



KENTUCKY BOARD OF NURSING
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ADVISORY OPINION STATEMENT

**Roles of Nurses in the Administration of Subanesthetic Dosing Ketamine
for Psychiatric Disorders and Chronic Pain**

The Kentucky Board of Nursing is authorized by Kentucky Revised Statutes (KRS) Chapter 314 to regulate nurses, nursing education and practice, promulgate regulations and to issue advisory opinions on nursing practice, in order to assure that safe and effective nursing care is provided by nurses to the citizens of the Commonwealth.

The Kentucky Board of Nursing issues advisory opinions as to what constitutes safe nursing practice. As such, an opinion is not a regulation of the Board and does not have the force and effect of law. It is issued as a guideline to licensees who wish to engage in safe nursing practice, and to facilitate the delivery of safe, effective nursing care to the public.

Opinion: Role of Nurses in the Administration of Subanesthetic Dosing Ketamine for Psychiatric Disorders and Chronic Pain

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Accountability and Responsibility of Nurses

In accordance with KRS 314.021(2), nurses are responsible and accountable for making decisions that are based upon the individuals' educational preparation and current clinical competence in nursing and requires licensees to practice nursing with reasonable skill and safety. Nursing practice should be consistent with the *Kentucky Nursing Laws*, established standards of practice, and be evidence based.

Rationale for Advisory Opinion

The Board of Nursing received several inquiries requesting information on the subanesthetic dosing of Ketamine infusions. In recent years, there has been a growing interest in the use of Ketamine for a variety of conditions, including pain, depression and in palliative care. Certified Registered Nurse Anesthetists (CRNAs) are educated and trained to administer Ketamine for the purpose of sedation and general anesthesia, as well as subanesthetic dosing Ketamine infusion therapy for psychiatric disorders and chronic pain management.

This advisory opinion addresses:

- 1) The Advanced Practice Registered Nurse (APRN) who prescribes and administers subanesthetic dose Ketamine for chronic pain and psychiatric disorders.
- 2) The collaborative approach to the prescribing and administration of subanesthetic dose Ketamine between the Psychiatric Mental Health Nurse Practitioner (PMHNP) and the CRNA for psychiatric disorders.
- 3) The role of the registered nurse (RN) who administers Ketamine in the acute and non-acute care settings.
- 4) This advisory opinion CANNOT be construed as approval for the RN (non-CRNA) to administer an anesthetic agent for the purposes of anesthesia.

Educational Preparation and Clinical Competency

Pursuant to KRS 314.021(2) all nurses are held responsible and accountable for making decisions that are based upon the individual's educational preparation and current clinical competence. One method for demonstrating educational preparation and clinical competence is through obtaining relevant certifications within a specialty area. Another method would be to create a portfolio of trainings, workshops, and continuing education that demonstrates the acquisition of additional knowledge and clinical competency in the specialty area.

Advisory Opinion

It is within the scope of practice of the APRN, CRNA, to order and administer subanesthetic dose Ketamine for psychiatric disorders and chronic pain.

It is within the scope of practice of the APRN, PMHNP, to prescribe Ketamine in subanesthetic doses for psychiatric disorders. The independent administration of subanesthetic doses for psychiatric disorders is within the scope of practice for the APRN, PMHNP, provided they are educationally prepared and clinically competent.

It is within the scope of practice of the APRN, in the relevant role and population foci, to prescribe Ketamine in subanesthetic doses for chronic pain. The independent administration of subanesthetic doses for chronic pain is within the scope of practice for the APRN provided they are educationally prepared and clinically competent.

It is within the scope of the RN who is educationally prepared and currently clinically competent to administer subanesthetic dose Ketamine, and medications for procedural sedation and analgesia. It is NOT within the scope of registered nursing practice to administer medications for the purpose of anesthesia.

It is NOT within the scope of a licensed practical nursing practice to administer medications for the purpose of anesthesia or to administer subanesthetic dose Ketamine.

Introduction

Ketamine is Federal Drug Administration (FDA) approved as an intravenous anesthetic agent administered by anesthesia providers and has been used for decades. Ketamine has been incorporated into the treatment and is being used "off label" to treat depression, chronic pain, and PTSD. Ketamine is not considered first-line therapy for psychiatric or chronic pain management; however, it may be considered after failure of standard treatment. In 2019, the FDA approved S-enantiomer of Ketamine, Esketamine for treatment resistant depression. The drug is administered as a nasal spray. Esketamine can only be administered under the supervision of a healthcare provider at a treatment center that is certified in the Spravato Risk Evaluation and Mitigation Strategy (REMS) Program. The FDA does not recommend use of compounded Ketamine nasal formulations at home and issued a statement regarding this in February 2022 (FDA Alerts Health Care Professionals of Potential Risks Associated with Compounded Ketamine Nasal Spray, 2022, retrieved at <https://www.fda.gov/drugs/human-drug-compounding/fda-alerts-health-care-professionals-potential-risks-associated-compounded-ketamine-nasal-spray>).

Ketamine is a scheduled III controlled substance regulated by the Drug Enforcement Agency (DEA) requiring a DEA registration for prescribing. APRNs prescribing Ketamine are required to practice according to their scope of practice and prescriptive authority in accordance with KRS 314.011, and 201 KAR 20:057.

General Requirements

The setting in which Ketamine is administered should have the equipment and personnel to safely administer the medication and monitor the patient. The administration and management of adverse events should be clearly delineated in facility policies and procedures. Appropriate patient screening should be conducted, and caution taken when administering subanesthetic dose Ketamine infusions due to the potential risk of abuse, addiction, or complications of long-term use. Proper drug disposal measures are important in the prevention of subanesthetic dose Ketamine from being obtained illicitly. It is recommended that a collaborative approach regarding assessment, diagnosis, referral, and treatment plans between psychiatric clinicians or pain specialists and Ketamine infusion providers occur.

Scope of Practice

Advanced Practice Registered Nurse (APRN)

1. The comprehensive APRN scope of practice is determined by their respective national certifications. The prescribing and administration of Ketamine is within the scope of practice for the APRN, CRNA. The prescribing of Ketamine in a subanesthetic dose for psychiatric disorders is within the scope of practice for the APRN, PMHNP. The independent administration of subanesthetic doses is within the scope of practice for the APRN, PMHNP provided they are educationally prepared and clinically competent.
2. The prescribing of Ketamine in subanesthetic dose for chronic pain may be in the scope of practice for the APRN, in the relevant role and population foci and the independent administration may be within the scope of practice for the APRN, in the relevant role and population foci, if educationally prepared and clinically competent in subanesthetic dosing of Ketamine.
3. Prescribing of subanesthetic dose Ketamine should include an interdisciplinary team as appropriate and be patient-centered.
4. Close collaboration regarding assessment, diagnosis, referral, and treatment between psychiatric clinicians or pain specialist and Ketamine providers is highly recommended.
5. Informed consent should be obtained before treatment and include a clear description of the potential risks, benefits, and alternative treatments.
6. Coordination/Communication regarding screening, management, monitoring, management of adverse reactions, and follow-up throughout the treatment course.
7. Patients should be engaged as part of the care team in shared decision making.
8. Efforts should be made to minimize the potential for adverse events through consideration of premedication, individualized patient therapy, and appropriate monitoring during the peri-infusion period.
9. Consider basing dosage on ideal body weight when body mass index exceeds 30. Frequency and length of treatment should be individualized for each patient as determined by the interdisciplinary team.
10. It is recommended that those who are administering or who supervise the administration of subanesthetic Ketamine be ACLS certified and, if applicable, PALS certified.

Certified Registered Nurse Anesthetist (CRNA)

1. The CRNA is educated and qualified to administer Ketamine for sedation and general anesthesia as well as subanesthetic dosing Ketamine for psychiatric disorders and chronic pain management. It is recommended that CRNAs involved in this practice demonstrate interdisciplinary relationships with psychiatric and pain specialists (as applicable) when incorporating administration of subanesthetic dose Ketamine for chronic pain or psychiatric disorders into their practice.
2. When prescribing and/or administering subanesthetic dose Ketamine for the treatment of psychiatric disorders, it is recommended that CRNAs collaborate with providers who focus on

diagnosing and treating psychiatric disorders to receive referral, psychiatric history, medication list, and the appropriate recent psychiatric diagnosis to provide subanesthetic Ketamine treatment. The CRNA's role may include but is not limited to reviewing healthcare records; obtaining a health history; conducting a pre-assessment and evaluation; ordering and evaluating diagnostic tests; ordering or prescribing medications; initiating, maintaining, dose titration monitoring the patient; and completion of treatment session; conducting post-assessment and evaluation, and managing adverse events or complications.

General Recommendations for the Safe Administration of Subanesthetic Dose Ketamine Infusions

1. Intravenous Ketamine subanesthetic dosing may be delivered in the inpatient, outpatient, emergency department, and office-based setting provided that the administration location has the equipment and personnel to safely administer the medication.
 - a. Facilities providing subanesthetic dosing Ketamine infusions should maintain written policies and procedures; including policies/protocols in the event of an adverse reaction.
 - b. Administration of subanesthetic dose Ketamine should occur by or under the direct supervision of a qualified healthcare provider pursuant to KRS 314.011 (6)* who has adequate training and experience to provide this care.
 - c. The facility should have emergency equipment/medication available to stabilize the patient should an adverse event occur.
 - d. Policies and procedures should be established by the organization addressing the procedures for obtaining, storing, wasting, and disposing of Ketamine (abuse/diversion protection) – This policy should adhere to all applicable state and federal laws.
 - e. Discharge criteria should also be clearly delineated in policy (i.e., how long patients should be monitored after infusions before releasing them from care).
2. An ACLS certified provider is available in the facility throughout the infusion and until discharge – all staff will have current BLS certification.
3. Continuous monitoring includes electrocardiogram (for patients at increased risk of cardiovascular events or with higher dosing), oxygen saturation, blood pressure, respiratory rate, temperature (when appropriate) and level of sedation immediately prior to, during and following the infusion until the patient returns to pre-infusion baseline and meets discharge criteria.
4. Manage any adverse outcomes while patient is receiving the infusion, including advanced level of care or consulting with psychiatric and pain specialists as applicable.
5. APRN prescribing subanesthetic dose Ketamine infusion – those specializing in chronic pain management or psychiatric disorders
 - a. Evaluate, diagnose, and develop patient treatment plan for subanesthetic dose Ketamine infusion as recommended in the literature.
 - b. Should be readily available for consultation with administering for adverse events specifically related to patients underlying disorder (e.g., psychotic, or manic thoughts during treatment, emergence or worsening of suicidal thoughts, or emotional distress) and other potential adverse outcomes related to the infusion. Collaborative relationship with psychiatric experts in management of these events during infusions and follow-up strategies are highly recommended.

Register Nurse (RN)

The RN's role in the administration of subanesthetic dose Ketamine:

1. Understand the basic pharmacology of subanesthetic dose Ketamine, including proper dosing, proper patient selection (including identifying patients requiring a higher level of monitoring), and proper patient monitoring (including identifying and treating adverse effects that include hypoxia, apnea, hypotension, dysphoria, and dysrhythmia).
2. Demonstrates clinical competency to administer and monitor the patient receiving subanesthetic dose Ketamine.

3. The RN works under the direct supervision of a qualified healthcare provider as defined in KRS 314.011(6).

Licensed Practical Nurse (LPN)

It is not within the scope of practice for the (LPN) to administer subanesthetic dose Ketamine.

The following grid provides information on the use of Ketamine in the treatment of chronic pain and psychiatric disorders as outlined in the AOS, and the scope of practice of the nurse who is educationally prepared and clinically competent to provide care as described above.

Ketamine	LPN	RN	APRN
Subanesthetic Dosing of Ketamine for Chronic Pain		May administer only with a Qualified Healthcare Provider* order and under the direct supervision of a Qualified Healthcare Provider*	CRNA may order and administer for chronic pain. If Prescribing, CRNA must meet requirements** APRN (in the relevant role and population foci) may prescribe and if educationally prepared and clinically competent may independently administer for chronic pain.
Subanesthetic dosing of Ketamine in psychiatric disorders		May administer only with a Qualified Healthcare Provider* order and under the direct supervision of a Qualified Healthcare Provider*	CRNA may order and administer for psychiatric disorders. If Prescribing, CRNA must meet requirements** and it is recommended to collaborate with providers who focus on diagnosing and treating psychiatric disorders. PMHNP may prescribe and if educationally prepared and clinically competent may independently administer for psychiatric disorders.
Esketamine for psychiatric disorders under the Risk Evaluation and Mitigation Strategies (REMS) protocol		May administer only with a Qualified Healthcare Provider* Order and Under the Direct Supervision of a Qualified Healthcare Provider*	APRN (in the relevant role and population foci) may prescribe and administer per REMS protocol

*Qualified Healthcare Providers include MD, PA, APRN, and/or Dentist KRS 314.011 (6)

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** Pursuant to KRS 314.042(12) CRNAs are not required to enter into a collaborative agreement with a physician ... in order to deliver anesthesia care. CRNA's should refer to KRS 312.042(11) for requirements to obtain prescriptive authority to prescribe controlled substances outside of the delivery of anesthesia.

Determining Scope of Practice

KRS 314.021(2) holds all nurses individually responsible and accountable for the individual's acts based upon the nurse's education and experience. Each nurse must exercise professional and prudent judgment in determining whether the performance of a given act is within the scope of practice for which the nurse is both licensed and clinically competent to perform. In addition to this advisory opinion statement, the Kentucky Board of Nursing issued Advisory Opinion Statement #41 RN/LPN Scope of Practice Determination Guidelines which contains the KBN Decision-Making Model for Determining Scope of Practice for RNs/LPNs and published the APRN Scope of Practice Decision Making Model providing guidance to nurses in determining whether a selected act is within an individual nurse's scope of practice now or in the future. A copy of the KBN Decision-Making Model for Determining Scope of Practice for RNs/LPNs may be downloaded from the Board's website and a copy of the APRN guidelines may be downloaded from the Board's website at www.kbn.ky.gov.

1. https://www.commerce.alaska.gov/web/portals/5/pub/NUR_AO_LOW_DOSE_KETAMINE_INFUSIONS_2021.pdf
2. <https://www.apna.org/wp-content/uploads/2021/03/APNA-AANA-Joint-Statement-on-Ketamine-Scope-of-Practice.pdf>
3. <https://doi.org/10.4037/ccn2020419>
4. https://www.azbn.gov/sites/default/files/2021-11/AO-Ketamine-revised-7-2021_1.pdf
5. <https://www.llr.sc.gov/nurse/pdf/Low%20Dose%20Ketamine%20Joint%20Advisory%20Opinion%20Approved.pdf>
6. https://www.floridahealth.gov/licensing-and-regulation/declaratory/_documents/nursing/DOH-21-0486-DS-1701-662455-1.pdf
7. <https://www.health.pa.gov/topics/Documents/Opioids/Ketamine%20Guidelines.pdf>
8. https://www.bon.texas.gov/practice_bon_position_statements_content.asp
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15. [https://www.aana.com/docs/default-source/practice-aana-com-web-documents-\(all\)/professional-practice-manual/ketamine-infusion-therapy-for-psychiatric-disorders-and-chronic-pain-management.pdf?sfvrsn=950049b1_14](https://www.aana.com/docs/default-source/practice-aana-com-web-documents-(all)/professional-practice-manual/ketamine-infusion-therapy-for-psychiatric-disorders-and-chronic-pain-management.pdf?sfvrsn=950049b1_14)
16. <https://www.spravatorems.com/>
17. <https://doi.org/10.4037/ccn2020419>
18. FDA Alerts Health Care Professionals of Potential Risks Associated with Compounded Ketamine Nasal Spray, 2022, retrieved at <https://www.fda.gov/drugs/human-drug-compounding/fda-alerts-health-care-professionals-potential-risks-associated-compounded-ketamine-nasal-spray>

Applicable Statutes From the Kentucky Nursing Laws

KRS 314.011(8) defines "advanced practice registered nursing practice" as:

"Advanced practice registered nursing" means the performance of additional acts by registered nurses who have gained advanced clinical knowledge and skills through an accredited education program that prepares the registered nurse for one (1) of the four (4) APRN roles; who are certified by the American Nurses' Association or other nationally established organizations or agencies recognized by the board to certify registered nurses for advanced practice registered nursing as a certified nurse practitioner, certified registered nurse anesthetist, certified nurse midwife, or clinical nurse specialist; and who certified in at least one (1) population focus. The additional acts shall, subject to approval of the board, include but not be limited to prescribing treatment, drugs, devices, and ordering diagnostic tests. Advanced practice registered nurses who engage in these additional acts shall be authorized to issue prescriptions for and dispense nonscheduled legend drugs as defined in KRS 217.905 and to issue prescriptions for but not to dispense Schedules II through V controlled substances as classified in KRS 218A.060, 218A.070, 218A.080, 218A.090, 218A.100, 218A.110, 218A.120, and 218A.130, under the conditions set forth in KRS 314.042 and regulations promulgated by the Kentucky Board of Nursing on or before August 15, 2006. ... (c) The performance of these additional acts shall be consistent with the certifying organization or agencies' scopes and standards of practice recognized by the board by administrative regulation; ...

.....*Nothing in this chapter shall be construed as requiring an advanced practice registered nurse designated by the board as a certified registered nurse anesthetist to obtain prescriptive authority pursuant to this chapter or any other provision of law in order to deliver anesthesia care. The performance*

of these additional acts shall be consistent with the certifying organization or agencies' scopes and standards of practice recognized by the board by administrative regulation The certified registered nurse anesthetist as noted in KRS 314.011 would need to obtain prescriptive authority (CAPA-NS) when independently ordering to administer either nonscheduled legend drugs or controlled substances outside delivering anesthesia care.

KRS 314.021(2) states:

All individuals licensed under provisions of this chapter shall be responsible and accountable for making decisions that are based upon the individuals' educational preparation and experience in nursing and shall practice nursing with reasonable skill and safety.

KRS 314.042 (12) states:

Nothing in this chapter shall be construed as requiring an advanced practice registered nurse designated by the board as a certified registered nurse anesthetist to enter into a collaborative agreement with a physician, pursuant to this chapter or any other provision of law, in order to deliver anesthesia care.