

ANKARA BILKENT CITY HOSPITAL

NON-OPERATING ROOM ANESTHESIA (NORA) GUIDELINE

Anesthesia and Sedation Outside the Operating Room and Intensive Care Unit

Institutional source document	HB.PR.010 - Procedure for Anesthesia Practice Outside the Operating Room and Intensive Care Unit
Source issue date	17 May 2021
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Source revision number	03
Guideline status	Institutional guidance for Ankara Bilkent City Hospital; local approval required before implementation

This guideline translates and restructures the institutional procedure into an English guideline format. Source-specific operational content has been retained where appropriate, while selected safety elements have been aligned with current anesthesia standards. Where the source contains potentially ambiguous or outdated drug-dose wording, this guideline defers to approved institutional medication protocols and specialist judgement rather than reproducing an unverified dose as a mandatory recommendation.

How to Use This Guideline

Scope. This guideline applies to anesthesia, procedural sedation, sedation-analgesia, deep sedation, regional anesthesia and general anesthesia delivered in designated locations outside operating rooms and intensive care units within Ankara Bilkent City Hospital. It includes adult and pediatric services where such care is provided.

Requirement language. “Must” indicates a minimum institutional safety requirement; “should” indicates a recommended practice that may require clinical adaptation; “may” indicates an option determined by the responsible anesthesiologist and procedure team.

Clinical judgement. The responsible anesthesiologist retains authority to change the anesthetic plan, monitoring intensity, recovery destination or timing of discharge according to the patient, procedure, location, staffing and available rescue capability.

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1. Purpose and Scope

Purpose. To provide a consistent institutional framework for safe, effective and appropriately monitored anesthesia and sedation outside the operating room and intensive care unit, including patient selection, pre-procedure evaluation, equipment, monitoring, medication principles, procedure-specific considerations, recovery and discharge.

Source scope. The underlying procedure specifically covers Ankara Bilkent City Hospital locations in which sedation, sedation-analgesia, deep sedation or general anesthesia are provided outside the operating room and ICU.

2. Guideline Basis and Key Safety Updates

Institutional basis. This guideline is derived from HB.PR.010, Revision 03 (19 December 2025). The original location list, workflow, sedation definitions, equipment requirements, specialty-specific sections, Modified Aldrete recovery concept and local forms have been preserved or mapped into appendices.

Evidence alignment. Selected safety wording has been aligned with the American Society of Anesthesiologists (ASA) standards for basic anesthetic monitoring, the ASA Statement on Nonoperating Room Anesthesia Services, preoperative fasting guidance and MRI anesthetic-care recommendations. These additions do not replace Turkish legislation, hospital policy or approved medication protocols.

- Capnography is incorporated as a standard expectation for moderate/deep sedation and general anesthesia when clinically applicable and technically feasible.

- Fasting is expressed by intake type rather than a universal six-hour rule: clear liquids up to 2 hours, breast milk 4 hours, infant formula/non-human milk/light meal 6 hours, and longer fasting (typically 8 hours or more) after fatty/fried foods or meat; aspiration-risk factors may require individualized management.
- Recovery discharge is based on clinical readiness and a Modified Aldrete score generally ≥ 9 (or an institutionally approved equivalent), rather than requiring a score of exactly 9.
- MRI care explicitly requires MRI-compatible equipment, remote visual/physiologic monitoring and an emergency plan for rapid patient removal from the scanner environment.
- Potentially ambiguous medication doses in the source procedure are not converted into mandatory dosing recommendations without institutional pharmacology verification.

3. Definitions and Sedation Continuum

Level	Responsiveness	Airway / Ventilation	Cardiovascular Function
Minimal sedation	Normal response to verbal stimulation	Unaffected	Unaffected
Moderate sedation / sedation-analgesia	Purposeful response to verbal or light tactile stimulation	No intervention usually required; spontaneous ventilation adequate	Usually maintained
Deep sedation	Purposeful response only after repeated or painful stimulation	Airway intervention may be required; spontaneous ventilation may be inadequate	Usually maintained
General anesthesia	Not arousable, even with painful stimulation	Airway intervention usually required; ventilation often controlled	May be impaired

Sedation is a continuum. Personnel administering sedation must be able to recognize progression to a deeper-than-intended level and provide rescue appropriate to that level.

ASA Physical Status

Class	Institutional description
ASA I	Healthy patient without systemic disease.
ASA II	Mild systemic disease without substantive functional limitation.
ASA III	Severe systemic disease with functional limitation.
ASA IV	Severe systemic disease that is a constant threat to life.
ASA V	Moribund patient not expected to survive without the procedure.
ASA VI	Declared brain-dead patient whose organs are being removed for donor purposes.
E suffix	Emergency procedure.

4. Governance and Responsibilities

- Hospital executive and clinical governance leadership
- Anesthesiology clinic administrative lead
- Specialist anesthesiologists
- Anesthesia technicians/technologists
- Nurses and healthcare personnel in the procedural unit
- Procedure-specific clinical teams

The anesthesiologist responsible for the case determines the anesthesia plan, need for additional monitoring, rescue resources, staffing, postoperative destination and whether the location is suitable for the planned depth of anesthesia.

5. Approved NORA Locations

Hospital / Service	Examples from the source procedure
General Hospital	Endoscopy, colonoscopy, ERCP, EUS, adult emergency red areas, psychiatry/ECT
Cardiovascular Hospital	Coronary angiography/interventional cardiology, bronchoscopy, interventional radiology
Neurology-Orthopedics Hospital	Interventional radiology
Children's Hospital	Hematology, endoscopy, colonoscopy, angiography, oncology,

	bone marrow transplantation, pediatric wards, chemotherapy/transfusion, MRI
Women's Hospital	Intervention room; neuraxial labor analgesia
Oncology Hospital	Endoscopy, colonoscopy, radiation oncology, nuclear medicine, pain unit
Other services	High-security forensic psychiatry ECT procedure room

6. Pre-procedure Assessment and Consent

1. Confirm indication, planned procedure, expected duration, position, access to the patient and anticipated pain/stimulation.
2. Review medical history, allergies, previous anesthesia complications, current medications, comorbidities, pregnancy status when relevant and previous airway difficulty.
3. Assign ASA physical status and document airway assessment.
4. Assess fasting and aspiration risk; consider reflux, delayed gastric emptying, bowel obstruction, emergency status, diabetes, GLP-1 therapy and other clinically relevant factors.
5. Review procedure-specific laboratory or imaging results only when clinically indicated; routine testing is not required solely because anesthesia is planned.
6. Obtain informed consent for the proposed anesthetic/sedation plan, including alternatives, potential conversion to deeper sedation/general anesthesia and foreseeable complications.
7. In emergency cases, evaluation should be focused but sufficient to identify immediate airway, hemodynamic, aspiration and medication risks.

Institutional form mapping: HD.RB.360 Anesthesia Patient Information and Consent Form and AH.FR.002 Pre-Anesthesia Patient Evaluation Form.

7. Fasting and Aspiration Risk

Intake	Suggested minimum fasting interval for elective anesthesia/sedation*
Clear liquids	2 hours
Breast milk	4 hours
Infant formula / non-human milk	6 hours
Light meal	6 hours
Fatty/fried food or meat	8 hours or longer

*These intervals apply to otherwise healthy elective patients and should be individualized when aspiration risk is increased. Urgent/emergency procedures must not be delayed solely to satisfy elective fasting intervals when the clinical need for intervention outweighs aspiration risk; the anesthetic technique should be adapted accordingly.

8. Minimum Environment, Equipment and Emergency Readiness

- Reliable oxygen supply with backup capacity appropriate to the location and procedure duration.
- Functional suction with appropriate catheters.
- Physiologic monitor capable of ECG, non-invasive blood pressure and pulse oximetry; capnography for moderate/deep sedation and general anesthesia when applicable.
- Anesthesia machine and/or transport ventilator where general anesthesia or ventilatory support may be required.
- Bag-mask ventilation equipment, oropharyngeal/nasopharyngeal airways, supraglottic airways, laryngoscopes/video-laryngoscopy where available, endotracheal tubes and difficult-airway rescue equipment.
- Defibrillator with synchronized cardioversion capability and adult/pediatric pads where pediatric care is performed.
- Emergency drugs, IV access equipment, fluids, infusion devices and antagonists appropriate to the medications in use.
- Regional anesthesia equipment when neuraxial or peripheral regional techniques are planned.
- Reliable communication system for immediate assistance and a defined route for emergency transfer to an operating room, PACU or ICU.

Before the first case of the day, designated anesthesia personnel should complete the institutional NORA equipment checklist (HB.LS.018).

9. Monitoring Standards

Domain	Minimum expectation
Oxygenation	Continuous pulse oximetry during moderate/deep sedation and general anesthesia; inspired oxygen concentration monitored when an anesthesia machine is used.
Ventilation	Continuous clinical observation; capnography/EtCO ₂ monitoring for moderate/deep sedation and general anesthesia when clinically applicable and technically feasible.
Circulation	ECG and blood pressure monitoring at clinically appropriate intervals; invasive arterial monitoring when patient/procedure risk warrants.
Consciousness	Repeated assessment of response to verbal/tactile stimulation during sedation.
Temperature	Monitor when clinically significant changes are intended, anticipated or suspected.
Documentation	Record physiologic values, oxygen delivery, medications, fluids, adverse events and interventions on the approved anesthesia record.

10. Anesthetic and Sedation Strategy

The target depth of sedation should be defined before starting and should match the procedure, patient characteristics and ability of the location/team to rescue a patient from deeper-than-intended sedation.

- Minimal/moderate sedation may be appropriate for short, minimally painful procedures in cooperative patients.
- Sedation-analgesia should be used when both anxiety and pain are expected.
- Deep sedation or general anesthesia may be required for prolonged, painful, immobility-dependent or airway-compromising procedures.
- When patient access is restricted (e.g., MRI, radiation therapy), monitoring and rescue planning must compensate for reduced physical access.
- A planned conversion pathway to general anesthesia and airway control should be available whenever deep sedation is used.

11. Medication Principles

The source procedure lists propofol, ketamine, midazolam, etomidate, opioids (including fentanyl and remifentanyl), dexmedetomidine, nitrous oxide, and reversal agents (flumazenil and naloxone), with pediatric chloral hydrate in selected legacy pathways. In this guideline, medication selection and dosing must follow approved institutional drug protocols, product information, patient age/weight, organ function, comorbidities, procedure requirements and the treating anesthesiologist's judgement.

Agent/Class	Operational considerations
Propofol	Rapid onset/offset; no intrinsic analgesia; dose-dependent hypotension and respiratory depression.
Ketamine	Analgesic and dissociative properties; relative preservation of spontaneous ventilation; secretions, emergence phenomena and sympathetic effects may occur.
Midazolam	Anxiolysis/amnesia; respiratory depression may be potentiated by opioids; prolonged effect in older/frail patients or organ dysfunction.
Opioids	Useful for painful procedures; titrate carefully because of respiratory depression, bradycardia, nausea/vomiting and chest-wall rigidity with potent rapid dosing.
Dexmedetomidine	Sedation with limited respiratory depression; bradycardia and hypotension may occur.
Etomidate	May be useful for short procedures in selected hemodynamically fragile patients; myoclonus, nausea and adrenal suppression are considerations.
Flumazenil / Naloxone	Reversal agents require continued observation because antagonist duration may be shorter than the sedative/opioid effect.
Chloral hydrate	Source-procedure legacy pediatric option. Use only if retained in

Medication-dose verification note. Several numeric doses in HB.PR.010 appear to require pharmacology review before direct reuse (for example, unit/maximum-dose wording in some procedure-specific passages). Those values are therefore not reproduced as mandatory dosing instructions in the main guideline.

12. Procedure- and Location-Specific Guidance

12.1 Gastroenterology (Endoscopy, Colonoscopy, ERCP, EUS)

- Assess aspiration risk, gastroesophageal reflux, delayed gastric emptying, bowel-preparation-related hypovolemia/electrolyte disturbance and procedural position.
- Endoscopy/colonoscopy commonly uses sedation or sedation-analgesia; prolonged or complex procedures may require deep sedation or general anesthesia.
- ERCP patients may be physiologically fragile (e.g., cholangitis, pancreatitis, malignancy, dehydration); plan for airway access, prone/semi-prone positioning and hemodynamic instability.
- After the procedure, assess for procedure-related complications such as perforation, pancreatitis, cholangitis and respiratory events as clinically relevant.

12.2 Emergency Department Red Areas

- Emergency sedation/anesthesia may be required for intubation, severe agitation or painful interventions.
- Use continuous vital monitoring and oxygenation; capnography should be used when moderate/deep sedation is administered and feasible.
- Because fasting status is often unknown, aspiration risk and need for airway control must be considered explicitly.

12.3 Cardiovascular and Electrophysiology Procedures

- Transesophageal echocardiography may require sedation; aspiration and airway obstruction risk should be considered, particularly in patients with cyanotic heart disease or respiratory failure.
- Cardioversion generally requires brief deep sedation/anesthesia with preoxygenation and immediate airway/resuscitation readiness.
- Coronary angiography/PCI often requires local anesthesia with titrated sedation-analgesia; hemodynamic instability, arrhythmia, contrast reactions and emergency conversion must be anticipated.
- Electrophysiology/ablation and device implantation may require sedation-analgesia or general anesthesia according to duration, pain, immobility requirement and patient condition.
- TAVI/TAVR may be performed under monitored anesthesia care/sedation or general anesthesia; invasive monitoring and postoperative destination should be individualized.

12.4 Bronchoscopy and Pulmonary Procedures

- Titrate sedatives/analgesics to minimize respiratory depression while providing adequate procedural conditions.
- Topical airway anesthesia may be used as appropriate.
- Non-invasive ventilatory support may be considered in selected high-risk patients when compatible with the procedure and monitoring.

12.5 Neurointerventional Radiology

- Perform and document a baseline neurologic assessment and Glasgow Coma Scale when relevant.
- Use invasive arterial pressure monitoring, urine output monitoring and EtCO₂/arterial blood gas assessment when clinically indicated.
- Plan for hemorrhage, thromboembolism, vasospasm and rapid neurologic change; smooth emergence should minimize coughing/straining when clinically important.
- Post-procedure ICU or high-acuity observation may be required.

12.6 Obstetric Intervention Room and Neuraxial Labor Analgesia

- Sedation or general anesthesia may be required for uterine exploration, curettage or management of abnormal uterine bleeding.

- Neuraxial labor analgesia may use spinal, combined spinal-epidural or epidural techniques selected by the anesthesiologist.
- Resuscitation equipment, oxygen and maternal monitoring must be immediately available; post-procedure monitoring continues jointly with obstetric care.

12.7 Hematology / Bone Marrow / Intrathecal Procedures

- Review platelet count and coagulation status when relevant to the planned procedure or neuraxial technique.
- Use short-acting analgesia/sedation for painful bone marrow procedures as appropriate.
- Consider infection risk in patients receiving chemotherapy, immunosuppression or high-dose corticosteroids.

12.8 Radiation Oncology and Brachytherapy

- Repeated sedation may be required, particularly in children; plans should minimize cumulative risk and preserve reliable vascular access when appropriate.
- Because staff may monitor from outside the treatment room, remote visual monitoring and continuous physiologic monitoring are essential.
- Brachytherapy may use neuraxial anesthesia or deep sedation/general anesthesia according to procedure and patient factors.

12.9 Interventional Pain Procedures

- Sedation-analgesia may be used for anxious or painful cases; depth should not unnecessarily eliminate neurologic feedback when that feedback is important to procedural safety.
- Monitoring must match the intended sedation depth and patient risk.

12.10 Nuclear Medicine

- Sedation may be needed for claustrophobia, severe pain, developmental limitations or inability to remain still.
- Before administering sedation in any nuclear-medicine room, confirm oxygen, suction, monitoring and emergency equipment are immediately available.

12.11 CT Imaging

- Consider positioning, contrast exposure/allergy risk and limited access during scanning.
- Sedation may be needed for pediatric patients, claustrophobia or painful image-guided procedures; analgesia should be added for painful interventions.

12.12 Electroconvulsive Therapy (ECT)

- Provide brief general anesthesia with neuromuscular blockade according to the approved ECT anesthesia protocol.
- Ensure ventilation, oxygenation, cardiovascular monitoring and post-anesthesia recovery are available for every treatment.
- Specific induction and neuromuscular-blocking drug doses should follow the current institutional ECT protocol rather than this general NORA guideline.

13. Pediatric NORA Considerations

- Pediatric equipment and resuscitation drugs must be immediately available in age- and weight-appropriate sizes/doses.
- Sedation depth should be selected according to developmental status, cooperation, procedure duration/pain and airway risk rather than age alone.
- Children may progress rapidly from moderate to deep sedation; personnel must be capable of pediatric airway rescue.
- Fasting should follow intake-specific intervals and current pediatric anesthesia policy.
- The source procedure includes pediatric hematology, endoscopy, colonoscopy, cardiology, oncology, transplantation, wards, chemotherapy/transfusion and MRI locations.
- Legacy chloral-hydrate pathways should be used only if still approved by the current pediatric sedation formulary and local policy.

14. MRI and Remote-Location Safety

- All anesthesia equipment entering the MRI environment must be MR Safe or MR Conditional under the conditions of use.
- Use MRI-compatible ECG, pulse oximetry and blood-pressure monitoring; capnography should be used for moderate/deep sedation and general anesthesia when feasible.
- The anesthesia professional must maintain continuous visual/physiologic observation despite physical separation from the patient.
- Before anesthesia begins, define how the patient will be rapidly removed from the scanner for airway management, resuscitation or defibrillation.
- Emergency resuscitation should occur in a designated safe area outside the high-field zone using appropriate equipment.
- Secure IV lines, airway devices and monitoring cables to prevent disconnection during table movement.

15. Recovery, Transfer and Discharge

Patients must remain under trained observation until they have recovered from the intended effects of anesthesia/sedation and meet transfer/discharge criteria appropriate to the destination.

Recovery domain	Expected status before routine discharge/transfer
Activity	Return toward pre-procedure motor function appropriate to the anesthetic technique.
Respiration	Adequate spontaneous ventilation; no clinically significant obstruction/apnea.
Circulation	Hemodynamically stable relative to baseline.
Consciousness	Awake or returned to baseline mental status, unless a planned clinical condition dictates otherwise.
Oxygenation	Acceptable saturation on room air or prescribed baseline oxygen.
Pain / nausea	Controlled to an acceptable level.
Bleeding / procedure complications	No unresolved immediate complication requiring higher-acuity care.

Modified Aldrete Score. A score ≥ 9 is generally acceptable for routine PACU discharge when no other clinical concern exists; institutional policy and anesthesiologist judgement take precedence. A lower score, unexpected deterioration, persistent sedation, airway compromise or hemodynamic instability requires anesthesiologist review and may require extended observation, ward transfer with monitoring, PACU or ICU admission.

Ambulatory discharge instructions should include a responsible adult escort when appropriate, avoidance of driving/operating machinery and individualized advice on oral intake, medications and warning symptoms. Fixed time instructions should be replaced by clinically appropriate, procedure-specific discharge advice.

16. Documentation and Quality Indicators

- Pre-anesthesia assessment and consent completion rate.
- Completion rate of the NORA equipment checklist before the first case.
- Documented target sedation depth and monitoring appropriate to depth.
- Capnography use in moderate/deep sedation when applicable.
- Unplanned airway intervention, intubation or conversion to general anesthesia.
- Hypoxemia, severe hypotension, cardiac arrest or emergency transfer.
- Unplanned ICU admission or hospital admission after ambulatory NORA.
- Recovery delay and Modified Aldrete score at discharge/transfer.
- Medication reversal events (naloxone/flumazenil) and related extended observation.
- Procedure cancellations related to fasting, equipment, staffing or incomplete assessment.

17. Implementation and Local Adaptation

This is an Ankara Bilkent City Hospital institutional guideline. Each NORA site should map the guideline requirements to its physical environment, staffing model, emergency response pathway, approved drug protocols, local forms and

specialty workflows. Any site unable to meet the minimum monitoring, oxygen, suction, airway rescue, defibrillation, communication or recovery requirements should not provide the intended depth of anesthesia until the deficiency is corrected or the patient is moved to a suitable location.

Appendix A. Institutional Document Map

Code	Document
HB.PR.010	Procedure for Anesthesia Practice Outside the Operating Room and Intensive Care Unit
HD.RB.360	Anesthesia Patient Information and Consent Form
HB.LS.018	Checklist for Anesthesia Outside the Operating Room and Intensive Care Unit
AH.FR.002	Pre-Anesthesia Patient Evaluation Form
HB.FR.401	Non-Operating Room Anesthesia Follow-up and Transfer Form
AH.FR.050	Non-Operating Room Anesthesia Follow-up Form

Appendix B. Pre-Case NORA Safety Checklist

- ☐ Patient identity, procedure, site and consent confirmed
- ☐ ASA status and airway assessment documented
- ☐ Fasting/aspiration risk assessed
- ☐ Allergies and relevant medications reviewed
- ☐ IV access plan confirmed
- ☐ Oxygen and suction tested
- ☐ ECG/NIBP/SpO2 monitoring functional
- ☐ Capnography available when indicated
- ☐ Airway and difficult-airway equipment present
- ☐ Bag-mask ventilation device present
- ☐ Defibrillator/resuscitation drugs available
- ☐ Procedure-specific equipment checked
- ☐ MRI compatibility confirmed when relevant
- ☐ Recovery destination and escort/transfer plan defined

Appendix C. Source-to-Guideline Traceability

Source section	Guideline destination	Treatment
Purpose / Scope	Sections 1 and 5	Translated and restructured; Ankara Bilkent institutional scope retained.
Sedation definitions / ASA status	Section 3	Retained and standardized in English.
Pre-sedation evaluation and consent	Section 6	Retained; routine-testing wording replaced by clinically indicated testing.
Equipment list	Section 8	Retained and expanded with capnography/communication/rescue pathway.
Drug descriptions/doses	Section 11	Drug classes retained; unverified numeric doses not made mandatory.
Gastroenterology / cardiology / pulmonary / neuro / pediatric / obstetric / oncology / radiology / ECT	Section 12-14	Retained as procedure-specific guidance; wording condensed and safety-focused.
Modified Aldrete = 9	Section 15	Generalized to >=9 plus clinical readiness.

Six-hour fasting statements	Section 7	Updated to intake-specific fasting intervals.
Local forms	Appendix A	Retained for implementation.

References

8. Ankara Bilkent City Hospital. HB.PR.010 Procedure for Anesthesia Practice Outside the Operating Room and Intensive Care Unit. Revision 03; 19 December 2025.
9. American Society of Anesthesiologists. Standards for Basic Anesthetic Monitoring. Current online standard.
10. American Society of Anesthesiologists. Statement on Nonoperating Room Anesthesia Services. Current online statement.
11. American Society of Anesthesiologists. Practice Guidelines for Preoperative Fasting and related 2023 modular update.
12. American Society of Anesthesiologists. Practice Advisory on Anesthetic Care for Magnetic Resonance Imaging.
13. Turkish Society of Anaesthesiology and Reanimation (TARD). Guideline for Anesthesia Applications Outside the Operating Room (as cited in the source procedure).
14. Turkish Ministry of Health. Healthcare Quality Standards and Accreditation Standards (as cited in the source procedure).