

CRNA Prescribing Practices: The Washington State Experience

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One year after implementation of a 2005 Washington State law that granted Certified Registered Nurse Anesthetists (CRNAs) authority to prescribe schedule II through IV controlled substances, only 30% of CRNAs held prescriptive authority. The purpose of this study was to describe Washington State CRNA prescribing practices and workforce and practice characteristics.

A questionnaire was mailed in 2006 to CRNAs licensed in Washington with addresses in Washington, Oregon, and Idaho. A typical respondent was 51 years old, white, and equally likely to be male or female, with 19 years of experience. More than half (52.2%) of the CRNAs were employed by hospitals, and 22% were in solo practice. Forty-one percent of the sample had prescriptive authority; however, 11% had prescriptive authority without Drug Enforcement Administration

(DEA) registration. Respondents without prescriptive authority used the Nurse Practice Act provision to “select, order and administer” as the foundation for practice. Of CRNAs with prescriptive authority, 94.7% prescribed anesthetics, 60% prescribed nonsteroidal anti-inflammatory medications, and just 53.3% prescribed narcotic analgesics.

Professional and policy controversies about autonomous prescribing for CRNAs are discussed. Further research is needed to determine the factors that limit CRNA prescribing and the transition to a new scope of practice.

Keywords: Controlled substances, CRNA workforce, nurse anesthetists, prescribing practices, prescriptive authority.

A 2005 Washington State law completed Certified Registered Nurse Anesthetist (CRNA) prescriptive authority by adding schedule II through IV controlled substances to their fully autonomous scope of practice. In contrast, most other states do not authorize CRNA autonomous prescriptive authority. Prescriptive authority is based on state legislation that grants prescription writing as a part of CRNA scope of practice.

Adoption of changes in scope of practice among advanced practice nurses is often slow and uneven.¹ Many CRNAs choose not to prescribe medications despite the option to do so. For example, in December 2008, only 1 of 1,282 CRNAs in Louisiana had applied for prescriptive authority (P. Greiner, Louisiana State Board of Nursing, oral communication, December 2008). To date, no research was found on how CRNAs who, limited by law, adapt their practice to prescribing constraints, and then transition to a new scope of practice when the law changes. In addition, few studies have been published about the CRNA workforce.

There is little in the literature regarding CRNAs and prescriptive authority. No research about prescriptive authority for CRNAs was located in PubMed, CINAHL, the Cochrane Library, Clinical Evidence, the National Guideline Clearinghouse, and the American Association of Nurse Anesthetists (AANA) website. Three articles on CRNA prescribing were written by attorneys for the AANA

between 1988 and 1993.²⁻⁴ These articles addressed 2 questions.

The first question was whether CRNA practice involves prescribing rather than selecting and administering anesthetic agents during the perianesthesia period. According to a review of court cases and federal law, AANA attorneys concluded that an anesthetic agent administered in the perianesthesia period is dispensed, not prescribed. This is part of CRNA scope of practice and serves as the basis for CRNA practice with or without prescriptive privileges.

The second question addressed whether individual registration with the Drug Enforcement Administration (DEA) was required for a CRNA employed by or acting as an agent of an institution. Adopted in 1993, DEA regulations have allowed CRNAs to “dispense” controlled substances without obtaining an individual DEA registration. These rules define “dispense” as the administration or prescribing of a controlled substance. In states without CRNA prescriptive authority, CRNAs who are agents or employees of a DEA registrant are exempt from DEA registration. In states where CRNA practice includes prescriptive authority as the legal basis for administering anesthetic agents, DEA registration is required.

CRNA Prescriptive Authority

There is wide variability in prescriptive authority for

pharmacist consultant, Washington State Board of Pharmacy, written communication, January 2009).

Study Purpose

The purpose of this study was to describe Washington State CRNA prescribing practices and workforce and practice characteristics. A secondary purpose of the study was to analyze factors related to Washington State CRNAs' adoption of prescriptive authority for controlled substances II through IV.

Background of Prescriptive Authority in Washington State

Since 1973, CRNAs in Washington State have been authorized as independent advanced registered nurse practitioners (ARNPs). Beginning in 1979, ARNPs, including CRNAs, became eligible to apply for prescriptive authority for legend drugs (all prescribed medications) with the exception of controlled substances. Prescribing schedule V drugs was authorized by rule in 1982. As an alternative to prescriptive authority, a 1993 amendment to the nurse practice act codified CRNA practice that had occurred for decades. The amendment allowed CRNAs "subject to facility-specific protocols ... to select, order, or administer Schedule II through IV controlled substances being limited to those drugs that are to be directly administered to patients who require anesthesia for diagnostic, operative, obstetrical, or therapeutic procedures in a hospital, clinic, ambulatory surgical facility, or the office of a practitioner."⁹

A 2005 law authorized CRNAs to prescribe schedule II through IV controlled drugs.¹⁰ This completed fully autonomous practice for CRNAs in Washington. In December 2004, before passage of this law, 26% of CRNAs (157 of 601) had prescriptive authority (V. Zandell, Washington State Department of Health, written communication, December 2004). At the time of this study, approximately 1½ years after passage of the law, 30.5% of CRNAs (194 of 635) had prescriptive authority, an increase of 4.5% (T. Stair, Washington State Department of Health, written communication, December 2006).

Methods

This descriptive study used survey methodology. Investigators refined and expanded an earlier questionnaire of CRNAs to create the 55-item 2006 Washington State CRNA Questionnaire. The instrument included questions about a wide range of CRNA practices. Specific sections of the questionnaire were demographic data, characteristics of CRNA practice, prescriptive authority, and prescribing practices. Validity of the instrument occurred through a process based on consultation with leaders of the Washington Association of Nurse Anesthetists who were content and clinical experts, staff from the University of Washington Center for Health Workforce studies who were content experts, and evalu-

ation of results from earlier Washington State surveys.

After receiving institutional review board approval, the questionnaire was first mailed in late 2006 to CRNAs licensed in Washington with addresses in Washington, Oregon, and Idaho (n = 436). As a result of 3 mailings, a response rate of 65% was achieved. Analysis included descriptive statistics for all variables. Comparisons between those practicing inside and outside of Washington revealed only 1 significant difference. Respondents practicing in Washington, on average, billed fewer clinical hours compared with those who practiced outside of Washington: 28 hours for those in state and 38 for those out of state. Results are presented only for respondents who were both licensed and practicing in Washington State (n = 203).

Results

- *Demographic Characteristics.* A typical respondent was 51 years of age, white, and equally likely to be male or female. Only 6% (n = 12) were from communities of color. Approximately 50% of the sample (n = 97) responded that they were educated before 1985, and half of the sample (n = 104) reported they had plans to retire within 10 years. Demographic characteristics of the sample of 203 CRNAs are detailed in Table 1.

- *Practice Setting Characteristics.* Most respondents, 65.7% (n = 132), practiced in urban settings, whereas 17.4% (n = 35) practiced in rural areas and 16.9% (n = 34) practiced in both rural and urban settings. Slightly more than one-third of the CRNAs (34.3%) practiced full time or part time in rural areas. Respondents often worked in multiple practice settings. Approximately three-fourths (76.8%, n = 156) were in a hospital operating room; 42.4% (n = 86), in a hospital obstetrical unit; and 41.9% (n = 85), in an ambulatory surgical center. Other practice settings included dental offices, pain centers, and specialty ambulatory clinics.

Respondents were asked to report all of their practice arrangements. More than half (52.2%, n = 106) of the CRNAs were employees of a hospital, 13.3% (n = 27) were in a group practice with CRNA colleagues, and 12.3% (n = 25) were in a group practice with anesthesiologists. Solo practices were reported by 22.6% (n = 46), while 28.1% (n = 57) had "other" arrangements.

Respondents were highly experienced, with an average of 19 years as a CRNA (range, less than 1 year to 45 years). Half (n = 105) had practiced 20 or more years, and only 12.5% (n = 25) had practiced 5 or fewer years. Three-fourths of the CRNAs (75.5%, n = 162) worked full time, defined as 35 or more hours per week, and 40.8% (n = 78) reported 20 or more cases per week. Most respondents had some type of hospital privileges (87.6%, n = 177), and 57.1% (n = 116) took call.

The CRNAs were asked to indicate their 2005 CRNA-related gross income. The average salary for CRNAs working full time was \$157,470. The average hourly wage

Demographic	Number	Percent
Gender		
Male	105	52
Female	97	48
Initial CRNA education		
Certificate	70	34.7
Baccalaureate program	31	15.3
Master's degree	112	55.4
On-the-job training/other	8	4
Highest educational attainment		
Associate degree	7	3.5
Diploma	16	8
Baccalaureate degree	43	21.4
Master's degree	134	66.7
Doctorate	1	< 0.01
Age, y		
Range	28-75	
Average	51	
Quartile 1: ages 28-45	48	
Quartile 2: ages 46-52	56	
Quartile 3: ages 53-57	53	
Quartile 4: ages 58-75	43	

Table 1. Demographic Profile of the Sample

Some data do not total to 203 because of unanswered questions or duplicate responses.

CRNA indicates Certified Registered Nurse Anesthetist.

was \$69. Of the CRNAs, 53.7% (n = 109) were salaried. Billing mechanisms for CRNA services included the following: 26.6% (n = 54) billed by the hour, 19.7% (n = 40) billed by the unit, 10.3% billed by the case; and another 11.3% (n = 23) reported some other type of billing.

- **Prescriptive Authority.** Respondents were asked if they were aware that Washington law changed in 2005 to allow CRNAs with prescriptive authority to prescribe schedule II through IV medications. Thirteen percent of the respondents (n = 27) were not aware of the change in law. Only 30% of the sample (n = 60) had both prescriptive authority and DEA registration, which is required to prescribe controlled substances. Another 11% (n = 22) had prescriptive authority but no DEA registration and could not prescribe controlled substances.

Almost two-thirds (61%, n = 120) of the CRNAs chose not to obtain prescriptive authority. These respondents were asked to explain their reason or reasons for not obtaining prescriptive authority (Table 2). The most frequently reported reason was that the Nurse Practice Act provision to “select, order and administer medications” provided the necessary support for their practice (44.4%, n = 52). Approximately one-third (35%, n = 41) noted that they did not want to prescribe medications. Eleven percent (n = 12) relied on other providers to write pre-

Reason	Number	Percent
Use the “select, order and administer” provision of the Nurse Practice Act	52	44.4
Do not want to prescribe medications	41	35.0
Other	29	24.8
MD writes all my prescriptions	11	9.5
In process of meeting requirements for prescriptive authority	2	1.7
In process of applying for prescriptive authority	1	0.9
CRNA or other ARNP writes all my prescriptions	1	0.9

Table 2. Reasons for No Prescriptive Authority

Respondents were asked to check all that apply so cumulative percentage is >100%.

CRNA indicates Certified Registered Nurse Anesthetist; ARNP, advanced registered nurse practitioner.

scriptions for their patients. Several of the respondents who chose “other reasons” noted they had “no need” for prescriptive authority in their practice.

Study participants were then asked: “How much do you need prescriptive authority for Schedule II-IV drugs in your clinical practice?” While most anesthetics are not controlled substances, most adjuvant medications are. The majority (52.5%, n = 106) who responded to the question indicated they had “no need” to prescribe controlled substances. Another 22.8% (n = 48) responded that they had very little need. In contrast, 8.9% (n = 18) had some or a moderate amount of need, and only 5.4% (n = 11) reported a great deal of need to prescribe schedule II through IV controlled substances. Another 10.4% (n = 21) were uncertain.

This survey also provided an opportunity to describe the medications prescribed by those CRNAs who had prescriptive authority (Table 3). Nearly all of the respondents (94.7%, n = 71) prescribed anesthetics, 60% (n = 45) prescribed nonsteroidal anti-inflammatory drugs (NSAIDs), and 53.3% (n = 40) prescribed narcotic analgesics.

Those CRNAs without prescriptive authority provide anesthesia under the Nurse Practice Act provision to select, order, and administer anesthesia under facility protocols. Two-thirds (65.3%, n = 128) reported practicing under facility protocols, and nearly one-fourth (23%, n = 45) did not know whether they had facility protocols. One-third (n = 57) of the respondents considered the potential for malpractice liability as a compelling reason to continue with facility protocols rather than using independent prescriptive authority.

Some of the respondents (11.2%, n = 19) experienced institutional barriers that prevented them from providing anesthesia and analgesia care using prescriptive authority

Medication class ^a	Number	Percent
Anesthetics	71	94.7
NSAIDs (eg, ibuprofen or naproxen)	45	60.0
Narcotic analgesics (eg, Vicodin or Percocet)	40	53.3
Benzodiazepines (eg, Xanax or Dalmane)	33	44.0
Hypnotics (eg, Ambien or Lunesta)	20	26.7
Non-narcotic analgesics (eg, Ultram or Fioricet)	18	24.0
Muscle relaxants (eg, Robaxin or Soma)	15	20.0
Other	8	8.1
Neurologics (eg, Neurontin)	4	5.3
Tricyclic antidepressants (eg, amitriptyline)	3	4.0

Table 3. Types of Medications Typically Prescribed

NSAIDs indicate nonsteroidal anti-inflammatory drugs.

^a Generic names for brands listed are as follows: Vicodin, hydrocodone-acetaminophen; Percocet, oxycodone-acetaminophen; Xanax, alprazolam; Dalmane, flurazepam; Ambien, zolpidem; Lunesta, eszopiclone; Ultram, tramadol; Fioricet, butalbital-acetaminophen-caffeine; Robaxin, methocarbamol; Soma, carisoprodol; and Neurontin, gabapentin.

for scheduled drugs. These included hospital bylaws and malpractice insurance that did not cover CRNA prescribing. The survey also asked whether full prescriptive authority had changed the participants' practices; only 8% (n = 14) responded that it had. Benefits included enhanced independence and increased ability to meet the needs of their patients related to pain management.

Participants were asked in what ways they expected full prescriptive authority to change their future practice. Of the 120 who responded to the question, 65% (n = 78) anticipated no effect on their practice and 13.3% (n = 16) were uncertain. The CRNAs (12.7%, n = 26) who expected change envisioned benefits such as a pain management practice, independent practice, enhanced flexibility, prescribing when the surgeon was unavailable, and improvements in patient care and career mobility.

Discussion

This study contributes rich data that enhances our understanding of Washington State CRNA demographics, practice characteristics, and prescriptive authority. The analysis of CRNA prescribing (as distinct from “select, order and administer”) is believed to be the first of its kind published about prescribing practices of CRNAs.

- *Workforce and Practice Characteristics.* The typical Washington State CRNA who responded to this survey was age 51 years, had an average of 19 years of experience, was employed by a hospital, took call, and performed 20 or more cases a week. More than 25% of responding CRNAs in Washington State reported a solo

practice arrangement. In the state of Washington, CRNAs make a substantial contribution to access to care, particularly as 34% work full time or part time in rural areas. Half of the respondents (n = 104) indicated they planned to retire in the next 10 years. The 1 CRNA program in Washington enrolls 8 students per year, with the potential for 80 graduates in the next 10 years.¹¹ Careful monitoring of retirements is needed to evaluate whether current recruitment and retention continue to provide access to anesthesia care by CRNAs.

- *Prescribing Practices.* Most CRNAs were aware of the new option for full prescriptive authority with schedule II through IV medications. However, only 30% took advantage of this option and obtained prescriptive authority and a DEA number. Most respondents without prescriptive authority considered the Nurse Practice Act provision to “select, order and administer” as the foundation for their practice. In addition, respondents who “do not want to prescribe medications” seem to perceive that their current practice does not involve “prescribing.” These data are consistent with the finding that three-fourths of the CRNAs perceived “no need” for prescriptive authority.

Study findings contribute new knowledge regarding the classes of medications *prescribed* by CRNAs. As expected, almost all of the respondents with prescriptive authority prescribed anesthetics. More than half of the respondents prescribed NSAIDs and narcotic analgesics. The fact that NSAIDs were prescribed slightly more often than narcotic analgesics may be attributable to a lack of DEA registration among some respondents. Alternately, NSAIDs may be a preferred drug category or the most appropriate medication for specific types of pain management. Benzodiazepines were prescribed more commonly than nonnarcotic analgesics and hypnotics. The infrequent prescribing of neurologic agents or tricyclic antidepressants, often used for chronic pain, suggests that few CRNAs may be involved in this area of practice.

- *Professional and Policy Issues in CRNA Prescribing.* Study findings about CRNA prescribing provide a basis from which to address a sensitive and potentially controversial professional issue for some CRNAs. Some CRNAs may not view autonomous prescribing as a benefit with the potential of strengthening the profession's control over itself and professional autonomy. This attitude is similar to the perspective of other advanced practice nurses who were comfortable with the status quo before legal changes.¹

Study results suggest that many CRNAs perceive “select, order and administer” as sufficient for practice. This may result from historical challenges by anesthesiologists and restraints on CRNA practice. In many states CRNA prescriptive authority requires supervision, collaboration, or a written agreement with a physician. Possibly, CRNAs are reluctant to promote prescribing legislation

because of a concern that physicians might respond by withdrawing from collaborative arrangements.

Any CRNAs interested in autonomous prescribing could consider a variety of strategies for change, particularly collaboration with other advanced practice nurses. One example is the Washington State experience, where CRNAs obtained autonomous prescribing for controlled substances as part of a law written to benefit all advanced practice nurses.

Changing the legal environment is only one step in the process of fully autonomous prescribing. Internal barriers to adoption of autonomous prescriptive authority also need to be overcome.¹ “It is not just in action but in thought that we create autonomy for ourselves.”¹² Despite the option for fully autonomous prescribing, only a small percentage of Washington State CRNAs made the transition to this new scope of practice. One contributing factor could be that some Washington State facilities have policies that are more restrictive than the law. Another contributing factor may be that CRNAs with many years of experience may be less motivated to adopt a new scope of practice that included prescribing schedule II through IV controlled substances. Analysis of CRNA socialization and education could contribute to a deeper understanding about perspectives on CRNA autonomous practice.

• *Implications for Further Research.* Research is needed to determine what barriers limit CRNAs from practicing to the full scope of their ability. Studies might seek to understand the experiences of CRNAs who are subject to Nurse Practice Act language to “select, order and administer.” In addition, information about physician supervision of CRNA prescribing could provide the basis for recommendations for change in professional and public policy. Any time transition to a new scope of practice occurs, it is key to follow the implications of the changes.

Conclusion

The transition of CRNAs to a new scope of practice will take time. A study of Washington State nurse practitioners’ (NPs’) transition to fully autonomous prescribing identified that “NPs had to adapt their practice and use creative strategies...for providing their patients with controlled substances. This normalization process contributed to the use of old ways despite a new law.”^{1(p190)} The phenomenon of transition is complex and often invisible. As CRNAs face ongoing challenges to independent

practice, a paradigm shift may be necessary for them to fully embrace autonomous prescriptive authority.

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