 1.84
# Rx/Month (≥1 vs. 0)	0.59	0.37, 0.93
Degree (MD vs. Non-MD)	0.72	0.43, 1.20
Practice Type (Solo vs. Non-Solo)	0.66	0.44, 0.98
# Yrs Licensed (>10 vs ≤10)	0.77	0.40, 1.47

C. Table 20 summarizes the results of the binary logistic regression model on the final form effects model for the pre-1979 group. The test statistics for the model were:

Model Chi-Square	5.446
Degrees of Freedom	4
P-value	0.2445

This model was not significant.

Table 20. The summary of results of binary logistic regression on the final form effects model for those in practice in Rhode Island before 1979.

Variable	Beta	X^2	p-value	r
Intercept	-0.6887	0.9033	0.3419	
# Rx/Month	-0.3699	0.6309	0.4271	-0.076
Review	-0.4487	2.2838	0.1307	-0.121
Practice Type	0.0543	0.0339	0.8539	0.014
Issuance of Rx	1.3089	2.6142	0.1059	0.167

Table 21 summarizes the multivariate adjusted odds ratios and the 95% confidence intervals for each variable. Practice type and issuance of prescriptions for schedule II drugs had the highest ROR (adj.) (1.06 and 3.70 respectively); however, the confidence intervals both include 1 in the interval.

Table 21. Summary: Logistic Regression - Prescriber Characteristics as Predictors of Self-Reports of Whether the RI Duplicate Prescription Form Affects Prescribing for Schedule II Drugs for Those in Practice in Rhode Island Before 1979.

Variable	ROR(adj.)	95% CI
Intercept	0.50	0.12, 2.08
# Rx/Month ($\geq$1 vs. 0)	0.69	0.28, 1.72
Review (Yes vs. No)	0.64	0.36, 1.14
Practice Type (Solo vs. Non-Solo)	1.06	0.59, 1.88
Issuance of Rx (Yes vs. No)	3.70	0.76, 18.09

D. Table 22 summarizes the results of the binary logistic regression model on the final therapeutic preference model for the pre-1979 group. The model test statistics are as follows:

Model Chi-Square	9.621
Degrees of Freedom	5
P-value	0.0867

This model was significant.

Table 22. The summary of results of binary logistic regression on the final therapeutic preference model for those in practice in Rhode Island before 1979.

Variable	beta	X^2	p-value	r
Intercept	0.9578	1.7120	0.1907	
Specialty	-0.0685	0.0255	0.8731	0.013
Degree	0.000708	0.0000	0.9986	-0.000
Practice Type	-0.6066	3.9508	0.0468	-0.164
Review	-0.5184	3.1732	0.0749	-0.141
Issuance of Rx	-0.9430	2.7307	0.0984	-0.128

The variables with the greatest ROR (adj.) were the intercept (2.61) and degree (1.00); however, the 95% confidence intervals included 1 in the interval. (Table 23).

Table 23. Summary: Logistic Regression - Prescriber Characteristics as Predictors of Self-Reports of Therapeutic Preference to Prescribe an Alternative Drug to an Indicated Schedule II Drug for Those in Practice in Rhode Island Before 1979.

Variable	ROR (adj.)	95% CI
Intercept	2.61	0.62, 10.94
Specialty (Yes vs. No)	0.93	0.40, 2.16
Degree (MD vs. Non-MD)	1.00	0.45, 2.24
Practice Type (Solo vs. Non-Solo)	0.55	0.30, 0.99
Review (Yes vs. No)	0.60	0.34, 2.97
Issuance of Rx (Yes vs. No)	0.40	0.13, 1.19

E. The results of the binary logistic regression procedure on the final form effects model for those prescribers who were in practice in Rhode Island after 1979 are presented in table 24. The test statistics for the model were:

Model Chi-Square	18.501
Degrees of Freedom	7
P-value	0.0099

This model was highly significant.

Table 24. The summary of results of binary logistic regression on the final form effects model for those prescribers who were in practice in Rhode Island after 1979.

Variable	beta	X^2	p-value	r
Intercept	0.0207	0.0024	0.9608	
Sex	-0.8632	6.7491	0.0094	-0.203
Age	-0.0114	0.0010	0.9742	-0.002
# Rx/Month	-0.8234	5.7377	0.0166	-0.184
Review	-0.1321	0.2424	0.6225	-0.036
Degree	0.6814	3.9487	0.0469	0.155
Practice Type	0.1468	0.2347	0.6281	0.037
# Yrs Licensed	0.3469	0.9100	0.3401	0.083

The calculation of the odds risk ratios and the 95% confidence intervals show that the intercept, degree, practice type and number of years licensed have the greatest magnitude (1.02, 1.98, 1.16, and 1.42 respectively). The number of prescriptions for schedule II drugs written per month, sex and the degree have confidence intervals which do not contain 1 in the interval. (Table 25).

Table 25. Summary: Logistic Regression - Prescriber Characteristics as Predictors of Self-Reports of Whether the RI Duplicate Prescription Form Affects Prescribing for Schedule II Drugs for Those in Practice in Rhode Island After 1979.

Variable	ROR (adj.)	95% CI
Intercept	1.02	0.45, 2.33
Sex (Female vs. Male)	0.42	0.22, 0.81
Age (>40 vs. ≤40)	0.99	0.49, 1.98
# Rx/Month (≥1 vs. 0)	0.44	0.22, 0.86
Review (Yes vs. No)	0.88	0.52, 1.48
Degree (MD vs. Non-MD)	1.98	1.01, 3.87
Practice Type (Solo vs. Non-Solo)	1.16	0.64, 2.10
# Yrs Licensed (>10 vs. ≤10)	1.42	0.69, 2.89

F. Table 26 summarizes the results of the binary logistic regression model on the final therapeutic preference model for those in practice in Rhode Island after 1979. The test statistics for the model were:

Model Chi-Square	16.097
Degrees of Freedom	8
P-value	0.0410

This model was significant.

Table 26. The summary of results of binary logistic regression on the final therapeutic preference model for those in practice in Rhode Island after 1979.

Variable	beta	X^2	p-value	r
Intercept	0.2394	0.3235	0.5695	
Sex	0.0408	0.0179	0.8936	0.009
Age	0.5253	2.4018	0.1212	0.128
Specialty	0.1037	0.0753	0.7838	0.023
Degree	-0.5013	1.9842	0.1589	-0.118
Practice Type	-0.2068	0.5375	0.4635	-0.051
# Rx/Month	-0.7879	6.9361	0.0084	-0.181
# Yrs Licensed	-0.1636	0.2271	0.6337	-0.039
Review	0.4793	3.6337	0.0566	0.130

Several variables exhibited multivariate adjusted odds risk ratios greater than 1. The only variable which did not contain 1 in its 95% confidence interval was number of prescriptions written per month (95% CI=0.25, 0.82). Table 27 summarizes these results.

Table 27. Summary: Logistic Regression - Prescriber Characteristics as Predictors of Self-Reports of Therapeutic Preference to Prescribe an Alternative Drug to an Indicated Schedule II Drug for Those in Practice in Rhode Island After 1979.

Variable	ROR (adj.)	95% CI
Intercept	1.27	0.56, 2.90
Sex (Female vs. Male)	1.04	0.57, 1.89
Age (>40 vs. ≤40)	1.69	0.87, 3.29
Specialty (Yes vs. No)	1.11	0.53, 2.33
Degree (MD vs. Non-MD)	0.61	0.30, 1.22
Practice Type (Solo vs. Non-Solo)	0.81	0.47, 1.41
# Rx/Month (≥1 vs. 0)	0.46	0.25, 0.82
# Yrs Licensed (>10 vs. ≤10)	0.85	0.43, 1.66
Review (Yes vs. No)	1.62	0.99, 2.64

DISCUSSION

A. Independent and Dependent Variables

1. Demographic Characteristics of Prescribers and Practices

The responding prescribers represented a blend of various professions, varying specialty practices, a span of age groups and both males and females. The study group included prescribers who had practiced in Rhode Island prior to (44.6%) and following (53.7%) the passage of the Rhode Island Duplicate Prescription Law. Most respondents (89.4%) presently practiced in Rhode Island. The respondents were primarily male (82.5%); however, while only 6.4% of those responding to the survey who practiced in Rhode Island prior to the implementation of the law were female (6.4%), nearly one-quarter of the respondents in the post-1979 group (24.8%) were female. More than two-thirds of the respondents (66.7%) were under 50 years of age. As expected in the comparison between the pre- and post-1979 groups, there was a higher percentage of those under 50 (93.3%) in the post-1979 group than in the pre-1979 group (36.6%).

The distribution of respondents in the pre- and post-1979 groups appeared to be different with regard to professional degree. Although medical physicians (MD) dominated both

groups, 85.4% of the respondents in the pre-1979 group were MD's, while only 76.1% of the respondents in the post-1979 group were identified by that professional degree. Dentists (DDS/DMD) represented the next largest group (9.7% of the total), and veterinarians (DVM) represented the smallest group (1.5%). It is interesting to note that the distribution of the professions in the original mailing was as follows: medical and osteopathic physicians (90.6%), dentists (7.0%), podiatrists (1.1%) and veterinarians (1.6%), and this was similar to the overall distribution of professions responding to the survey. Most respondents claimed to have one or more specialty practices (78.5%), and most respondents were board certified (68.1%).

There was a marked difference in the distribution of practice type between the pre- and post-1979 groups. Clearly, most respondents in practice prior to the passage of the law were presently practicing alone (59%) while only 26.2% of those in the post-1979 group stated to have a solo practice. Nearly 2.5 times more respondents in the post-1979 group than the pre-1979 group work primarily in the hospital environment. As should be noted, many respondents who claimed to work in "other" sites extemporaneously stated to work in a health maintenance organization (HMO).

More than 98 percent of the respondents in the pre-1979 group had been licensed in any jurisdiction for more than ten years, and more than 91 percent of this group also worked in Rhode Island for more than 11 years; whereas, 74.1% of the

respondents in the post-1979 group had been licensed for 10 or less years, but 94.4% of this group had practiced in Rhode Island for up to 10 years.

2. Prescribing of Schedule II Drugs

Most respondents (88.5%) had prescribed Schedule II drugs at some time since initial licensure for an ambulatory, non-hospitalized patient, and this was consistent for the pre- and post-1979 groups (89.5% and 89.9% respectively). Nearly three-quarters (74.5%) of the respondents indicated to have prescribed one or more Schedule II prescriptions per month. Considering that nearly 90% of the respondents presently practice in Rhode Island, a majority of the study group has had the opportunity to be exposed to the Rhode Island Duplicate Prescription Law, and again this was consistent for both the pre- and post-1979 groups (77.6% and 74.1% respectively). A slightly larger percentage of the respondents in the post-1979 group (23.7%) indicated prescribing no Schedule II drugs per month as compared to the pre-1979 group (20.0%). It is important to note that some of the respondents who indicated prescribing zero Schedule II prescriptions per month extemporaneously stated that overall they prescribe less than 1 prescription per month. Although this study did not investigate why a prescriber did not issue a Schedule II prescription in Rhode Island, there may be several reasons to explain this behavior. For example, one would expect that a

pathologist would not issue a prescription for Schedule II drugs; therefore, a specialty type may be a cause for a prescriber to not prescribe Schedule II drugs. The possibility exists that non-prescribers make a conscious decision to not prescribe Schedule II drugs, but this was not measured in the study. There may be clinical reasons which cause a prescriber to not select a Schedule II drug or concerns about identification if the prescriber utilizes the Schedule II prescription form. Practice status may preclude the prescribing of Schedule II drugs, but, again, this was not measured in this study.

The percentage of respondents who prescribe certain classes of Schedule II drugs reflected the Division of Drug Control's data describing the percentage of classes of Schedule II drugs prescribed (DDC 1990). Most respondents (76.6%) prescribed narcotic analgesics in Schedule II. There appears to be a difference between the pre- and post-1979 groups with regard to the prescribing of CNS stimulants (14.9% and 20.3% respectively) and to the prescribing of sedative/hypnotics (27.8% and 19.0% respectively). There are possible reasons which may explain these differences. Although there appears to be a difference between the pre- and post-1979 groups with regard to having a specialty practice (85.4% and 76.1% respectively), perhaps a difference in the distribution of specialty types between these two groups would explain the difference in prescribing patterns. Education about the law and its implications may be an explanation for the differences

between the pre- and post 1979 groups due to the nature of change and discussion throughout the state which occurred in order to prepare those prescribers for the implementation of the law in February 1979; however, education nor continuing education about the law was not measured in this study.

3. Perceived Change in Prescribing for the Pre-1979 Group

Although 48.8% of the group in practice before the passage of the law perceived that their prescribing practices for Schedule II drugs had not changed, 20% stated their prescribing patterns had changed. Because there had been an overall decrease in the number of Schedule II prescriptions written in Rhode Island since the passage of the law, it was important to ascertain the reasons for the decrease by those in practice before the law who felt that their prescribing practices had changed.

The availability of therapeutic alternatives was identified as a reason for the decrease in prescribing of Schedule II drugs by 44.1% of those who perceived their prescribing patterns had changed. Over 40% of this group (44.1%) also indicated that there was a better risk-benefit ratio for the patient in selecting an alternative drug to a Schedule II.

Nearly 50% of the respondents in this group stated that the Rhode Island Duplicate Prescription Form was not handy to use (47.5%), i.e., not readily available, inconvenient. Con-

versly, 40.7% stated that the form was not difficult to use, i.e., ease in filling out form, self-explanatory. Approximately one-third of the respondents perceiving a change in their prescribing patterns in the pre-1979 group stated that lack of prescribing confidentiality (35.6%), lack of patient confidentiality (32.2%) and pharmacy problems associated with filling and dispensing Schedule II drugs (33.9%) were <u>not</u> reasons for the decrease in prescribing of Schedule II drugs.

No one reason seemed to overwhelmingly describe why there may be a decrease in prescribing of Schedule II drugs for this group. However, a number of prescribers felt that therapeutic alternatives and better risk-benefit ratios impacted upon reasons not to write Schedule II prescriptions. A lack of convenience of the form may impact upon a prescriber to not use the form. The reverse score plot of a convenience measure shows that the skew to the right could indicate a lack of convenience, although this was not clearly measured. Convenience of the form may be related to choosing not to prescribe Schedule II drugs. There may be other reasons which would explain the decrease of prescribing of Schedule II drugs as indicated by those who perceive a change in their prescribing since the passage of the law; however, these were not measured.

4. Prescribing Practices for Schedule II Drugs

Although more than one-third of the overall respondents

(36.8%) state that the Rhode Island Duplicate Prescription form does not affect the decision-making process in the creation of a therapeutic regimen and 23.2% state that the form has no effect on the decision-making, another one-third of the respondents stated that the form does affect the decision-making process. There appears to be an unwillingness or concern to prescribe Schedule II drugs or a perception of an obstacle to prescribe Schedule II drugs for the 34.2% who state that the form does affect decision-making. The effect of the form on decision-making could be on several levels such as the unwillingness to prescribe a Schedule II drug or the unwillingness to prescribe certain quantities of drug, an awareness of the potential side effects and adverse consequences for the patient in utilizing a Schedule II drug or for the need to more closely monitor the patient who is treated with Schedule II drugs.

There was no statistical difference between the pre- and post-1979 groups with regard to the self-report of the effect of the form on prescribing ($X^2=1.14$, $p=0.29$).

In attempting to ascertain if the Rhode Island Duplicate Prescription Law had an effect on prescribing of Schedule II drugs, the respondents were asked if knowledge of a colleague whose prescribing practices for Schedule II drugs caused the colleague licensure limitation, suspension or revocation or mandatory drug rehabilitation. If the response was yes, the respondent was asked if that knowledge had caused the respondent to curtail his/her prescribing. There was a highly

significant association between knowledge of a colleague under DDC review and practicing before 1979 (X^2=12.38, p=0.00). While only 14.1% of the total group was aware of a colleague under DDC review, nearly one-quarter of these respondents (23.4%) stated that their prescribing practices had become limited as a result. This indicates that one of the outcomes of the law may be to have some inhibitory effects on prescribing.

5. Prescribers' Perceptions of the Law

Since the law was designed to accomplish several ends such as reducing abuse of Schedule II drugs, preventing forgeries and elevating awareness of the potential risks involved for the patient who uses a Schedule II drug, an attempt was made to ascertain how prescribers perceived the above stated variables.

Most respondents agreed that the Rhode Island Duplicate Prescription Law decreases the abuse of Schedule II drugs (64.1%), that it thwarts patients who attempt to obtain Schedule II drugs from a multitude of legitimate prescribers (58.1%), and that it provides protection for the prescriber from the patient (64.0%). The responses in these categories were similar for the pre- and post-1979 groups. It is interesting to note that a large percentage of prescribers (46.0%) believe that the Rhode Island Duplicate Prescription Law decreases the availability of Schedule II drugs, although

the definition of "availability" was not stated.

There were differences in several responses between the pre- and post-1979 groups. Although 77.2% of the study group felt that the Rhode Island Duplicate Prescription Law helped make forgeries for Schedule II prescriptions more difficult, a significant relationship existed between the response to the question and whether the prescriber practiced in Rhode Island after the passage of law (X^2=3.29, p=0.07). A higher percentage of the respondents (8.8%) in the pre-1979 group as compared to the post-1979 group (5.1%) believed the law did not make forgery difficult. This is an interesting response since the control produced by the forms was discussed with those in practice before the law was implemented, and the pre-1979 group have been able to realize the trends in prescribing of Schedule II drugs, in forgery and diversion and other factors since the passage of the law.

There is a marginally significant relationship between practicing after the passage of the law and the response to the question concerning the law raising consciousness about the potential side effects and toxicities of Schedule II drugs (X^2=2.07, p=0.15). A higher percentage of the respondents in the pre-1979 group (61.0%) believed the law made prescribers more aware of the side effects of these drugs, and 16.6% of this group did not believe the law caused prescribers to be more conscious of side effects, while only 55.8% of the post-1979 group agreed that the law made prescribers more aware, and 20.6% of this group did not. This reinforces the

education component regarding use of Schedule II drugs as well as reflecting a possible difference in education about the law and about therapeutics between the pre- and post-1979 groups.

Slightly more than one-half (50.1%) of the respondents were aware of Division of Drug Control review of received duplicate prescriptions, while 45.7% of the respondents were not aware of the review. A highly significant relationship existed between knowledge of DDC review and practicing before the passage of the law ($X^2=6.76$, $p=0.01$), and a larger percentage of the pre-1979 group were aware of the review (55.6%) while only 46.5% of the post-1979 group were cognizant of the review. This might be related to when an individual became licensed in Rhode Island. Those who were in practice in Rhode Island before the passage of the law were exposed to symposiums, continuing education, and educational literature in an effort to familiarize these prescribers to the law and its implications. Those who have come to practice in Rhode Island after the passage of the law have been exposed to little educational material concerning the Rhode Island Duplicate Prescription Law.

Although 50.1% of the prescribers were aware of Division of Drug Control review of the duplicate forms received, it is interesting to note that most respondents (58.5%) felt the State of Rhode Island should mandate the review of prescribing practices for Schedule II drugs, and a highly significant relationship existed between the responses and practicing in Rhode Island before the passage of the law

(X^2=6.04, p=0.01). While only 55.6% of the respondents in the pre-1979 group stated that the state should mandate review of prescribing, 62.8% of the post-1979 group felt the state should mandate review. While 19.7% of the post-1979 group felt that the state should not mandate review, only 12.4% of the respondents in the pre-1979 group disagreed.

About one-half of the study group (51.6%) stated that the law helped identify abusers in the medical community, while 16.8% stated that the law did not, and 22.1% felt that there was no effect of the law on identifying these abusers. A difference existed between the pre- and post-1979 groups with regard to this question (X^2=3.04, p=0.08). More than half of the pre-1979 group (56.9%) versus 48.2% of the post-1979 group agreed that the law helped identify abusers. This relates to the knowledge of a colleague under DDC review, and it appears more likely that those who practiced in Rhode Island before the passage of the law were more aware of DDC review and its consequence for the prescriber than those in the post-1979 group. This may be related to an actual working knowledge of the law which may be related to a lack of initial and continuing education about the law, its workings and its consequences.

The impact of the law on quality of care appeared to be an issue which needs further investigation. A highly significant relationship existed between the response to the effect the law has on quality of care and the pre- and post-1979 groups (X^2=6.33, p=0.04). While only 4.2% of the re-

spondents of the post-1979 group stated that the law had a negative impact upon the dispensing of quality of care, more than twice the percentage of respondents in the pre-1979 groups (8.5%) stated that the law had a negative effect on quality of care. The pre-1979 group had experienced a change in prescribing routine as a direct result of the law, for example, the prescriber had to change from utilizing a private prescription blank to a prescribed Schedule II prescription form issued by the state. The law required a change in practice by mandating a specific form for Schedule II drugs. This is different from the post-1979 group which did not go through a mechanical change and process for writing Schedule II drugs but immediately used the prescribed form.

6. Perceptions of the Willingness to Prescribe Schedule II Drugs

In a situation where a Schedule II drug is clearly indicated, 53.4% of the respondents stated that they would not choose an alternative drug to the Schedule II; however, 32.8% of the study group stated that they would choose an alternative drug. There was no statistical difference between the pre- and post-1979 groups ($X^2=0.00$, $p=0.99$). Although the use of an alternative medication to a Schedule II drug may not harm the patient, others may question if the use of non-Schedule II alternatives to a clearly indicated Schedule II drug may impact beyond the health care arena. Although a

patient may be helped to the same or larger extent by using an alternative (which was not measured in this study), the result in not prescribing an indicated drug in an indicated circumstance may be an increase in spending of health care dollars by the patient to alleviate or irradicate the health care problem (e.g. the need for additional prescriptions, hospitalization), loss of wages and workdays by the patient who may not be getting better due to sub-optimal therapy, and a disruption of the patient's social structure.

Most prescribers felt that the use of an alternative to a Schedule II drug does not cause malpractice for the prescriber (54.9%). There existed a marginally significant association between the response and the pre- and post-1979 groups (X^2=2.16, p=0.14). A higher percentage of the prescribers in the post-1979 group (60.6%) believed that the utilization of an alternative drug to a Schedule II would not bring malpractice litigation against the prescriber while 49.8% of the pre-1979 group stated that malpractice was not a result of prescribing an alternative. This may indicate that malpractice is not an issue for the prescriber in choosing to prescribe an alternative to a clearly indicated Schedule II drug; however, 18.2% of the respondents believed that choosing an alternative would have an impact on mal-practice litigation, yet one-third would prescribe an alternative.

A majority of the respondents recognized that the use of

a scheduled alternative (51%) or a non-scheduled alternative (54%) to a Schedule II drug may cause the patient adverse consequences. This study did not compare the prescribers' perceptions of the magnitude of adverse consequences resulting from Schedule II drugs and from non-Schedule II drugs. Given that most respondents believe use of an alternative may cause adverse consequences for the patient and that one-third of the respondents choose to prescribe alternatives to Schedule II, it appears that the possibility of adverse consequences for the patient by using an alternative is not a factor in selecting the alternative.

A majority of respondents (56.6%) stated that there is not less risk for the patient in utilizing an alternative to a Schedule II drug; therefore, it is possible that the alternative may pose more risk for the patient than the Schedule II drug in the eyes of the prescriber, yet one-third of the prescribers stated that an alternative drug to a Schedule II would be selected, and 18% of the prescribers state that choosing an alternative may result in malpractice litigation for the prescribe. Therefore, it appears that risk for the patient may not be a consideration for the prescriber. There existed a highly significant relationship between response to the patient risk question and the pre- and post-1979 groups ($X^2=7.02$, $p=0.01$). A majority of the prescribers in the post-1979 group (62.3%) stated that they perceive there is more risk for the patient in using an alternative; whereas, a smaller percentage of the respondents in the pre-1979 group

(50.8%) stated that there is more risk.

Similarly, 61.9% of the respondents (60.3% of the pre-1979 group and 64.5% of the post-1979 group) stated that they disagree that there is better patient compliance with a non-Schedule II drug versus a Schedule II drug; therefore, there may be worse compliance with the alternative, yet one-third of the prescribers would choose an alternative. Compliance appears not to be an issue, and a significant relationship existed between responses to compliance issues and the pre- and post-1979 groups (X^2=3.34 p=0.07).

It appears that issues of therapeutics, malpractice, risk for the patient and compliance do not wholly explain the unwillingness to prescribe Schedule II drugs; however, it appears, from the results of the descriptive statistics, that the Rhode Island Duplicate Prescription Law may play a role in not prescribing a Schedule II drug as illustrated by the effect of the form on decision-making, knowledge of DDC review of prescribing and knowledge of a colleague under DDC review for prescribing.

B. Bivariate Association Between Independent Variables and the Dependent Variables

The relationship between the effect of the Rhode Island Duplicate Prescription form in decision-making for the creation of a therapeutic regimen and selected independent variables for the study group revealed several significant associations.

Those respondents who are medical physicians (MD) are 2.03 times more likely to indicate that the form affects their decision-making process than those prescribers who are not medical physicians. This may relate to the high percentage of respondents who were medical physicians as well as to the nature of medical treatment of the human body *in toto*.

Those respondents who stated to have specialty practice(s) are 2.16 more likely for being affected by the form than those who do not have specialty practices. Certain specialty practices are associated with the treatment of medical conditions which indicate the use of Schedule II drugs; therefore, the higher risk may be related to the nature of the specialty.

The more years (greater than 10) a respondent has been licensed, the more likely (OR=1.38) the respondent has the perception that the form affects decision-making as compared to those who have been licensed for less no more than 10 years. This increased likelihood may be associated with perceived impact of the form on long-established prescribing patterns.

Those respondents presently practicing in Rhode Island are 1.74 times more likely to indicate the form affects the decision-making process than those who do not practice in Rhode Island. This is expected since those who practice in Rhode Island must practice under the guise of the law.

Females are 0.47 times less likely to indicate that the the form affects decision-making versus males; i.e. female

prescribers appear to have a lesser risk than males. Those issuing one or more Schedule II prescriptions per month are 0.68 times less likely to indicate the form affects decision-making than those who issue zero Schedule II prescriptions per month. It may be postulated that prescribers who choose not to prescribe Schedule II drugs may do so as a result of the influence of the law, due to specialty types or due to therapeutic preference.

To better understand which variables influenced the prescribers who practiced in Rhode Island before the passage of the law and those who came into practice in Rhode Island after 1979 and the perceived affect of the form, it was necessary to dichotomize the data set into two subsets (pre- and post-1979 prescribers).

The only variable which had a significant association with the effect of the form for those in practice before 1979 was knowledge of Division of Drug Control review of the duplicate prescriptions (X^2=3.03, p=0.082). However, those prescribers in the pre-1979 group who were aware of the review were 0.61 times less likely to perceive the form affects decision-making than those who were not aware of DDC review.

Several variables appeared to be associated with the effect of the form for those prescribers in the post-1979 group. Unlike the pre-1979 group, review was not a significant variable (X^2=0.30, p=0.587). Those prescribers who had specialty practices were nearly 3 times more likely

to report that the form affects decision-making in a therapeutic regimen than those who do not have specialty practices for the post-1979 group. The variable with the next highest odds ratio was degree, and medical physicians in the post-1979 group are more likely (OR=2.27) to exhibit the studied outcome. A significant variable which carries the lowest odds ratio was sex, that females in the post-1979 group were 0.42 times less likely than the males to exhibit the exposure outcome.

The second dependent variable of interest, therapeutic preference to select an alternative to a Schedule II drug in a situation where the Schedule II is clearly indicated, would seem to be congruent to the form effects dependent variable, i.e., those who choose not to prescribe a Schedule II drug may or may not be influenced by the duplicate prescription form, and those whose decision-making is affected by the duplicate prescription form may or may not choose an alternative drug to a clearly indicated Schedule II drug. Since these two variables seem intertwined, it would be interesting to see if the same variables influence the same outcomes.

With regard to the study group, four variables were associated with therapeutic preference to choose an alternative. Those independent variables were degree, practice type, issuance of Schedule II prescriptions, and the number of Schedule II prescriptions written per month. The exposed levels of each of these variables appeared to have some protective effect on therapeutic preference, i.e.,

the odds ratios were less than 1.0.

For the pre-1979 group, only the issuance of prescription variable was significant (X^2=3.41, p=0.065) for the association with therapeutic preference. The odds ratio was 0.399, thus the likelihood for those issuing a Schedule II drug to choose a therapeutic alternative was only about 40% that of those who never issued a Schedule II prescription. This again indicates that those who choose not to prescribe Schedule II prescriptions may be affected by the law.

The variables which were associated with therapeutic preference for those in practice after the passage of the law were similar to the profile of the entire group. A medical physician (MD), issuance of a Schedule II prescription, and prescribing more than one Schedule II prescription per month were associated with the dependent variable of interest, and each had odds ratios less than 1.0 (0.59, 0.50 and 0.50 respectively). The influence on therapeutic preference is in part related to an effect by the law.

C. The Final Multivariate Models

Multivariate regression models were tested to best describe the relationship between the dependent variables of interest (effect of the form on decision-making and therapeutic preference to choose an alternative to a Schedule

II drug) for the study group and for the pre- and post-1979 subgroups.

1. The Form Effects Models

The final form effects model for the study group is as follows:

$$\begin{aligned}\text{FORM EFFECTS} = {} & \mathbf{-0.2399(intercept) - 0.5169(\#Rx/month) -} \\ & \mathbf{0.1262(RI1979) - 0.8337(Sex) - 0.2003(Age) +} \\ & \mathbf{0.5206(Specialty) - 0.2560(Review) +} \\ & \mathbf{0.4459(Degree) - 0.0084(Practice\ Type) +} \\ & \mathbf{0.3127(\#\ Yrs\ Licensed)}\end{aligned}$$

This model was significant (X^2=23.353, p=0.0051) for explaining the variation in the responses to whether the Rhode Island Duplicate Prescription form affected the prescriber's decision in the creation of a therapeutic regimen.

The multivariate adjusted odds risk ratio, ROR (adj.), was calculated for each independent variable. Three variables have ROR (adj.) greater than 1.0 (an ROR which equals 1.0 indicated that the risk of the exposed versus the unexposed is equal thus there is no effect in the exposure). Those variables which are associated with a risk greater than 1.0 are specialty (1.68), degree (1.56) and the number of years licensed (1.37). In a multivariate model, all other

variables are controlled, and in this model it indicated that those who have a specialty practice, those who are medical physicians and those who have been licensed for more than 10 years are at slightly higher risk for the affect of the form. It is important to note that the 95% confidence intervals for these variables do contain 1.0 in the intervals; therefore, it is possible that these variables may not have an effect on the final outcome.

The multiple logistic regression form effects model for those in practice before 1979 was not significant (X^2= 5.446, p=0.2445), and no inferences may be made about this model. The final model was:

FORM EFFECTS = **-0.6887(Intercept) - 0.3699(#Rx/month) - 0.4487(Review) + 0.0543(Practice type) + 1.3089(issuance of Rx)**

The multivariate logistic regression form effects model for the post-1979 group was significant (X^2=18.501, p=0.0099). The final model was:

FORM EFFECTS = **0.0207(intercept) - 0.8632(sex) - 0.0114(Age) - 0.8234(#Rx/month) - 0.1321(Review) + 0.6814(Degree) + 0.1468(Practice Type) + 0.3469(# Yrs Licensed)**

The degree variable was highly associated with the effect

of the form and had the largest ROR (1.98), thus medical physicians are at nearly twice the risk to report the form affects decision-making as compared to non-MD prescribers. The ROR for number of years licensed is 1.42; thus, those prescribers in the post-1979 group who had been licensed for more than 10 years are nearly one and one-half times more likely to report that the form affects decision-making.

2. The Therapeutic Preference Models

The final therapeutic preference model for the entire study group was marginally significant (X^2=15.084, p=0.0887) and is as follows:

THERAPEUTIC PREFERENCE = **0.3103(Intercept) - 0.2570(RI1979) + 0.1461(Sex) + 0.4860(Age) + 0.0586(Specialty) - 0.5353(# Rx/month) - 0.3343(Degree) - 0.4172(Practice type) -0.2656(# Years Licensed) + 0.0946(Review)**

The model revealed that those respondents over 40 years of age have 1.63 times higher risk than those prescribers under 40 years of age to choose a therapeutic alternative to a clearly indicated Schedule II drug. Female prescribers had 1.16 times higher risk than male prescribers to choose a

therapeutic alternative.

The therapeutic preference model for the pre-1979 group was significant (X^2=9.621, p=0.0867) and is as follows:

THERAPEUTIC PREFERENCE = **0.9578(Intercept) - 0.0685(Specialty) + 0.000708(Degree) - 0.6066(Practice type) - 0.5184(review) - 0.9430(Issuance of Rx)**

It is interesting to note that the degree variable displays a risk odds ratio of 1.0 which indicates that the risk for medical physicians is the same as non-MD.

The final therapeutic preference model for the post-1979 group is a significant model (X^2=16.097, p=0.04) and is as follows:

THERAPEUTIC PREFERENCE = **0.2394(Intercept) + 0.0408(Sex) + 0.5253(Age) + 0.1037(Specialty) - 0.5013(Degree) - 0.2068(Practice Type) - 0.7879(# Rx/Month) - 0.1636(# Years Licensed) + 0.4793(Review)**

Many variables for the post-1979 group had adjusted odds ratios greater than 1.0. The age variable had the greatest ROR (1.69). This indicates that those prescribers over 40

years of age in the post-1979 group have 1.69 times the risk to prescribe a therapeutic alternative compared to younger prescribers. Knowledge of Division of Drug Control review had a large ROR associated with prescribing a therapeutic alternative (1.62). This implies that knowing DDC reviews Schedule II prescriptions places the prescriber at nearly twice the risk for selecting a therapeutic alternative than a prescriber who is not aware of the review. It appears that choosing an alternative may be a response to the law. This provides reinforcement for the need for on-going education concerning the law and its implications.

CONCLUSIONS

The study of the impact of the Rhode Island Duplicate prescription Law on prescribing practices for Schedule II drugs examined factors relating to prescribers and their perceptions of the knowledge of the law as well as their willingness to prescribe Schedule II drugs as a function of the influence of the law.

The respondents represented a mix of physicians, dentists, podiatrists and veterinarians, those young and old, in various types of practice settings. The respondents represented both in-state and out-of-state prescribers as well as those who had practiced in Rhode Island before the implementation of the law and those who did not.

The study revealed that several factors impact upon the choice to prescribe a Schedule II drug or not. A variety of law variables and therapeutic variables combine to influence prescribing choices such as knowledge of Division of Drug Control review of duplicate prescription forms, knowledge of a colleague who has undergone licensure limitation as a result of his prescribing patterns and awareness of side effects associated with Schedule II drugs. It has been shown that certain variables do not appear to impact upon drug therapy selection such as threat of malpractice for those who choose alternatives to a clearly indicated Schedule II drug and selection of alternative despite the admission that the alternative may pose a greater risk for the patient.

There are differences between those who practiced in Rhode Island before the implementation of the law and those who practiced in Rhode Island following the passage of the law. The differences between the groups are related, in part, to the knowledge of the workings of the law and its implications, to the effect of the duplicate prescription form on decision-making for a therapeutic regimen and therapeutic preference to chose an alternative drug to an indicated Schedule II drug.

Also, several demographic variables determine which prescribers are at greater risk for perceiving an effect of the duplicate prescription form on therapeutic decision-making as well as therapeutic preference to choose an alternative to a Schedule II drug. These variables include but are not limited to age, sex, practice type, degree, specialty practice, issuing prescriptions for Schedule II, number of years licensed in any jurisdiction, number of Schedule II prescriptions issued per month and knowledge of Division of Drug Control review.

It is clear that there is a need for educating the prescriber about the Rhode Island Duplicate Prescription Law and about its implications. Prescribers need to receive information about how the law works when an initial registration is sought for licensure from Division of Drug Control. Follow-up or continuing education is necessary to keep prescribers abreast of changes in the law.

The study revealed that there are several areas which

need additional study. Issues surrounding therapeutics and the power of the law need to be evaluated and defined to gain an understanding of the their impact on the choice of an alternative drug to a Schedule II drug. Likewise, the effect on patients, prescribers, and the health care system resulting from the choice of an alternative drug to a Schedule II drug needs further investigation.

Although many states have implemented or are seeking to implement multiple copy prescription programs and there have been proposals made for a national multiple copy prescription program, caution is heeded that the results of this study are applicable to Rhode Island only.

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APPENDIX A

Data Collection Forms

The University of Rhode Island, Kingston, RI 02881-0809
Department of Pharmacy Practice, College of Pharmacy (401) 792-2734 or 2789
FAX # (401) 792-2181

Dear Health Care Provider:

In February of 1979, the Rhode Island Duplicate Prescription Law was passed in an effort to track the distribution of Schedule II controlled substances to the ambulatory, non-hospitalized patient via a two-part prescription blank issued to the prescriber by the Department of Health. Rhode Island is one of ten states which have similar statutes.

The purpose of the enclosed survey is to gather information concerning this law. There are no identifiers in the questionnaire thereby assuring your anonymity, and the data gathered will be analyzed in aggregate form. The analyses will be the basis of my Master of Science thesis in Pharmacy Administration.

Your responses and opinions are greatly appreciated. Thank you for your time in completing this survey.

Sincerely,

Bridgit A. Anness

Bridgit A. Anness, R.Ph.
Master of Science Candidate

cc: Albert H. Taubman, Ph.D.,
Major Professor

Part I. A. The following information is needed to describe your professional practice. Please answer each question by checking one number which best describes your practice. There are no identifiers on this survey thus assuring your anonymity. Data will be analyzed in aggregate form only.

1. What is your primary professional degree? (1)
__1 DDS/DMD __3 DPM __5 MD
__2 DO __4 DVM

2. Do you have a specialty practice? (2-4)
__1 Yes __2 No

If yes, please state your specialty _____

Are you board certified in your specialty?
__1 Yes __2 No

3. Please describe your type of practice (5)
__1 Solo __4 Hospital __6 Industry
__2 Small group (2-4) __5 Government/Industry __7 Other
__3 Large group (≥5)

Part I. B. The following information is needed to demographically describe you and your practice. Please check one number which best fits.

1. Please state the number of years you have been a licensed practitioner in any jurisdiction. (6)
__1 Under 5 __3 11-20 __5 31-40
__2 6-10 __4 21-30 __6 over 40

2. Are you presently practicing in Rhode Island? (7-8)
__1 Yes __2 No
If no, have you ever practiced in Rhode Island?
__1 Yes __2 No

3. How many years have you practiced in Rhode Island? (9)
__1 0 __3 11-20 __5 31-40
__2 1-10 __4 21-30 __6 over 40

4. Sex (10)
__1 Male __2 Female

5. Age Category
__1 Under 30 __3 40-49 __5 60-69
__2 30-39 __4 50-59 __6 over 70

Part II. This section is designed to gather information concerning your use of the Rhode Island Duplicate Prescription for Schedule II drugs. Again, we remind you that there are no identifiers thereby assuring your anonymity.

1. Have you ever issued a prescription (versus a hospital order) for a Schedule II (C-II) medication? (11)
__1 Yes __2 No

2. Please approximate the number of C-II prescriptions you prescribe per month for your ambulatory, non-hospitalized patients. (12)
__1 0 __3 26-50 __5 76-100
__2 1-25 __4 51-75 __6 over 100

3. Please identify the category or categories of C-II medications you prescribe (13-16)

__1 Narcotic analgesics __3 CNS stimulants
__2 Sedative/hypnotics __4 Other

4. Were you a licensed practitioner in Rhode Island prior to 1979? (17-18)
__1 Yes __2 No

If No, go to Part III. If Yes, do you feel your prescribing practices have changed since 1979?
__1 Yes __2 No

If No, go to Part III. If Yes, please answer questions 5 & 6.

5. Please rate the following statements according to the following scale: (19-23)
1-Strongly agree 2-Agree 3-No effect 4-Disagree 5-Strongly disagree

I feel I may be prescribing fewer Schedule II medications because:
__a. availability of better therapeutic alternatives
__b. better risk-benefit ratio for the patient by using Schedule III, IV or V or non-controlled legend drug
__c. patient mix
__d. fewer underutilization/overutilization problems with Schedule III, IV or V or non-controlled legend drug
__e. statement does not apply

6. Please rate the following statements according to the following scale: (24-30)
1-Strongly agree 2-Agree 3-No effect 4-Disagree 5-Strongly disagree

I feel I may be prescribing fewer Schedule II medications because:
__a. the RI C-II prescription form is difficult to use
__b. the RI C-II prescription form is often not handy to use
__c. the RI C-II prescription form does not provide the confidentiality to prescribe as one chooses
__d. the RI C-II prescription form does not provide patients with confidentiality
__e. problems with pharmacy/pharmacist when utilizing C-II prescription
__f. statement does not apply

Part III. This section concerns your opinions about prescribing C-II medications and and the Rhode Island Duplicate Presciption Law. For each of the following statements, please indicate the extent to which you agree according to the following scale:

1- Strongly agree 2-Agree 3-No effect 4-Disagree 5-Strongly disagree

1. ___ In a situation where a Schedule II medication is clearly indicated, I prefer to prescribe a therapeutic alternative which is a Schedule III, IV or V or non-controlled legend drug. (31)

2. ___ The availability of therapeutic alternatives to Schedule II medications in certain situations is a factor in <u>not</u> prescribing the C-II medication. (32)

3. ___ In the creation of a therapeutic regimen, using a RI C-II prescription form affects my decision process. (33)

4. ___ Utilizing a therapeutic alternative rather than a Schedule II medication, which may be the drug of choice, may be cause for malpractice litigation for the prescriber. (34)

5. ___ Utilizing a Schedule III, IV or V drug vs. a Schedule II medication (when clearly indicated) may have adverse consequences for the patient. (35)

6. ___ Utilizing a non-controlled legend drug vs. a Schedule II medication (when clearly indicated) may have adverse consequences for the patient. (36)

7. ___ There is less medical risk to the patient by using a Schedule III, IV or V or non-controlled legend drug when a Schedule II is appropriate. (37)

8. ___ There is better patient compliance with a Schedule III, IV or V or non-controlled legend drug over a Schedule II medication. (38)

9. ___ The RI Duplicate Prescription Law (RIDPL) helps reduce the abuse of legal controlled drugs in Schedule II. (39)

10. ___ The RIDPL helps thwart "doctor shoppers" (individuals who attempt to to obtain prescriptions from multiple prescribers). (40)

11. ___ The RIDPL causes a decrease in the availability of Schedule II drugs. (41)

12. ___ The RIDPL makes forgery of prescriptions for Schedule II drugs more difficult. (42)

13. ___ The RIDPL has made practitioners who prescribe Schedule II medications more aware of the abuse potential/side effects/toxicities of these drugs. (43)

14. ___ The RIDPL is beneficial for decreasing potential overutilization of Schedule II medications. (44)

15. ___ The RIDPL helps in identifying drug dealers or abusers in the medical community. (45)

16. ___ It is necessary for Rhode Island to regulate and review the prescribing practices of licensed practitioners for Schedule II substances. (46)

Part IV. In this final section, we would like to get your opinion concerning the Rhode Island Duplicate Prescription Law and its effect on you, your practice, your patients and the state of health care in Rhode Island.

1. Does the Rhode Island Duplicate Prescription Law affects the quality of care health care professionals provide to their patients? (47)
__1 *Yes, it has beneficial effects* __3 *No*
__2 *Yes, it has negative effects* __4 *Not sure/don't know*

2. Are you aware that the Rhode Island Division of Drug Control reviews each Schedule II duplicate prescription form received? (48)
__1 *Yes* __2 *No*

3. Have any of your patients reported to you difficulties in trying to fill Schedule II prescriptions? (49)
__1 *Yes* __2 *No*

4. The Rhode Island Duplicate Prescription Law is beneficial as a means of protecting the prescriber from patients who may try to obtain legitimate drugs for illicit means. (50)
__1 *Strongly agree* __3 *No effect* __5 *Strongly disagree*
__2 *Agree* __4 *Disagree*

5. Have you ever been aware of a situation where a colleague whose Schedule II prescribing practices resulted in licensure limitation, suspension or revocation or in mandatory drug rehabilitation? (51-52)

__1 *Yes* __2 *No* __3 *Do not wish to answer*

If Yes, do you feel the situation has caused you to limit the number of C-II prescriptions you write?
__1 *Yes* __2 *No*

Thank you for taking the time to complete this questionnaire. If you would like to comment on the Rhode Island Duplicate Prescription Law, please feel free to write your opinion in the space below.

APPENDIX B

SAS Programs

```
OPTIONS LS=80 NODATE NONUMBER;

PROC FORMAT PRINT;

     VALUE DEGFMT 1='DDS/DMD'
                  2='DO'
                  3='DPM'
                  4='DVM'
                  5='MD'
                  9='N/A';

     VALUE QUESFMT 1='YES'
                   2='NO'
                   9='N/A';

     VALUE QUESFMTX 1='YES'
                    0='NO';

     VALUE AGEX 0='UP TO 40'
                1='40 AND OVER';


     VALUE SEXX 0='MALE'
                1='FEMALE';

     VALUE DEGX 0='NON-MD DEGREES'
                1='MD';

     VALUE LICX 0='10 YEARS & UNDER'
                1='OVER 10 YEARS';

     VALUE PRACX 0='SOLO'
                 1='NON-SOLO PRACTICE';

     VALUE NUMX 1='1 OR MORE RX PER MONTH'
                0='NO RX PER MONTH';

     VALUE SPECFMT 01='ALLERGY'
                   02='ANESTHESIOLOGY'
                   03='CARDIOLOGY'
                   04='DERMATOLOGY'
                   05='EMERGENCY MEDICINE'
                   06='ENDOCRINOLOGY'
                   07='ENDODONTICS'
                   08='FAMILY MEDICINE'
                   09='GASTROENTEROLOGY'
                   10='GENERAL PRACTICE'
                   11='GERIATRICS'
                   12='HEMATOLOGY'
                   13='IMMUNOLOGY'
                   14='INFECTIOUS DISEASE'
                   15='INTERNAL MEDICINE'
                   16='NEPHROLOGY'
                   17='NEUROLOGY'
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```
                18='NUCLEAR MEDICINE'
                19='OBSTETRICS/GYNECOLOGY'
                20='ORTHODONTICS'
                21='OPHTHALMOLOGY'
                22='ONCOLOGY/RADIATION ONC'
                23='ORTHOPEDICS'
                24='OTORHINOLARYNGOLOGY'
                25='PATHOLOGY'
                26='PEDIATRICS'
                27='PERIODONTICS'
                28='PROSTHODONTICS'
                29='PHYSICAL MEDICINE'
                30='PROCTOLOGY'
                31='PSYCHIATRY'
                32='PULMONARY'
                33='RADIOLOGY'
                34='RHEUMATOLOGY'
                35='SPORTS MEDICINE'
                36='SURGERY-GENERAL'
                37='SURGERY-DENTAL'
                38='SURGERY-PLASTIC'
                39='SURGERY-OTHER'
                40='UROLOGY'
                41='OTHER'
                42='NOT SPECIFIED'
                43='SURGERY-PODIATRIC'
                99='N/A';

VALUE PRCFMT    1='SOLO'
                2='SMALL GROUP (2-4)'
                3='LARGE GROUP (>5)'
                4='HOSPITAL'
                5='GOVT/INDUSTRY'
                6='INDUSTRY'
                7='OTHER'
                9='N/A';

VALUE YRPRCFMT  1='UNDER 5'
                  2='6-10'
                  3='11-20'
                  4='21-30'
                  5='31-40'
                  6='OVER 40'
                  9='N/A/';

VALUE YRSFMT    1='0'
                2='1-10'
                3='11-20'
                4='21-30'
                5='31-40'
                6='OVER 40'
                9='N/A';

VALUE SEXFMT    1='M'
                2='F'
```

```
                9='N/A';

    VALUE AGEFMT 1='UNDER 30'
                 2='30-39'
                 3='40-49'
                 4='50-59'
                 5='60-69'
                 6='OVER 70'
                 9='N/A';

    VALUE RXNUMFMT 1='0'
                   2='1-25'
                   3='26-50'
                   4='51-75'
                   5='76-100'
                   6='OVER 100'
                   9='N/A';

    VALUE NARCFMT 1='NARCOTIC ANALGESIC'
                  9='N/A';

    VALUE SEDFMT 1='SEDATIVE/HYPNOTIC'
                 9='N/A';

    VALUE CNSFMT 1='CNS STIMULANT'
                 9='N/A';

    VALUE OTHRFMT 1='OTHER'
                  9='N/A';

    VALUE LIKERT 1='STRONGLY AGREE'
                 2='AGREE'
                 3='NOEFFECT'
                 4='DISAGREE'
                 5='STRONGLY DISAGREE'
                 9='N/A';

    VALUE LIKERTB 1='AGREE'
                  0='DISAGREE';

    VALUE CAREFMT 1='YES, BENEFICIAL'
                  2='YES, NEGATIVE'
                  3='NO'
                  4='NOT SURE/DON"T KNOW'
                  9='N/A';

    VALUE COLLGFMT 1='YES'
                   2='NO'
                   3='DO NOT WISH TO ANSWER'
                   9='N/A';

DATA THESIS;

    INFILE 'RIDPL DATA A';
```

```
INPUT (DEGREE SPECLTY) (1.)
      (SPECTYP1) (2.) (BORDCERT PRACTYPE LICYEARS RIPRACT1
      RIPRACT2 YRSRIPRA SEX AGECAT RXISSUE RXNUM CATNARC CATSED
      CATCNS CATOTHER RI1979 CHNGPRAC THERACT RISKBENE PTMIX
      UTILPROB NOTAPPL1 DIFICULT HANDY PRESCONF PTCONF PHARMPRB
      NOTAPPL2 THERPREF THERALT FORMAFF MALPRAC ADVCONS1 ADVCONS2
      LESSRISK COMPLNCE DECABUSE DOCSHOP DECAVAIL FORGRX AWARESE
      DECOVRUT IDABUSR REGULATE QLTYCARE REVIEW FILLRX PROTECT
      COLLEAG LIMITRX) (1.) (SPECTYP2 SPECTYP3) (2.);


      IF DEGREE=9 THEN DEGREE=.;
      IF SPECLTY=9 THEN SPECLTY=.;
      IF SPECTYP1=99 THEN SPECTYP1=.;
      IF BORDCERT=9 THEN BORDCERT=.;
      IF 5 LE PRACTYPE LE 6 THEN PRACTYPE=5;
      IF PRACTYPE=9 THEN PRACTYPE=.;
      IF LICYEARS=9 THEN LICYEARS=.;
      IF RIPRACT1=9 THEN RIPRACT1=.;
      IF RIPRACT2=9 THEN RIPRACT2=.;
      IF YRSRIPRA=9 THEN YRSRIPRA=.;
      IF SEX=9 THEN SEX=.;
      IF AGECAT=9 THEN AGECAT=.;
      IF RXISSUE=9 THEN RXISSUE=.;
      IF RXNUM=9 THEN RXNUM=.;
      IF CATNARC=9 THEN CATNARC=.;
      IF CATSED=9 THEN CATSED=.;
      IF CATCNS=9 THEN CATCNS=.;
      IF CATOTHER=9 THEN CATOTHER=.;
      IF RI1979=9 THEN RI1979=.:
      IF CHNGPRAC=9 THEN CHNGPRAC=.;

      IF 1 LE THERACT LE 2 THEN THERACT1=1;
      ELSE IF 4 LE THERACT LE 5 THEN THERACT1=0;
      ELSE IF THERACT EQ 3 OR 9 THEN THERACT1=.;

      IF 1 LE RISKBENE LE 2 THEN RISKBEN1=1;
      ELSE IF 4 LE RISKBENE LE 5 THEN RISKBEN1=0;
      ELSE IF RISKBENE EQ 3 OR 9 THEN RISKBEN1=.;

      IF 1 LE PTMIX LE 2 THEN PTMIX1=1;
      ELSE IF 4 LE PTMIX LE 5 THEN PTMIX1=0;
      ELSE IF PTMIX EQ 3 OR 9 THEN PTMIX1=.;

      IF 1 LE UTILPROB LE 2 THEN UTILPRO1=1;
      ELSE IF 4 LE UTILPROB LE 5 THEN UTILPRO1=0;
      ELSE IF UTILPROB EQ 3 OR 9 THEN UTILPRO1=.;

      IF 1 LE NOTAPPL1 LE 2 THEN NOTAPP11=1;
      ELSE IF 4 LE NOTAPPL1 LE 5 THEN NOTAPP11=0;
      ELSE IF NOTAPPL1 EQ 3 OR 9 THEN NOTAPP11=.;

      IF DIFICULT=9 THEN DIFICULT=.;
      IF HANDY=9 THEN HANDY=.;
```

```
IF PRESCONF=9 THEN PRESCONF=.;
IF PTCONF=9 THEN PTCONF=.;
IF PHARMPRB=9 THEN PHARMPRB=.;
IF NOTAPPL2=9 THEN NOTAPPL2=.;

IF 1 LE THERPREF LE 2 THEN THERPRE1=1;
ELSE IF 4 LE THERPREF LE 5 THEN THERPRE1=0;
ELSE IF THERPREF EQ 3 OR 9 THEN THERPRE1=.;

IF 1 LE THERALT LE 2 THEN THERALT1=1;
ELSE IF 4 LE THERALT LE 5 THEN THERALT1=0;
ELSE IF THERALT EQ 3 OR 9 THEN THERALT1=.;

IF 1 LE FORMAFF LE 2 THEN FORMAFF1=1;
ELSE IF 4 LE FORMAFF LE 5 THEN FORMAFF1=0;
ELSE IF FORMAFF EQ 3 OR 9 THEN FORMAFF1=.;

IF 1 LE MALPRAC LE 2 THEN MALPRAC1=1;
ELSE IF 4 LE MALPRAC LE 5 THEN MALPRAC1=0;
ELSE IF MALPRAC EQ 3 OR 9 THEN MALPRAC1=.;

IF 1 LE ADVCONS1 LE 2 THEN ADVCON11=1;
ELSE IF 4 LE ADVCONS1 LE 5 THEN ADVCON11=0;
ELSE IF ADVCONS1 EQ 3 OR 9 THEN ADVCON11=.;

IF 1 LE ADVCONS2 LE 2 THEN ADVCON21=1;
ELSE IF 4 LE ADVCONS2 LE 5 THEN ADVCON21=0;
ELSE IF ADVCONS EQ 3 OR 9 THEN ADVCON21=.;

IF 1 LE LESSRISK LE 2 THEN LESSRIS1=1;
ELSE IF 4 LE LESSRISK LE 5 THEN LESSRIS1=0;
ELSE IF LESSRISK EQ 3 OR 9 THEN LESSRIS1=.;

IF 1 LE COMPLNCE LE 2 THEN COMPLNC1=1;
ELSE IF 4 LE COMPLNCE LE 5 THEN COMPLNC1=0;
ELSE IF COMPLNCE EQ 3 OR 9 THEN COMPLNC1=.;

IF 1 LE DECABUSE LE 2 THEN DECABUS1=1;
ELSE IF 4 LE DECABUSE LE 5 THEN DECABUS1=0;
ELSE IF DECABUSE EQ 3 OR 9 THEN DECABUS1=.;

IF 1 LE DOCSHOP LE 2 THEN DOCSHOP1=1;
ELSE IF 4 LE DOCSHOP LE 5 THEN DOCSHOP1=0;
ELSE IF DOCSHOP EQ 3 OR 9 THEN DOCSHOP1=.;

IF 1 LE DECAVAIL LE 2 THEN DECAVAI1=1;
ELSE IF 4 LE DECAVAIL LE 5 THEN DECAVAI1=0;
ELSE IF DECAVAIL EQ 3 OR 9 THEN DECAVAI1=.;

IF 1 LE FORGRX LE 2 THEN FORGRX1=1;
ELSE IF 4 LE FORGRX LE 5 THEN FORGRX1=0;
ELSE IF FORGRX EQ 3 OR 9 THEN FORGRX=.;

IF 1 LE AWARESE LE 2 THEN AWARESE1=1;
ELSE IF 4 LE AWARESE LE 5 THEN AWARESE1=0;
```

```
ELSE IF AWARESE EQ 3 OR 9 THEN AWARESE1=.;

IF 1 LE DECOVRUT LE 2 THEN DECOVRU1=1;
ELSE IF 4 LE DECOVRUT LE 5 THEN DECOVRU1=0;
ELSE IF DECOVRUT EQ 3 OR 9 THEN DECOVRU1=.;

IF 1 LE IDABUSR LE 2 THEN IDABUSR1=1;
ELSE IF 4 LE IDABUSR LE 5 THEN IDABUSR1=0;
ELSE IF IDABUSR EQ 3 OR 9 THEN IDABUSR1=.;

IF 1 LE REGULATE LE 2 THEN REGULAT1=1;
ELSE IF 4 LE REGULATE LE 5 THEN REGULAT1=0;
ELSE IF REGULATE EQ 3 OR 9 THEN REGULAT1=.;

IF QLTYCARE=9 THEN QLTYCARE=.;
IF QLTYCARE=4 THEN QLTYCARE=.;
IF REVIEW=9 THEN REVIEW=.;
IF FILLRX=9 THEN FILLRX=.;

IF 1 LE PROTECT LE 2 THEN PROTECT1=1;
ELSE IF 4 LE PROTECT LE 5 THEN PROTECT1=0;
ELSE IF PROTECT EQ 3 OR 9 THEN PROTECT1=.;

IF COLLEAG=9 THEN COLLEAG=.;
IF COLLEAG=3 THEN COLLEAG=.;
IF LIMITRX=9 THEN LIMITRX=.;
IF SPECTYP2=99 THEN SPECTYP2=.;
IF SPECTYP3=99 THEN SPECTYP3=.;

IF RI1979=2 AND CHNGPRAC=1 THEN CHNGPRAC=.;
IF CHNGPRAC=2 AND 1 LE THERACT LE 5 THEN THERACT=.;
IF CHNGPRAC=2 AND 1 LE RISKBENE LE 5 THEN RISKBENE=.;
IF CHNGPRAC=2 AND 1 LE PTMIX LE 5 THEN PTMIX=.;
IF CHNGPRAC=2 AND 1 LE UTILPROB LE 5 THEN UTILPROB=.;
IF CHNGPRAC=2 AND 1 LE NOTAPPL1 LE 5 THEN NOTAPPL1=.;

IF CHNGPRAC=. AND 1 LE THERACT LE 5 THEN THERACT=.;
IF CHNGPRAC=. AND 1 LE RISKBENE LE 5 THEN RISKBENE=.;
IF CHNGPRAC=. AND 1 LE PTMIX LE 5 THEN PTMIX=.;
IF CHNGPRAC=. AND 1 LE UTILPROB LE 5 THEN UTILPROB=.;
IF CHNGPRAC=. AND 1 LE NOTAPPL1 LE 5 THEN NOTAPPL1=.;

IF CHNGPRAC=2 AND 1 LE DIFICULT LE 5 THEN DIFICULT=.;
IF CHNGPRAC=2 AND 1 LE HANDY LE 5 THEN HANDY=.;
IF CHNGPRAC=2 AND 1 LE PRESCONF LE 5 THEN PRESCONF=.;
IF CHNGPRAC=2 AND 1 LE PTCONF LE 5 THEN PTCONF=.;
IF CHNGPRAC=2 AND 1 LE PHARMPRB LE 5 THEN PHARMPRB=.;
IF CHNGPRAC=2 AND 1 LE NOTAPPL2 LE 5 THEN NOTAPPL2=.;

IF CHNGPRAC=. AND 1 LE DIFICULT LE 5 THEN DIFICULT=.;
IF CHNGPRAC=. AND 1 LE HANDY LE 5 THEN HANDY=.;
IF CHNGPRAC=. AND 1 LE PRESCONF LE 5 THEN PRESCONF=.;
IF CHNGPRAC=. AND 1 LE PTCONF LE 5 THEN PTCONF=.;
IF CHNGPRAC=. AND 1 LE PHARMPRB LE 5 THEN PHARMPRB=.;
IF CHNGPRAC=. AND 1 LE NOTAPPL2 LE 5 THEN NOTAPPL2=.;
```

```
IF COLLEAG=2 AND 1 LE LIMITRX LE 2 THEN LIMITRX=.;
IF COLLEAG=. AND 1 LE LIMITRX LE 2 THEN LIMITRX=.;

IF 1 LE DEGREE LE 4 THEN DEG1=0;
ELSE IF DEGREE=5 THEN DEG1=1;

IF RIPRACT1=1 THEN RIPRACX=1;
ELSE IF RIPRACT1=2 THEN RIPRACX=0;

IF RXISSUE=1 THEN RXISSUX=1;
ELSE IF RXISSUE=2 THEN RXISSUX=0;

IF RI1979=1 THEN RI1979X=1;
ELSE IF RI1979=2 THEN RI1979X=0;

IF REVIEW=1 THEN REVIEWX=1;
ELSE IF REVIEW=2 THEN REVIEWX=0;



IF SPECLTY=1 THEN SPECLTYX=1;
ELSE IF SPECLTY=2 THEN SPECLTYX=0;

IF BORDCERT=1 THEN BORDCERX=1;
ELSE IF BORDCERT=2 THEN BORDCERX=0;

IF SEX=1 THEN SEX1=0;
ELSE IF SEX=2 THEN SEX1=1;

IF 1 LE AGECAT LE 2 THEN AGE1=0;
ELSE IF 3 LE AGECAT LE 6 THEN AGE1=1:

IF PRACTYPE=1 THEN PRACTYPX=0;
ELSE IF 2 LE PRACTYPE LE 7 THEN PRACTYPX=1;

IF 1 LE LICYEARS LE 2 THEN LICYEARX=0;
ELSE IF 3 LE LICYEARS LE 6 THEN LICYEARX=1;


IF 2 LE RXNUM LE 6 THEN RXNUMX=1;
ELSE IF RXNUM=1 THEN RXNUMX=0;


     LABEL DEGREE='PRIMARY PROFESSIONAL DEGREE'
           SPECLTY='SPECIALTY PRACTICE'
           SPECTYP1='SPECIALTY PRACTICE #1'
           BORDCERT='BOARD CERTIFIED'
           PRACTYPE='PRACTICE TYPE'
           LICYEARS='# YEARS IN PRACTICE'
           RIPRACT1='PRESENTLY PRACTICING IN RI'
           RIPRACT2='EVER PRACTICED IN RI'
           YRSRIPRA='# YEARS PRACTICE IN RI'
           SEX='SEX'
```

```
AGECAT='AGE CATEGORY'
RXISSUE='ISSUANCE OF C-II RX'
RXNUM='APPROX # C-II RXS WRITTEN/MONTH'
CATNARC='PRESCRIBES/ED NARCOTICS'
CATSED='PRESCRIBES/ED SEDATIVE/HYPNOTICS'
CATCNS='PRESCRIBES/ED CNS STIMULANTS'
CATOTHER='PRESCRIBES/ED OTHER C-II'
RI1979='PRACTICED IN RI PRIOR TO 1979'
CHNGPRAC='HAS CHANGED PRESCRIBING PATTERNS'
THERACT='THERAPEUTIC ALTERNATIVES'
THERACT1='THERAPEUTIC ALTERNATIVES'
RISKBENE='RISK/BENEFIT RATIO'
RISKBEN1='RISK/BENEFIT RATIO'
PTMIX='PATIENT MIX'
PTMIX1='PATIENT MIX'
UTILPROB='UNDER/OVER UTILIZATION PROBS'
UTILPRO1='UNDER/OVER UTILIZATION PROBS'
NOTAPPL1='STATEMENT DOES NOT APPLY'
NOTAPP11='STATEMENT DOES NOT APPLY'
DIFICULT='C-II FORM DIFFICULT TO USE'
HANDY='C-II FORM NOT HANDY TO USE'
PRESCONF='CONFIDENTIALITY TO PRESCRIBE'
PTCONF='PATIENT CONFIDENTIALITY'
PHARMPRB='PROBLEMS WITH PHARMACY'
NOTAPPL2='STATEMENT DOES NOT APPLY'
THERPREF='PREFER TO PRESCRIBE NON-C-II'
THERPRE1='PREFER TO PRESCRIBE NON-C-II'
THERALT='AVAILABLE ALT TO C-II FACTOR'
THERALT1='AVAILABLE ALT TO C-II FACTOR'
FORMAFF='C-II FORM AFFECTS PRESCRIBING'
FORMAFF1='C-II FORM AFFECTS PRESCRIBING'
MALPRAC='MALPRACTICE RESULTING FROM ALT DRUG'
MALPRAC1='MALPRACTICE RESULTING FROM ALT DRUG'
ADVCONS1='ADVERSE CONSEQUENCES W/C-III-V'
ADVCON11='ADVERSE CONSEQUENCES W/C-III-V'
ADVCONS2='ADVERSE CONSEQUENCES W/NON-SCHEDULE'
ADVCON21='ADVERSE CONSEQUENCES W/NON-SCHEDULE'
LESSRISK='LESS RISK USING NON-C-II DRUG'
LESSRIS1='LESS RISK USING NON-C-II DRUG'
COMPLNCE='BETTER COMPLIANCE W/NON-CII DRUG'
COMPLNC1='BETTER COMPLIANCE W/NON-CII DRUG'
DECABUSE='REDUCTION OF DRUG ABUSE'
DECABUS1='REDUCTION OF DRUG ABUSE'
DOCSHOP='THWARTS DOCTOR SHOPPERS'
DOCSHOP1='THWARTS DOCTOR SHOPPERS'
DECAVAIL='DECREASES AVAILABILITY  OF C-II'
DECAVAI1='DECREASES AVAILABILITY OF C-II'
FORGRX='MAKES RX FORGERY DIFFICULT'
FORGRX1='MAKES RX FORGERY DIFFICULT'
AWARESE='MORE AWARE OF DRUG S/E'
AWARESE1='MORE AWARE OF DRUG S/E'
DECOVRUT='DECREASES OVERUTILIZATION OF C-II'
DECOVRU1='DECREASES OVERUTILIZATION OF C-II'
IDABUSR='ID DEALERS/ABUSERS IN MED COMMUN'
IDABUSR1='ID DEALERS/ABUSERS IN MED COMMUN'
```

```
        REGULATE='NECESSITY TO REGULATE PRESCRIBING'
        REGULAT1='NECESSITY TO REGULATE PRESCRIBING'
        QLTYCARE='RIDPL AFFECTS QUALITY OF CARE'
        REVIEW='KNOWLEDGE OF RI DDC REVIEW OF C-II'
        FILLRX='REPORTED DIFFICULTIES FILLING C-II'
        PROTECT='RIDPL PROTECTS PRESCRIBER FROM PT'
        PROTECT1='RIDPL PROTECTS PRESCRIBER FROM PT'
        COLLEAG='KNOWS COLLEAGUE UNDER DDC REVIEW'
        LIMITRX='RESULTING LIMIT OF PRESCRIBING C-II'
        SPECTYP2='2ND SPECIALTY PRACTICE'
        SPECTYP3='3RD SPECIALTY PRACTICE'
        RIPRACX='CURRENTLY PRACTICING IN RI'
        RXISSUX='EVER ISSUED C-II RX'
        RI1979X='PRACTICED IN RI PRIOR TO 1979'
        SPECLTYX='HAS SPECIALTY PRACTICE'
        REVIEWX='AWARE OF DDC REVIEW'
        BORDCERX='BOARD CERTIFIED'
        SEX1='SEX CATEGORY'
        AGE1='AGE CATEGORY'
        DEG1='PRIMARY PROFESSIONAL DEGREE'
        PRACTYPX='PRACTICE TYPE'
        LICYEARX='NUMBER YEARS LICENSED'
        RXNUMX='NUMBER OF C-II RX ISSUEDPER MONTH';

OBS=_N_;

FORMAT DEGREE DEGFMT.
       SPECLTY QUESFMT.
       SPECTYP1 SPECFMT.
       BORDCERT QUESFMT.
       PRACTYPE PRCFMT.
       LICYEARS YRPRCFMT.
       RIPRACT1 QUESFMT.
       RIPRACT2 QUESFMT.
       YRSRIPRA YRSFMT.
       SEX SEXFMT.
       AGECAT AGEFMT.
       RXISSUE QUESFMT.
       RXNUM RXNUMFMT.
       CATNARC NARCFMT.
       CATSED SEDFMT.
       CATCNS CNSFMT.
       CATOTHER OTHRFMT.
       RI1979 QUESFMT.
       CHNGPRAC QUESFMT.
       THERACT LIKERT.
       THERACT1 LIKERTB.
       RISKBENE LIKERT.
       RISKBEN1 LIKERTB.
       PTMIX LIKERT.
       PTMIX1 LIKERTB.
       UTILPROB LIKERT.
       UTILPRO1 LIKERTB.
       NOTAPPL1 LIKERT.
```

```
NOTAPP11 LIKERTB.
DIFICULT LIKERT.
HANDY LIKERT.
PRESCONF LIKERT.
PTCONF LIKERT.
PHARMPRB LIKERT.
NOTAPPL2 LIKERT.
THERPREF LIKERT.
THERPRE1 LIKERTB.
THERALT LIKERT.
THERALT1 LIKERTB.
FORMAFF LIKERT.
FORMAFF1 LIKERTB.
MALPRAC LIKERT.
MALPRAC1 LIKERTB.
ADVCONS1 LIKERT.
ADVCON11 LIKERTB.
ADVCONS2 LIKERT.
ADVCON21 LIKERTB.
LESSRISK LIKERT.
LESSRIS1 LIKERTB.
COMPLNCE LIKERT.
COMPLNC1 LIKERTB.
DECABUSE LIKERT.
DECABUS1 LIKERTB.
DOCSHOP LIKERT.
DOCSHOP1 LIKERTB.
DECAVAIL LIKERT.
DECAVAI1 LIKERTB.
FORGRX LIKERT.
FORGRX1 LIKERTB.
AWARESE LIKERT.
AWARESE1 LIKERTB.
DECOVRUT LIKERT.
DECOVRU1 LIKERTB.
IDABUSR LIKERT.
IDABUSR1 LIKERTB.
REGULATE LIKERT.
REGULAT1 LIKERTB.
QLTYCARE CAREFMT.
REVIEW QUESFMT.
FILLRX QUESFMT.
PROTECT LIKERT.
PROTECT1 LIKERTB.
COLLEAG COLLGFMT.
LIMITRX QUESFMT.
SPECTYP2 SPECFMT.
SPECTYP3 SPECFMT.
RIPRACX QUESFMTX.
RXISSUX QUESFMTX.
RI1979X QUESFMTX.
REVIEWX QUESFMTX.
SPECLTYX QUESFMTX.
BORDCERX QUESFMTX.
SEX1 SEXX.
```

```
            DEG1 DEGX.
            LICYEARX LICX.
            AGE1 AGEX.
            PRACTYPX PRACX.
            RXNUMX NUMX.;

PROC FORMAT PRINT;

VALUE LCFMT 1='UP TO 10'
            2='11-20'
            3='21-30'
            4='GREATER THAN 30';

VALUE RIFMT 1='UP TO 10'
            2='11-20'
            3='21-30'
            4='GREATER THAN 30';

VALUE AGE2FMT 1='UP TO 39'
              2='40-49'
              3='50-59'
              4='60 AND OVER';

VALUE CIIFMT 1='0-25'
             2='26-50'
             3='GREATER THAN 50';


DATA NEW; SET THESIS;

     IF 1 LE LICYEARS LE 2 THEN LICENSE=1;
     ELSE IF LICYEARS=3 THEN LICENSE=2;
     ELSE IF LICYEARS=4 THEN LICENSE=3;
     ELSE IF 5 LE LICYEARS LE 6 THEN LICENSE=4;
     ELSE LICENSE=.;

     IF 1 LE YRSRIPRA LE 2 THEN RIYRS=1;
     ELSE IF YRSRIPRA=3 THEN RIYRS=2;
     ELSE IF YRSRIPRA=4 THEN RIYRS=3;
     ELSE IF 5 LE YRSRIPRA LE 6 THEN RIYRS=4;
     ELSE RIYRS=.;

     IF 1 LE AGECAT LE 2 THEN AGECAT2=1;
     ELSE IF AGECAT=3 THEN AGECAT2=2;
     ELSE IF AGECAT=4 THEN AGECAT2=3;
     ELSE IF 5 LE AGECAT LE 6 THEN AGECAT2=4;
     ELSE AGECAT2=.;

     IF 1 LE RXNUM LE 2 THEN CIIRX=1;
     ELSE IF RXNUM=3 THEN CIIRX=2;
     ELSE IF 4 LE RXNUM LE 6 THEN CIIRX=3;
     ELSE CIIRX=.;

LABEL LICENSE='# YRS IN PRACTICE'
      RIYRS='# YRS PRACTICE IN RI'
```

```
      AGECAT2='AGE CATEGORY'
      CIIRX='APPROX # C-II RXS WRITTEN/MONTH':

FORMAT LICENSE LCFMT.
       RIYRS RIFMT.
       AGECAT2 AGE2FMT.
       CIIRX CIIFMT.;

DATA NEW_DAT: SET NEW;
     SEXAGE=SEX1*AGE1;
     DEGAGE=AGE1*DEG1;
     PRAC79=PRACTYPX*RI1979X;
     DEG79=DEG1*RI1979X;
     SEXDEG=SEX1*DEG1;

PROC FREQ DATA=NEW;
     TITLE 'FREQUENCIES FOR EACH VARIABLE';
     TITLE2 'FOR ENTIRE DATA SET';

PROC FREQ DATA=NEW;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*FORMAFF1/CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE FORM AFFECTS DECISION';
      TITLE3 'BIVARIATE ANALYSIS FOR ENTIRE DATA SET ';

PROC FREQ DATA=NEW;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*THERPRE1/CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE THERPEUTIC PREFERENCE';
      TITLE3 'BIVARIATE ANALYSIS FOR ENTIRE DATA SET';
```

```
 DATA BEFORE79; SET NEW_DAT;
      IF RI1979X=1;

PROC FREQ DATA=BEFORE79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*FORMAFF1 CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE FORM AFFECTS DECISION';
      TITLE3 'BIVARIATE ANALYSIS FOR THOSE IN PRACTICE BEFORE 1979';

PROC FREQ DATA=BEFORE79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*THERPRE1/CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE THERPEUTIC PREFERENCE';
      TITLE3 'BIVARIATE ANALYSIS FOR THOSE IN PRACTICE BEFORE 1979';

 DATA AFTER79; SET NEW_DAT;
      IF RI1979X=0;

PROC FREQ DATA=AFTER79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*FORMAFF1/CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE FORM AFFECTS DECISION';
      TITLE3 'BIVARIATE ANALYSIS FOR THOSE IN PRACTICE AFTER 1979';

PROC FREQ DATA=AFTER79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*THERPRE1 CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE THERPEUTIC PREFERENCE';
      TITLE3 'BIVARIATE ANAYLSIS FOR THOSE IN PRACTICE AFTER 1979';
```

```
DATA BEFORE79; SET NEW_DAT;
     IF RI1979X=1;

PROC FREQ DATA=BEFORE79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*FORMAFF1 CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE FORM AFFECTS DECISION';
      TITLE3 'BIVARIATE ANALYSIS FOR THOSE IN PRACTICE BEFORE 1979';

PROC FREQ DATA=BEFORE79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*THERPRE1 CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE THERPEUTIC PREFERENCE';
      TITLE3 'BIVARIATE ANALYSIS FOR THOSE IN PRACTICE BEFORE 1979';

DATA AFTER79; SET NEW_DAT;
     IF RI1979X=0;

PROC FREQ DATA=AFTER79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*FORMAFF1 CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE FORM AFFECTS DECISION';
      TITLE3 'BIVARIATE ANALYSIS FOR THOSE IN PRACTICE AFTER 1979';

PROC FREQ DATA=AFTER79;
     TABLES (DEG1 SPECLTYX BORDCERX PRACTYPX LICYEARX RIPRACX
     REVIEWX SEX1 AGE1 RXISSUX RXNUMX RI1979X)*THERPRE1 CHISQ;

      TITLE 'CHI SQUARES FOR INDEPENDENT VARIABLES';
      TITLE2 'BY DEPENDENT VARIABLE THERPEUTIC PREFERENCE';
      TITLE3 'BIVARIATE ANAYLSIS FOR THOSE IN PRACTICE AFTER 1979';
```

```
PROC REG DATA=NEW_DAT;
    MODEL FORMAFF1=RIPRACX RXISSUX RI1979X SEX1 AGE1 SPECLTYX REVIEWX
                   RXNUMX DEG1 PRACTYPX LICYEARX SEXAGE DEGAGE PRAC79
                   DEG79 SEXDEG/COLLIN;

PROC REG DATA=NEW_DAT;
    MODEL THERPRE1=RIPRACX RXISSUX RI1979X SEX1 AGE1 SPECLTYX REVIEWX
                   RXNUMX DEG1 PRACTYPX LICYEARX SEXAGE DEGAGE PRAC79
                   DEG79 SEXDEG/COLLIN;


PROC LOGIST DATA=NEW_DAT;
    MODEL FORMAFF1=RXNUMX RI1979X SEX1 AGE1 SPECLTYX REVIEWX
                   DEG1 PRACTYPX LICYEARX;

     TITLE 'FINAL THESIS MODEL';
     TITLE2 'THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION';
     TITLE3 'FOR THE ENTIRE DATA SET';

PROC LOGIST DATA=NEW_DAT;
    MODEL THERPRE1=RI1979X SEX1 AGE1 SPECLTYX RXNUMX
                   DEG1 PRACTYPX LICYEARX REVIEWX;

     TITLE 'FINAL THESIS MODEL';
     TITLE2 'THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE';
     TITLE3 'FOR THE ENTIRE DATA SET';

DATA BEFORE79; SET NEW_DAT;
     IF RI1979X=1;

DATA AFTER79; SET NEW_DAT;
     IF RI1979X=0;


PROC LOGIST DATA=BEFORE79;
    MODEL FORMAFF1=RXNUMX REVIEWX PRACTYPX RXISSUX;

     TITLE 'FINAL THESIS MODEL';
     TITLE2 'THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION';
     TITLE3 'FOR THOSE IN PRACTICE BEFORE 1979';
```

```
PROC LOGIST DATA=BEFORE79;
     MODEL THERPRE1=SPECLTYX DEG1 PRACTYPX REVIEWX RXISSUX;

      TITLE 'FINAL THESIS MODEL';
      TITLE2 'THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE';
      TITLE3 'FOR THOSE IN PRACTICE BEFORE 1979';

PROC LOGIST DATA=AFTER79;
     MODEL FORMAFF1=SEX1 AGE1 RXNUMX REVIEWX DEG1 PRACTYPX LICYEARX;

      TITLE 'FINAL THESIS MODEL';
      TITLE2 'THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION';
      TITLE3 'FOR THOSE IN PRACTICE AFTER 1979';

PROC LOGIST DATA=AFTER79;
     MODEL THERPRE1=SEX1 AGE1 SPECLTYX DEG1 PRACTYPX
             RXNUMX LICYEARX REVIEWX;

      TITLE 'FINAL THESIS MODEL';
      TITLE2 'THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE';
      TITLE3 'FOR THOSE IN PRACTICE AFTER 1979';
```

APPENDIX C

Frequencies of Data

FREQUENCIES FOR EACH VARIABLE
FOR ENTIRE DATA SET

PRIMARY PROFESSIONAL DEGREE

DEGREE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DDS/DMD	64	9.7	64	9.7
DO	40	6.1	104	15.8
DPM	10	1.5	114	17.3
DVM	13	2.0	127	19.3
MD	532	80.7	659	100.0

Frequency Missing = 2

SPECIALTY PRACTICE

SPECLTY	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	519	82.6	519	82.6
NO	109	17.4	628	100.0

Frequency Missing = 33

SPECIALTY PRACTICE #1

SPECTYP1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
ALLERGY	5	0.9	5	0.9
ANESTHESIOLOGY	11	2.0	16	2.9
CARDIOLOGY	13	2.4	29	5.3
DERMATOLOGY	13	2.4	42	7.6
EMERGENCY MEDICI	19	3.4	61	11.1
ENDOCRINOLOGY	3	0.5	64	11.6
ENDODONTICS	3	0.5	67	12.1
FAMILY MEDICINE	43	7.8	110	19.9
GASTROENTEROLOGY	8	1.4	118	21.4
GENERAL PRACTICE	3	0.5	121	21.9
GERIATRICS	3	0.5	124	22.5
HEMATOLOGY	4	0.7	128	23.2
INFECTIOUS DISEA	4	0.7	132	23.9
INTERNAL MEDICIN	113	20.5	245	44.4
NEPHROLOGY	3	0.5	248	44.9
NEUROLOGY	6	1.1	254	46.0
NUCLEAR MEDICINE	1	0.2	255	46.2
OBSTETRICS GYNEC	35	6.3	290	52.5
ORTHODONTICS	1	0.2	291	52.7
OPHTHALMOLOGY	10	1.8	301	54.5
ONCOLOGY RADIATI	11	2.0	312	56.5
ORTHOPEDICS	9	1.6	321	58.2
OTORHINOLARYNGOL	7	1.3	328	59.4
PATHOLOGY	9	1.6	337	61.1
PEDIATRICS	46	8.3	383	69.4
PERIODONTICS	4	0.7	387	70.1
PROSTHODONTICS	1	0.2	388	70.3
PSYCHIATRY	42	7.6	430	77.9
PULMONARY	6	1.1	436	79.0
RADIOLOGY	7	1.3	443	80.3
RHEUMATOLOGY	3	0.5	446	80.8
SURGERY-GENERAL	31	5.6	477	86.4
SURGERY-DENTAL	11	2.0	488	88.4
SURGERY-PLASTIC	5	0.9	493	89.3
SURGERY-OTHER	21	3.8	514	93.1
UROLOGY	14	2.5	528	95.7
OTHER	12	2.2	540	97.8
NOT SPECIFIED	9	1.6	549	99.5
SURGERY-PODIATRI	3	0.5	552	100.0

Frequency Missing = 109

BOARD CERTIFIED

BORDCERT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	450	80.5	450	80.5
NO	109	19.5	559	100.0

Frequency Missing = 102

PRACTICE TYPE

PRACTYPE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
SOLO	271	42.3	271	42.3
SMALL GROUP (2-4	129	20.1	400	62.4
LARGE GROUP (>5)	82	12.8	482	75.2
HOSPITAL	109	17.0	591	92.2
GOVT INDUSTRY	14	2.2	605	94.4
OTHER	36	5.6	641	100.0

Frequency Missing = 20

YEARS IN PRACTICE

LICYEARS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
UNDER 5	103	15.7	103	15.7
6-10	165	25.1	268	40.7
11-20	191	29.0	459	69.8
21-30	102	15.5	561	85.3
31-40	56	8.5	617	93.8
OVER 40	41	6.2	658	100.0

Frequency Missing = 3

PRESENTLY PRACTICING IN RI

RIPRACT1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	591	90.4	591	90.4
NO	63	9.6	654	100.0

Frequency Missing = 7

EVER PRACTICED IN RI

RIPRACT2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	43	71.7	43	71.7
NO	17	28.3	60	100.0

Frequency Missing = 601

* YEARS PRACTICE IN RI

YRSRIPRA	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	19	2.9	19	2.9
1-10	346	52.7	365	55.6
11-20	155	23.6	520	79.3
21-30	75	11.4	595	90.7
31-40	40	6.1	635	96.8
OVER 40	21	3.2	656	100.0

Frequency Missing = 5

SEX

SEX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
M	545	83.5	545	83.5
F	108	16.5	653	100.0

Frequency Missing = 8

AGE CATEGORY

AGECAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
UNDER 30	19	2.9	19	2.9
30-39	240	36.4	259	39.3
40-49	182	27.6	441	66.9
50-59	107	16.2	548	83.2
60-69	73	11.1	621	94.2
OVER 70	38	5.8	659	100.0

Frequency Missing = 2

ISSUANCE OF C-II RX

RXISSUE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	585	90.4	585	90.4
NO	62	9.6	647	100.0

Frequency Missing = 14

APPROX # C-II RXS WRITTEN/MONTH

RXNUM	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	143	22.4	143	22.4
1-25	466	73.0	609	95.5
26-50	20	3.1	629	98.6
51-75	4	0.6	633	99.2
76-100	1	0.2	634	99.4
OVER 100	4	0.6	638	100.0

Frequency Missing = 23

PRACTICED IN RI PRIOR TO 1979

RI1979	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	295	45.4	295	45.4
NO	355	54.6	650	100.0

Frequency Missing = 11

HAS CHANGED PRESCRIBING PATTERNS

CHNGPRAC	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	59	29.1	59	29.1
NO	144	70.9	203	100.0

Frequency Missing = 458

THERAPEUTIC ALTERNATIVES

THERACT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	13	2.3	13	2.3
AGREE	13	2.3	26	4.5
NOEFFECT	6	1.0	32	5.6
DISAGREE	7	1.2	39	6.8
STRONGLY DISAGRE	4	0.7	43	7.5
N A	531	92.5	574	100.0

Frequency Missing = 87

PRESCRIBES/ED NARCOTICS

CATNARC	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NARCOTIC ANALGES	506	100.0	506	100.0

Frequency Missing = 155

PRESCRIBES/ED SEDATIVE/HYPNOTICS

CATSED	Frequency	Percent	Cumulative Frequency	Cumulative Percent
SEDATIVE HYPNOTI	146	100.0	146	100.0

Frequency Missing = 515

PRESCRIBES/ED CNS STIMULANTS

CATCNS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
CNS STIMULANT	118	100.0	118	100.0

Frequency Missing = 543

PRESCRIBES/ED OTHER C-II

CATOTHER	Frequency	Percent	Cumulative Frequency	Cumulative Percent
OTHER	39	100.0	39	100.0

Frequency Missing = 622

RISK BENEFIT RATIO

RISKBENE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	9	1.5	9	1.5
AGREE	17	2.9	26	4.5
NOEFFECT	6	1.0	32	5.5
DISAGREE	6	1.0	38	6.5
STRONGLY DISAGRE	3	0.5	41	7.1
N A	540	92.9	581	100.0

Frequency Missing = 80

PATIENT MIX

PTMIX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
AGREE	9	1.5	9	1.5
NOEFFECT	22	3.8	31	5.3
DISAGREE	3	0.5	34	5.8
STRONGLY DISAGRE	5	0.9	39	6.7
N A	546	93.3	585	100.0

Frequency Missing = 76

UNDER OVER UTILIZATION PROBS

UTILPROB	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	6	1.0	6	1.0
AGREE	11	1.9	17	2.9
NOEFFECT	11	1.9	28	4.8
DISAGREE	8	1.4	36	6.2
STRONGLY DISAGRE	1	0.2	37	6.3
N A	546	93.7	583	100.0

Frequency Missing = 78

STATEMENT DOES NOT APPLY

NOTAPPL1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	3	0.5	3	0.5
NOEFFECT	5	0.8	8	1.3
STRONGLY DISAGRE	7	1.1	15	2.5
N A	596	97.5	611	100.0

Frequency Missing = 50

C-II FORM DIFFICULT TO USE

DIFICULT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	8	17.8	8	17.8
AGREE	5	11.1	13	28.9
NOEFFECT	8	17.8	21	46.7
DISAGREE	11	24.4	32	71.1
STRONGLY DISAGRE	13	28.9	45	100.0

Frequency Missing = 616

C-II FORM NOT HANDY TO USE

HANDY	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	15	33.3	15	33.3
AGREE	13	28.9	28	62.2
NOEFFECT	6	13.3	34	75.6
DISAGREE	6	13.3	40	88.9
STRONGLY DISAGRE	5	11.1	45	100.0

Frequency Missing = 616

CONFIDENTIALITY TO PRESCRIBE

PRESCONF	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	6	13.3	6	13.3
AGREE	1	2.2	7	15.6
NOEFFECT	17	37.8	24	53.3
DISAGREE	13	28.9	37	82.2
STRONGLY DISAGRE	8	17.8	45	100.0

Frequency Missing = 616

PATIENT CONFIDENTIALITY

PTCONF	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	6	13.6	6	13.6
AGREE	6	13.6	12	27.3
NOEFFECT	13	29.5	25	56.8
DISAGREE	11	25.0	36	81.8
STRONGLY DISAGRE	8	18.2	44	100.0

Frequency Missing = 617

PROBLEMS WITH PHARMACY

PHARMPRB	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	6	14.0	6	14.0
AGREE	4	9.3	10	23.3
NOEFFECT	13	30.2	23	53.5
DISAGREE	10	23.3	33	76.7
STRONGLY DISAGRE	10	23.3	43	100.0

Frequency Missing = 618

STATEMENT DOES NOT APPLY

NOTAPPL2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	4	28.6	4	28.6
AGREE	2	14.3	6	42.9
NOEFFECT	5	35.7	11	78.6
DISAGREE	1	7.1	12	85.7
STRONGLY DISAGRE	2	14.3	14	100.0

Frequency Missing = 647

PREFER TO PRESCRIBE NON-C-II

THERPREF	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	72	10.9	72	10.9
AGREE	145	21.9	217	32.8
NOEFFECT	54	8.2	271	41.0
DISAGREE	216	32.7	487	73.7
STRONGLY DISAGRE	136	20.6	623	94.3
N A	38	5.7	661	100.0

AVAILABLE ALT TO C-II FACTOR

THERALT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	138	20.9	138	20.9
AGREE	331	50.1	469	71.0
NOEFFECT	60	9.1	529	80.0
DISAGREE	59	8.9	588	89.0
STRONGLY DISAGRE	34	5.1	622	94.1
N A	39	5.9	661	100.0

C-II FORM AFFECTS PRESCRIBING

FORMAFF	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	56	8.5	56	8.5
AGREE	170	25.7	226	34.2
NOEFFECT	153	23.1	379	57.3
DISAGREE	110	16.6	489	74.0
STRONGLY DISAGRE	133	20.1	622	94.1
N A	39	5.9	661	100.0

MALPRACTICE RESULTING FROM ALT DRUG

MALPRAC	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	21	3.2	21	3.2
AGREE	99	15.0	120	18.2
NOEFFECT	133	20.1	253	38.3
DISAGREE	246	37.2	499	75.5
STRONGLY DISAGRE	117	17.7	616	93.2
N A	45	6.8	661	100.0

ADVERSE CONSEQUENCES W C-III-V

ADVCONS1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	55	8.3	55	8.3
AGREE	282	42.7	337	51.0
NOEFFECT	94	14.2	431	65.2
DISAGREE	147	22.2	578	87.4
STRONGLY DISAGRE	37	5.6	615	93.0
N A	46	7.0	661	100.0

ADVERSE CONSEQUENCES W NON-SCHEDULE

ADVCONS2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	63	9.5	63	9.5
AGREE	294	44.5	357	54.0
NOEFFECT	96	14.5	453	68.5
DISAGREE	111	16.8	564	85.3
STRONGLY DISAGRE	31	4.7	595	90.0
N A	66	10.0	661	100.0

LESS RISK USING NON-C-II DRUG

LESSRISK	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	15	2.3	15	2.3
AGREE	113	17.1	128	19.4
NOEFFECT	106	16.0	234	35.4
DISAGREE	311	47.0	545	82.5
STRONGLY DISAGRE	63	9.5	608	92.0
6	1	0.2	609	92.1
N A	52	7.9	661	100.0

BETTER COMPLIANCE W NON-CII DRUG

COMPLNCE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	7	1.1	7	1.1
AGREE	32	4.8	39	5.9
NOEFFECT	161	24.4	200	30.3
DISAGREE	342	51.7	542	82.0
STRONGLY DISAGRE	67	10.1	609	92.1
N A	52	7.9	661	100.0

REDUCTION OF DRUG ABUSE

DECABUSE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	120	18.2	120	18.2
AGREE	307	46.4	427	64.6
NOEFFECT	88	13.3	515	77.9
DISAGREE	56	8.5	571	86.4
STRONGLY DISAGRE	37	5.6	608	92.0
N A	53	8.0	661	100.0

THWARTS DOCTOR SHOPPERS

DOCSHOP	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	120	18.2	120	18.2
AGREE	264	39.9	384	58.1
NOEFFECT	113	17.1	497	75.2
DISAGREE	76	11.5	573	86.7
STRONGLY DISAGRE	32	4.8	605	91.5
N A	56	8.5	661	100.0

DECREASES AVAILABILITY OF C-II

DECAVAIL	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	72	10.9	72	10.9
AGREE	232	35.1	304	46.0
NOEFFECT	141	21.3	445	67.3
DISAGREE	121	18.3	566	85.6
STRONGLY DISAGRE	38	5.7	604	91.4
N A	57	8.6	661	100.0

MAKES RX FORGERY DIFFICULT

FORGRX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	138	24.9	138	24.9
AGREE	372	67.0	510	91.9
DISAGREE	31	5.6	541	97.5
STRONGLY DISAGRE	14	2.5	555	100.0

Frequency Missing = 106

MORE AWARE OF DRUG S E

AWARESE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	92	13.9	92	13.9
AGREE	287	43.4	379	57.3
NOEFFECT	113	17.1	492	74.4
DISAGREE	95	14.4	587	88.8
STRONGLY DISAGRE	28	4.2	615	93.0
N A	46	7.0	661	100.0

DECREASES OVERUTILIZATION OF C-II

DECOVRUT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	88	13.3	88	13.3
AGREE	351	53.1	439	66.4
NOEFFECT	103	15.6	542	82.0
DISAGREE	50	7.6	592	89.6
STRONGLY DISAGRE	23	3.5	615	93.0
N A	46	7.0	661	100.0

ID DEALERS/ABUSERS IN MED COMMUN

IDABUSR	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	70	10.6	70	10.6
AGREE	271	41.0	341	51.6
NOEFFECT	146	22.1	487	73.7
DISAGREE	75	11.3	562	85.0
STRONGLY DISAGRE	36	5.4	598	90.5
N A	63	9.5	661	100.0

NECESSITY TO REGULATE PRESCRIBING

REGULATE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	86	13.0	86	13.0
AGREE	301	45.5	387	58.5
NOEFFECT	74	11.2	461	69.7
DISAGREE	107	16.2	568	85.9
STRONGLY DISAGRE	46	7.0	614	92.9
N A	47	7.1	661	100.0

RIDPL AFFECTS QUALITY OF CARE

QLTYCARE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES. BENEFICIAL	149	30.5	149	30.5
YES. NEGATIVE	41	8.4	190	38.9
NO	298	61.1	488	100.0

Frequency Missing = 173

KNOWLEDGE OF RI DDC REVIEW OF C-II

REVIEW	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	331	52.3	331	52.3
NO	302	47.7	633	100.0

Frequency Missing = 28

REPORTED DIFFICULTIES FILLING C-II

FILLRX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	121	19.3	121	19.3
NO	505	80.7	626	100.0

Frequency Missing = 35

RIDPL PROTECTS PRESCRIBER FROM PT

PROTECT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STRONGLY AGREE	106	16.0	106	16.0
AGREE	317	48.0	423	64.0
NOEFFECT	129	19.5	552	83.5
DISAGREE	42	6.4	594	89.9
STRONGLY DISAGRE	23	3.5	617	93.3
N A	44	6.7	661	100.0

KNOWS COLLEAGUE UNDER DDC REVIEW

COLLEAG	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	93	14.7	93	14.7
NO	538	85.3	631	100.0

Frequency Missing = 30

RESULTING LIMIT OF PRESCRIBING C-II

LIMITRX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	22	26.5	22	26.5
NO	61	73.5	83	100.0

Frequency Missing = 578

2ND SPECIALTY PRACTICE

SPECTYP2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
ANESTHESIOLOGY	1	2.7	1	2.7
CARDIOLOGY	2	5.4	3	8.1
EMERGENCY MEDICI	5	13.5	8	21.6
ENDOCRINOLOGY	1	2.7	9	24.3
GASTROENTEROLOGY	1	2.7	10	27.0
GENERAL PRACTICE	1	2.7	11	29.7
GERIATRICS	2	5.4	13	35.1
HEMATOLOGY	3	8.1	16	43.2
IMMUNOLOGY	1	2.7	17	45.9
INTERNAL MEDICIN	6	16.2	23	62.2
NEPHROLOGY	1	2.7	24	64.9
ONCOLOGY RADIATI	8	21.6	32	86.5
PULMONARY	2	5.4	34	91.9
RHEUMATOLOGY	2	5.4	36	97.3
SURGERY-PLASTIC	1	2.7	37	100.0

Frequency Missing = 624

3RD SPECIALTY PRACTICE

SPECTYP3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
HEMATOLOGY	2	66.7	2	66.7
ONCOLOGY-RADIATI	1	33.3	3	100.0

Frequency Missing = 658

THERAPEUTIC ALTERNATIVES

THERACT1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	28	24.6	28	24.6
AGREE	86	75.4	114	100.0

Frequency Missing = 547

RISK/BENEFIT RATIO

RISKBEN1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	28	28.6	28	28.6
AGREE	70	71.4	98	100.0

Frequency Missing = 563

PATIENT MIX

PTMIX1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	23	45.1	23	45.1
AGREE	28	54.9	51	100.0

Frequency Missing = 610

UNDER/OVER UTILIZATION PROBS

UTILPRO1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	31	39.7	31	39.7
AGREE	47	60.3	78	100.0

Frequency Missing = 583

STATEMENT DOES NOT APPLY

NOTAPP11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	19	38.0	19	38.0
AGREE	31	62.0	50	100.0

Frequency Missing = 611

PREFER TO PRESCRIBE NON-C-II

THERPRE1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	352	61.9	352	61.9
AGREE	217	38.1	569	100.0

Frequency Missing = 92

AVAILABLE ALT TO C-II FACTOR

THERALT1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	93	16.5	93	16.5
AGREE	469	83.5	562	100.0

Frequency Missing = 99

C-II FORM AFFECTS PRESCRIBING

FORMAFF1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	243	51.8	243	51.8
AGREE	226	48.2	469	100.0

Frequency Missing = 192

MALPRACTICE RESULTING FROM ALT DRUG

MALPRAC1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	363	75.2	363	75.2
AGREE	120	24.8	483	100.0

Frequency Missing = 178

ADVERSE CONSEQUENCES W/C-III-V

ADVCON11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	184	35.3	184	35.3
AGREE	337	64.7	521	100.0

Frequency Missing = 140

ADVERSE CONSEQUENCES W NON-SCHEDULE

ADVCON21	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	142	28.5	142	28.5
AGREE	357	71.5	499	100.0

Frequency Missing = 162

ADVCONS	Frequency	Percent	Cumulative Frequency	Cumulative Percent

Frequency Missing = 661

LESS RISK USING NON-C-II DRUG

LESSRIS1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	374	74.5	374	74.5
AGREE	128	25.5	502	100.0

Frequency Missing = 159

BETTER COMPLIANCE W/NON-CII DRUG

COMPLNC1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	409	91.3	409	91.3
AGREE	39	8.7	448	100.0

Frequency Missing = 213

REDUCTION OF DRUG ABUSE

DECABUS1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	93	17.9	93	17.9
AGREE	427	82.1	520	100.0

Frequency Missing = 141

THWARTS DOCTOR SHOPPERS

DOCSHOP1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	108	22.0	108	22.0
AGREE	384	78.0	492	100.0

Frequency Missing = 169

DECREASES AVAILABILITY OF C-II

DECAVAI1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	159	34.3	159	34.3
AGREE	304	65.7	463	100.0

Frequency Missing = 198

MAKES RX FORGERY DIFFICULT

FORGRX1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	45	8.1	45	8.1
AGREE	510	91.9	555	100.0

Frequency Missing = 106

MORE AWARE OF DRUG S/E

AWARESE1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	123	24.5	123	24.5
AGREE	379	75.5	502	100.0

Frequency Missing = 159

DECREASES OVERUTILIZATION OF C-II

DECOVRU1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	73	14.3	73	14.3
AGREE	439	85.7	512	100.0

Frequency Missing = 149

ID DEALERS ABUSERS IN MED COMMUN

IDABUSR1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	111	24.6	111	24.6
AGREE	341	75.4	452	100.0

Frequency Missing = 209

NECESSITY TO REGULATE PRESCRIBING

REGULAT1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	153	28.3	153	28.3
AGREE	387	71.7	540	100.0

Frequency Missing = 121

RIDPL PROTECTS PRESCRIBER FROM PT

PROTECT1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DISAGREE	65	13.3	65	13.3
AGREE	423	86.7	488	100.0

Frequency Missing = 173

PRIMARY PROFESSIONAL DEGREE

DEG1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NON-MD DEGREES	127	19.3	127	19.3
MD	532	80.7	659	100.0

Frequency Missing = 2

CURRENTLY PRACTICING IN RI

RIPRACX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NO	63	9.6	63	9.6
YES	591	90.4	654	100.0

Frequency Missing = 7

EVER ISSUED C-II RX

RXISSUX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NO	62	9.6	62	9.6
YES	585	90.4	647	100.0

Frequency Missing = 14

PRACTICED IN RI PRIOR TO 1979

RI1979X	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NO	355	54.6	355	54.6
YES	295	45.4	650	100.0

Frequency Missing = 11

AWARE OF DDC REVIEW

REVIEWX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NO	302	47.7	302	47.7
YES	331	52.3	633	100.0

Frequency Missing = 28

HAS SPECIALTY PRACTICE

SPECLTYX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NO	109	17.4	109	17.4
YES	519	82.6	628	100.0

Frequency Missing = 33

BOARD CERTIFIED

BORDCERX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NO	109	19.5	109	19.5
YES	450	80.5	559	100.0

Frequency Missing = 102

SEX CATEGORY

SEX1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
MALE	545	83.5	545	83.5
FEMALE	108	16.5	653	100.0

Frequency Missing = 8

AGE CATEGORY

AGE1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
UP TO 40	259	39.3	259	39.3
40 AND OVER	400	60.7	659	100.0

Frequency Missing = 2

PRACTICE TYPE

PRACTYPX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
SOLO	271	42.3	271	42.3
NON-SOLO PRACTIC	370	57.7	641	100.0

Frequency Missing = 20

NUMBER YEARS LICENSED

LICYEARX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
10 YEARS & UNDER	268	40.7	268	40.7
OVER 10 YEARS	390	59.3	658	100.0

Frequency Missing = 3

NUMBER OF C-II RX ISSUEDPER MONTH

RXNUMX	Frequency	Percent	Cumulative Frequency	Cumulative Percent
NO RX PER MONTH	143	22.4	143	22.4
ONE OR MORE RX P	495	77.6	638	100.0

Frequency Missing = 23

APPENDIX D

Multicollinearity Results

The SAS System

Model: MODEL1
Dependent Variable: FORMAFF1 C-II FORM AFFECTS PRESCRIBING

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	16	7.56545	0.47284	1.963	0.0144
Error	398	95.86588	0.24087		
C Total	414	103.43133			

Root MSE	0.49078	R-square	0.0731
Dep Mean	0.47229	Adj R-sq	0.0359
C.V.	103.91602		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	0.105550	0.16292041	0.648	0.5174
RIPRACX	1	0.208933	0.10915777	1.914	0.0563
RXISSUX	1	0.165671	0.11432768	1.449	0.1481
RI1979X	1	-0.228913	0.21594740	-1.060	0.2898
SEX1	1	-0.132718	0.18361069	-0.723	0.4702
AGE1	1	0.209511	0.18631449	1.124	0.2615
SPECLTYX	1	0.110903	0.07808857	1.420	0.1563
REVIEWX	1	-0.041174	0.04937178	-0.834	0.4048
RXNUMX	1	-0.192394	0.07268749	-2.647	0.0084
DEG1	1	0.158378	0.10215335	1.550	0.1218
PRACTYPX	1	-0.008209	0.07287930	-0.113	0.9104
LICYEARX	1	0.085262	0.08600025	0.991	0.3221
SEXAGE	1	-0.102879	0.15873126	-0.648	0.5173
DEGAGE	1	-0.287722	0.19828573	-1.451	0.1476
PRAC79	1	0.000666	0.10461084	0.006	0.9949
DEG79	1	0.202674	0.21102728	0.960	0.3374
SEXDEG	1	-0.022639	0.19647697	-0.115	0.9083

Variable	DF	Variable Label
INTERCEP	1	Intercept
RIPRACX	1	CURRENTLY PRACTICING IN RI
RXISSUX	1	EVER ISSUED C-II RX
RI1979X	1	PRACTICED IN RI PRIOR TO 1979
SEX1	1	SEX CATEGORY
AGE1	1	AGE CATEGORY
SPECLTYX	1	HAS SPECIALTY PRACTICE
REVIEWX	1	AWARE OF DDC REVIEW
RXNUMX	1	NUMBER OF C-II RX ISSUEDPER MONTH
DEG1	1	PRIMARY PROFESSIONAL DEGREE
PRACTYPX	1	PRACTICE TYPE
LICYEARX	1	NUMBER YEARS LICENSED
SEXAGE	1	
DEGAGE	1	
PRAC79	1	
DEG79	1	

Variable	DF	Variable Label
SEXDEG	1	

Collinearity Diagnostics

Number	Eigenvalue	Condition Number	Var Prop INTERCEP	Var Prop RIPRACX	Var Prop RXISSUX	Var Prop RI1979X	Var Prop SEX1
1	10.34643	1.00000	0.0002	0.0004	0.0004	0.0002	0.0001
2	2.33880	2.10329	0.0001	0.0001	0.0001	0.0009	0.0145
3	1.33425	2.78468	0.0006	0.0017	0.0018	0.0014	0.0040
4	0.73705	3.74668	0.0001	0.0001	0.0001	0.0000	0.0000
5	0.59157	4.18209	0.0001	0.0006	0.0001	0.0025	0.0168
6	0.48986	4.59578	0.0000	0.0000	0.0003	0.0025	0.0018
7	0.27475	6.13662	0.0012	0.0076	0.0095	0.0081	0.0017
8	0.24560	6.49048	0.0017	0.0065	0.0032	0.0071	0.0054
9	0.15563	8.15369	0.0038	0.0135	0.0024	0.0016	0.0002
10	0.11932	9.31209	0.0055	0.0255	0.0001	0.0073	0.0719
11	0.10620	9.87013	0.0031	0.0251	0.0008	0.0008	0.0815
12	0.08276	11.18121	0.0055	0.1059	0.0105	0.0369	0.0002
13	0.07162	12.01945	0.0000	0.0103	0.0166	0.0328	0.4846
14	0.04262	15.58040	0.0021	0.3753	0.5804	0.0023	0.0617
15	0.03800	16.50124	0.0018	0.0130	0.1815	0.0641	0.0846
16	0.01636	25.15072	0.9740	0.4127	0.1907	0.0092	0.1075
17	0.00919	33.55447	0.0003	0.0016	0.0015	0.8222	0.0637

Number	Var Prop AGE1	Var Prop SPECLTYX	Var Prop REVIEWX	Var Prop RXNUMX	Var Prop DEG1	Var Prop PRACTYPX	Var Prop LICYEARX
1	0.0002	0.0009	0.0023	0.0010	0.0005	0.0010	0.0010
2	0.0004	0.0001	0.0003	0.0002	0.0001	0.0028	0.0019
3	0.0006	0.0036	0.0072	0.0051	0.0009	0.0038	0.0022
4	0.0017	0.0001	0.0025	0.0001	0.0006	0.0604	0.0029
5	0.0005	0.0000	0.0246	0.0001	0.0010	0.0212	0.0016
6	0.0009	0.0034	0.6834	0.0003	0.0066	0.0155	0.0001
7	0.0007	0.0243	0.1587	0.0786	0.0495	0.0123	0.0417
8	0.0222	0.0248	0.0562	0.0000	0.0084	0.0374	0.0820
9	0.0005	0.1303	0.0148	0.3847	0.0000	0.0025	0.1290
10	0.0019	0.1336	0.0063	0.1314	0.0166	0.3355	0.0331
11	0.0385	0.0298	0.0018	0.0047	0.0333	0.2370	0.4062
12	0.0185	0.4035	0.0005	0.0505	0.0847	0.1982	0.0605
13	0.0248	0.0755	0.0097	0.0673	0.0022	0.0120	0.1803
14	0.0028	0.0249	0.0001	0.1939	0.0361	0.0075	0.0018
15	0.0580	0.1121	0.0092	0.0730	0.6819	0.0029	0.0378
16	0.0102	0.0325	0.0198	0.0085	0.0765	0.0267	0.0004
17	0.8176	0.0005	0.0026	0.0006	0.0009	0.0234	0.0174

Number	Var Prop SEXAGE	Var Prop DEGAGE	Var Prop PRAC79	Var Prop DEG79	Var Prop SEXDEG
1	0.0004	0.0002	0.0009	0.0002	0.0001
2	0.0229	0.0005	0.0029	0.0011	0.0143
3	0.1314	0.0007	0.0200	0.0023	0.0040
4	0.0403	0.0020	0.2225	0.0000	0.0000

Number	Var Prop SEXAGE	Var Prop DEGAGE	Var Prop PRAC79	Var Prop DEG79	Var Prop SEXDEG
5	0.4628	0.0000	0.0020	0.0049	0.0355
6	0.0019	0.0043	0.0017	0.0002	0.0000
7	0.0032	0.0151	0.0003	0.0059	0.0006
8	0.1851	0.0129	0.0000	0.0249	0.0070
9	0.0001	0.0136	0.0014	0.0157	0.0000
10	0.0432	0.0002	0.2594	0.0244	0.0610
11	0.0794	0.0122	0.2099	0.0098	0.0173
12	0.0012	0.0055	0.2109	0.0003	0.0002
13	0.0002	0.0008	0.0107	0.0128	0.4911
14	0.0001	0.0030	0.0125	0.0059	0.0728
15	0.0000	0.0719	0.0021	0.0678	0.1328
16	0.0002	0.0124	0.0212	0.0020	0.0880
17	0.0278	0.8447	0.0215	0.8220	0.0753

The SAS System

Model: MODEL1
Dependent Variable: THERPRE1 PREFER TO PRESCRIBE NON-C-II

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	16	4.06783	0.25424	1.080	0.3714
Error	478	112.53015	0.23542		
C Total	494	116.59798			

Root MSE	0.48520	R-square	0.0349
Dep Mean	0.37980	Adj R-sq	0.0026
C.V.	127.75204		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	0.552834	0.14407701	3.837	0.0001
RIPRACX	1	0.051689	0.09143191	0.565	0.5721
RXISSUX	1	-0.090838	0.10173271	-0.893	0.3724
RI1979X	1	-0.131222	0.17479017	-0.751	0.4532
SEX1	1	0.110330	0.14630034	0.754	0.4511
AGE1	1	0.167924	0.15517959	1.082	0.2797
SPECLTYX	1	0.017043	0.06679454	0.255	0.7987
REVIEWX	1	0.020344	0.04446442	0.458	0.6475
RXNUMX	1	-0.099561	0.06300870	-1.580	0.1147
DEG1	1	-0.082303	0.09026043	-0.912	0.3623
PRACTYPX	1	-0.051729	0.06602601	-0.783	0.4337
LICYEARX	1	-0.049020	0.07714833	-0.635	0.5255
SEXAGE	1	-0.036213	0.13580973	-0.267	0.7899
DEGAGE	1	-0.071505	0.16757733	-0.427	0.6698
PRAC79	1	-0.072242	0.09576892	-0.754	0.4510
DEG79	1	0.130436	0.17740783	0.735	0.4626
SEXDEG	1	-0.098237	0.16167370	-0.608	0.5437

Variable	DF	Variable Label
INTERCEP	1	Intercept
RIPRACX	1	CURRENTLY PRACTICING IN RI
RXISSUX	1	EVER ISSUED C-II RX
RI1979X	1	PRACTICED IN RI PRIOR TO 1979
SEX1	1	SEX CATEGORY
AGE1	1	AGE CATEGORY
SPECLTYX	1	HAS SPECIALTY PRACTICE
REVIEWX	1	AWARE OF DDC REVIEW
RXNUMX	1	NUMBER OF C-II RX ISSUEDPER MONTH
DEG1	1	PRIMARY PROFESSIONAL DEGREE
PRACTYPX	1	PRACTICE TYPE
LICYEARX	1	NUMBER YEARS LICENSED
SEXAGE	1	
DEGAGE	1	
PRAC79	1	
DEG79	1	

Variable	DF	Variable Label
SEXDEG	1	

Collinearity Diagnostics

Number	Eigenvalue	Condition Number	Var Prop INTERCEP	Var Prop RIPRACX	Var Prop RXISSUX	Var Prop RI1979X	Var Prop SEX1
1	10.24544	1.00000	0.0002	0.0005	0.0004	0.0002	0.0002
2	2.28714	2.11650	0.0001	0.0001	0.0001	0.0012	0.0174
3	1.41754	2.68843	0.0006	0.0021	0.0017	0.0017	0.0044
4	0.77509	3.63571	0.0001	0.0002	0.0002	0.0000	0.0000
5	0.53514	4.37554	0.0001	0.0005	0.0001	0.0024	0.0194
6	0.47688	4.63513	0.0000	0.0001	0.0002	0.0046	0.0055
7	0.31746	5.68097	0.0012	0.0084	0.0067	0.0088	0.0033
8	0.23992	6.53476	0.0014	0.0054	0.0050	0.0112	0.0115
9	0.17055	7.75058	0.0024	0.0097	0.0018	0.0025	0.0004
10	0.13473	8.72038	0.0051	0.0342	0.0000	0.0043	0.1197
11	0.10945	9.67530	0.0010	0.0116	0.0000	0.0014	0.1239
12	0.09211	10.54630	0.0053	0.1532	0.0176	0.0094	0.0767
13	0.08203	11.17573	0.0001	0.0059	0.0019	0.0784	0.2752
14	0.04674	14.80518	0.0062	0.4210	0.5187	0.0002	0.0714
15	0.04073	15.86033	0.0021	0.0085	0.1988	0.0711	0.1434
16	0.01750	24.19353	0.9576	0.3305	0.2457	0.0438	0.1091
17	0.01154	29.80064	0.0167	0.0080	0.0012	0.7588	0.0183

Number	Var Prop AGE1	Var Prop SPECLTYX	Var Prop REVIEWX	Var Prop RXNUMX	Var Prop DEG1	Var Prop PRACTYPX	Var Prop LICYEARX
1	0.0003	0.0010	0.0023	0.0011	0.0006	0.0010	0.0010
2	0.0006	0.0001	0.0002	0.0002	0.0001	0.0029	0.0022
3	0.0007	0.0036	0.0066	0.0047	0.0007	0.0068	0.0022
4	0.0013	0.0001	0.0064	0.0007	0.0006	0.0572	0.0023
5	0.0006	0.0007	0.0909	0.0001	0.0026	0.0139	0.0017
6	0.0020	0.0051	0.6128	0.0001	0.0074	0.0170	0.0000
7	0.0023	0.0208	0.1403	0.0500	0.0512	0.0073	0.0454
8	0.0258	0.0273	0.0910	0.0062	0.0053	0.0357	0.0870
9	0.0007	0.1947	0.0011	0.4006	0.0001	0.0090	0.0713
10	0.0001	0.1079	0.0159	0.1496	0.0134	0.2199	0.0222
11	0.0395	0.0767	0.0000	0.0021	0.0437	0.2194	0.4169
12	0.0002	0.3715	0.0010	0.1152	0.0618	0.1871	0.0060
13	0.0614	0.0002	0.0041	0.0293	0.0091	0.1623	0.2976
14	0.0048	0.0440	0.0002	0.1536	0.0442	0.0187	0.0029
15	0.0492	0.1201	0.0012	0.0781	0.6721	0.0034	0.0324
16	0.0011	0.0252	0.0256	0.0043	0.0832	0.0342	0.0004
17	0.8096	0.0011	0.0003	0.0041	0.0039	0.0042	0.0085

Number	Var Prop SEXAGE	Var Prop DEGAGE	Var Prop PRAC79	Var Prop DEG79	Var Prop SEXDEG
1	0.0005	0.0002	0.0010	0.0002	0.0002
2	0.0226	0.0006	0.0037	0.0013	0.0167
3	0.1183	0.0009	0.0132	0.0028	0.0055
4	0.0188	0.0015	0.2483	0.0000	0.0000

The SAS System

Number	Var Prop SEXAGE	Var Prop DEGAGE	Var Prop PRAC79	Var Prop DEG79	Var Prop SEXDEG
5	0.5040	0.0000	0.0023	0.0055	0.0404
6	0.0315	0.0060	0.0032	0.0014	0.0011
7	0.0006	0.0143	0.0006	0.0101	0.0005
8	0.1906	0.0171	0.0002	0.0267	0.0066
9	0.0026	0.0140	0.0013	0.0140	0.0005
10	0.0166	0.0011	0.1867	0.0325	0.1113
11	0.0642	0.0177	0.1635	0.0072	0.0320
12	0.0044	0.0025	0.1836	0.0057	0.0776
13	0.0054	0.0028	0.1360	0.0060	0.3036
14	0.0003	0.0034	0.0213	0.0050	0.0801
15	0.0000	0.0716	0.0037	0.0706	0.2041
16	0.0047	0.0009	0.0278	0.0203	0.0954
17	0.0149	0.8452	0.0036	0.7907	0.0242

APPENDIX E

Multivariate Logistic Regression Results

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION
FOR THE ENTIRE DATA SET

The LOGISTIC Procedure

Data Set: WORK.NEW_DAT
Response Variable: FORMAFF1 C-II FORM AFFECTS PRESCRIBING
Response Levels: 2
Number of Observations: 419
Link Function: Logit

Response Profile

Ordered Value	FORMAFF1	Count
1	AGREE	199
2	DISAGREE	220

WARNING: 242 observation(s) were deleted due to missing values for the response or explanatory variables.

Simple Statistics for Explanatory Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
RXNUMX	0.809069	0.393504	0	1.00000
RI1979X	0.427208	0.495264	0	1.00000
SEX1	0.152745	0.360171	0	1.00000
AGE1	0.572792	0.495264	0	1.00000
SPECLTYX	0.847255	0.360171	0	1.00000
REVIEWX	0.529833	0.499706	0	1.00000
DEG1	0.816229	0.387760	0	1.00000
PRACTYPX	0.594272	0.491619	0	1.00000
LICYEARX	0.565632	0.496266	0	1.00000

Criteria for Assessing Model Fit

Criterion	Intercept Only	Intercept and Covariates	Chi-Square for Covariates
AIC	581.804	576.269	.
SC	585.842	616.648	.
-2 LOG L	579.804	556.269	23.535 with 9 DF (p=0.0051)
Score	.	.	22.648 with 9 DF (p=0.0070)

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION
FOR THE ENTIRE DATA SET

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Standardized Estimate
INTERCPT	-0.2399	0.3961	0.3668	0.5448	
RXNUMX	-0.5169	0.2639	3.8384	0.0501	-0.112150
RI1979X	-0.1262	0.3193	0.1562	0.6927	-0.034460
SEX1	-0.8337	0.3144	7.0291	0.0080	-0.165541
AGE1	-0.2003	0.3372	0.3527	0.5526	-0.054681
SPECLTYX	0.5206	0.3351	2.4135	0.1203	0.103372
REVIEWX	-0.2560	0.2035	1.5828	0.2084	-0.070521
DEG1	0.4459	0.3087	2.0855	0.1487	0.095321
PRACTYPX	-0.00840	0.2175	0.0015	0.9692	-0.002278
LICYEARX	0.3127	0.3567	0.7688	0.3806	0.085568

Association of Predicted Probabilities and Observed Responses

Concordant = 60.7%	Somers' D = 0.245
Discordant = 36.2%	Gamma = 0.252
Tied = 3.1%	Tau-a = 0.122
(43780 pairs)	c = 0.622

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE
FOR THE ENTIRE DATA SET

The LOGISTIC Procedure

Data Set: WORK.NEW_DAT
Response Variable: THERPRE1 PREFER TO PRESCRIBE NON-C-II
Response Levels: 2
Number of Observations: 499
Link Function: Logit

Response Profile

Ordered Value	THERPRE1	Count
1	AGREE	191
2	DISAGREE	308

WARNING: 162 observation(s) were deleted due to missing values for the response or explanatory variables.

Simple Statistics for Explanatory Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
RI1979X	0.420842	0.494190	0	1.00000
SEX1	0.164329	0.370945	0	1.00000
AGE1	0.563126	0.496497	0	1.00000
SPECLTYX	0.825651	0.379790	0	1.00000
RXNUMX	0.805611	0.396127	0	1.00000
DEG1	0.789579	0.408017	0	1.00000
PRACTYPX	0.589178	0.492477	0	1.00000
LICYEARX	0.557114	0.497226	0	1.00000
REVIEWX	0.533066	0.499406	0	1.00000

Criteria for Assessing Model Fit

Criterion	Intercept Only	Intercept and Covariates	Chi-Square for Covariates
AIC	666.071	668.987	.
SC	670.284	711.113	.
-2 LOG L	664.071	648.987	15.084 with 9 DF (p=0.0887)
Score	.	.	15.095 with 9 DF (p=0.0884)

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE
FOR THE ENTIRE DATA SET

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Standardized Estimate
INTERCPT	0.3103	0.3450	0.8090	0.3684	.
RI1979X	-0.2570	0.3030	0.7198	0.3962	-0.070033
SEX1	0.1461	0.2683	0.2965	0.5861	0.029884
AGE1	0.4860	0.3175	2.3440	0.1258	0.133045
SPECLTYX	0.0586	0.2816	0.0433	0.8352	0.012269
RXNUMX	-0.5353	0.2334	5.2626	0.0218	-0.116916
DEG1	-0.3343	0.2644	1.5981	0.2062	-0.075192
PRACTYPX	-0.4172	0.2041	4.1794	0.0409	-0.113282
LICYEARX	-0.2656	0.3303	0.6467	0.4213	-0.072813
REVIEWX	0.0946	0.1894	0.2495	0.6175	0.026043

Association of Predicted Probabilities and Observed Responses

Concordant	= 59.3%	Somers' D	= 0.212
Discordant	= 38.1%	Gamma	= 0.217
Tied	= 2.6%	Tau-a	= 0.100
(58828 pairs)		c	= 0.606

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION
FOR THOSE IN PRACTICE BEFORE 1979

The LOGISTIC Procedure

Data Set: WORK.BEFORE79
Response Variable: FORMAFF1 C-II FORM AFFECTS PRESCRIBING
Response Levels: 2
Number of Observations: 194
Link Function: Logit

Response Profile

Ordered Value	FORMAFF1	Count
1	AGREE	97
2	DISAGREE	97

WARNING: 101 observation(s) were deleted due to missing values for the response or explanatory variables.

Simple Statistics for Explanatory Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
RXNUMX	0.829897	0.376695	0	1.00000
REVIEWX	0:592784	0.492587	0	1.00000
PRACTYPX	0.438144	0.497443	0	1.00000
RXISSUX	0.943299	0.231869	0	1.00000

Criteria for Assessing Model Fit

Criterion	Intercept Only	Intercept and Covariates	Chi-Square for Covariates
AIC	270.941	273.495	.
SC	274.209	289.835	.
-2 LOG L	268.941	263.495	5.446 with 4 DF (p=0.2445)
Score	.	.	5.319 with 4 DF (p=0.2561)

Analysis of Maximum Likelihood Estimates

Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Standardized Estimate
INTERCPT	-0.6887	0.7246	0.9033	0.3419	.
RXNUMX	-0.3699	0.4657	0.6309	0.4270	-0.076829
REVIEWX	-0.4487	0.2969	2.2838	0.1307	-0.121854
PRACTYPX	0.0543	0.2946	0.0339	0.8539	0.014882
RXISSUX	1.3089	0.8095	2.6142	0.1059	0.167328

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION
FOR THOSE IN PRACTICE BEFORE 1979

The LOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses

Concordant	= 49.2%	Somers' D	= 0.162
Discordant	= 33.1%	Gamma	= 0.197
Tied	= 17.7%	Tau-a	= 0.081
(9409 pairs)		c	= 0.581

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE
FOR THOSE IN PRACTICE BEFORE 1979

The LOGISTIC Procedure

Data Set: WORK.BEFORE79
Response Variable: THERPRE1 PREFER TO PRESCRIBE NON-C-II
Response Levels: 2
Number of Observations: 216
Link Function: Logit

Response Profile

Ordered Value	THERPRE1	Count
1	AGREE	81
2	DISAGREE	135

WARNING: 79 observation(s) were deleted due to missing values for the response or explanatory variables.

Simple Statistics for Explanatory Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
SPECLTYX	0.851852	0.356072	0	1.00000
DEG1	0.833333	0.373544	0	1.00000
PRACTYPX	0.402778	0.491596	0	1.00000
REVIEWX	0.592593	0.492493	0	1.00000
RXISSUX	0.935185	0.246771	0	1.00000

Criteria for Assessing Model Fit

Criterion	Intercept Only	Intercept and Covariates	Chi-Square for Covariates
AIC	287.795	288.174	.
SC	291.171	308.426	.
-2 LOG L	285.795	276.174	9.621 with 5 DF (p=0.0867)
Score	.	.	9.514 with 5 DF (p=0.0902)

Analysis of Maximum Likelihood Estimates

Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Standardized Estimate
INTERCPT	0.9578	0.7320	1.7120	0.1907	.
SPECLTYX	-0.0685	0.4288	0.0255	0.8731	-0.013440
DEG1	0.000708	0.4103	0.0000	0.9986	0.000146
PRACTYPX	-0.6066	0.3052	3.9508	0.0468	-0.164411
REVIEWX	-0.5184	0.2910	3.1732	0.0749	-0.140757
RXISSUX	-0.9430	0.5706	2.7307	0.0984	-0.128292

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE
FOR THOSE IN PRACTICE BEFORE 1979

The LOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses

Concordant = 54.7%	Somers' D = 0.253
Discordant = 29.4%	Gamma = 0.300
Tied = 15.9%	Tau-a = 0.119
(10935 pairs)	c = 0.626

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION
FOR THOSE IN PRACTICE AFTER 1979

The LOGISTIC Procedure

Data Set: WORK.AFTER79
Response Variable: FORMAFF1 C-II FORM AFFECTS PRESCRIBING
Response Levels: 2
Number of Observations: 244
Link Function: Logit

Response Profile

Ordered Value	FORMAFF1	Count
1	AGREE	112
2	DISAGREE	132

WARNING: 111 observation(s) were deleted due to missing values for the response or explanatory variables.

Simple Statistics for Explanatory Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
SEX1	0.237705	0.426552	0	1.00000
AGE1	0.282787	0.451279	0	1.00000
RXNUMX	0.790984	0.407442	0	1.00000
REVIEWX	0.483607	0.500758	0	1.00000
DEG1	0.782787	0.413196	0	1.00000
PRACTYPX	0.704918	0.457017	0	1.00000
LICYEARX	0.254098	0.436248	0	1.00000

Criteria for Assessing Model Fit

Criterion	Intercept Only	Intercept and Covariates	Chi-Square for Covariates
AIC	338.615	334.113	.
SC	342.112	362.091	.
-2 LOG L	336.615	318.113	18.501 with 7 DF (p=0.0099)
Score	.	.	17.892 with 7 DF (p=0.0125)

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS FORM AFFECTS DECISION
FOR THOSE IN PRACTICE AFTER 1979

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Standardized Estimate
INTERCPT	0.0207	0.4218	0.0024	0.9608	.
SEX1	-0.8632	0.3323	6.7491	0.0094	-0.203008
AGE1	-0.0114	0.3537	0.0010	0.9742	-0.002847
RXNUMX	-0.8234	0.3438	5.7377	0.0166	-0.184967
REVIEWX	-0.1321	0.2683	0.2424	0.6225	-0.036461
DEG1	0.6814	0.3429	3.9487	0.0469	0.155217
PRACTYPX	0.1468	0.3031	0.2347	0.6281	0.036994
LICYEARX	0.3469	0.3637	0.9100	0.3401	0.083438

Association of Predicted Probabilities and Observed Responses

Concordant = 62.5%	Somers' D = 0.290
Discordant = 33.5%	Gamma = 0.302
Tied = 4.0%	Tau-a = 0.145
(14784 pairs)	c = 0.645

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE
FOR THOSE IN PRACTICE AFTER 1979

The LOGISTIC Procedure

Data Set: WORK.AFTER79
Response Variable: THERPRE1 PREFER TO PRESCRIBE NON-C-II
Response Levels: 2
Number of Observations: 289
Link Function: Logit

Response Profile

Ordered Value	THERPRE1	Count
1	AGREE	112
2	DISAGREE	177

WARNING: 66 observation(s) were deleted due to missing values for the response or explanatory variables.

Simple Statistics for Explanatory Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
SEX1	0.238754	0.427062	0	1.00000
AGE1	0.266436	0.442862	0	1.00000
SPECLTYX	0.802768	0.398599	0	1.00000
DEG1	0.761246	0.427062	0	1.00000
PRACTYPX	0.723183	0.448201	0	1.00000
RXNUMX	0.778547	0.415945	0	1.00000
LICYEARX	0.245675	0.431233	0	1.00000
REVIEWX	0.487889	0.500720	0	1.00000

Criteria for Assessing Model Fit

Criterion	Intercept Only	Intercept and Covariates	Chi-Square for Covariates
AIC	387.894	387.797	.
SC	391.560	420.795	.
-2 LOG L	385.894	369.797	16.097 with 8 DF (p=0.0410)
Score	.	.	15.950 with 8 DF (p=0.0431)

FINAL THESIS MODEL
THE DEPENDENT VARIABLE IS THERAPEUTIC PREFERENCE
FOR THOSE IN PRACTICE AFTER 1979

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Standardized Estimate
INTERCPT	0.2394	0.4210	0.3235	0.5695	.
SEX1	0.0408	0.3049	0.0179	0.8936	0.009603
AGE1	0.5253	0.3389	2.4018	0.1212	0.128255
SPECLTYX	0.1037	0.3779	0.0753	0.7838	0.022788
DEG1	-0.5013	0.3559	1.9842	0.1589	-0.118025
PRACTYPX	-0.2068	0.2821	0.5375	0.4635	-0.051109
RXNUMX	-0.7879	0.2992	6.9361	0.0084	-0.180686
LICYEARX	-0.1636	0.3433	0.2271	0.6337	-0.038901
REVIEWX	0.4793	0.2515	3.6337	0.0566	0.132324

Association of Predicted Probabilities and Observed Responses

Concordant	= 62.4%	Somers' D	= 0.277
Discordant	= 34.7%	Gamma	= 0.285
Tied	= 2.8%	Tau-a	= 0.132
(19824 pairs)		c	= 0.639

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