Sedation Practices in Gastrointestinal Endoscopy: Insights and Recommendations from the 2nd Central European Gastroenterological Forum

Praksa sedacije pri gastrointestinalni endoskopiji: spoznanja in priporočila 2. srednjeevropskega gastroenterološkega foruma

Milan Stefanovič*
Diagnostic Centre Bled Group, Bled, Slovenia, Pod Skalo 4, 4260 Bled
Slovenian Journal of Gastroenterology / Gastroenterolog 2025; 2: 5–11

Ključne besede: *sedacija, gastrointestinalna endoskopija, propofol, smernice, usposabljanje, Srednja Evropa, varnost pacientov*

Keywords: *Sedation; Gastrointestinal endoscopy; Propofol; Guidelines; Training; Central Europe; Patient safety*

IZVLEČEK

Uvod: Sedacija je bistvena za visokokakovostno gastrointestinalno (GI) endoskopijo, vendar kaže znatno variabilnost po Srednji Evropi, pogosto brez standardizacije na podlagi dokazov. Ta forum je namenjen obravnavi teh razlik z dialogom strokovnjakov.

Metode: 2. srednjeevropski gastroenterološki forum, ki je potekal 5. junija 2025 v Ljubljani, Slovenija, je združil 19 multidisciplinarnih strokovnjakov iz 10 držav. 2,5-urni zvočno-vizualno posnet sestanek je vključeval predstavitve specifične za države o smernicah, metodah, administraciji, izzivih in izidih. Razprave so se osredotočile na globino sedacije, varnost, usposabljanje, vire in oskrbo, na podlagi mednarodno sprejetih smernicah (npr. ESGE 2024, BSG 2023, ASGE 2025).

ABSTRACT

Background: Sedation is essential for high-quality gastrointestinal (GI) endoscopy but exhibits significant variability across Central Europe, often lacking evidence-based standardisation. This forum aimed to address these disparities through expert dialogue.

Methods: The 2nd Central European Gastroenterological Forum, held on June 5, 2025, in Ljubljana, Slovenia, convened 19 multidisciplinary experts from 10 countries. The 2.5-hour audio-visually recorded session included country-specific presentations on guidelines, methods, administration, challenges, and outcomes. Discussions focused on sedation depth, safety, training, resources, and patient-centred care, informed by recent guidelines (e.g., ESGE 2024, BSG 2023, ASGE 2025). A comparative table summarises practices, followed by consensus-building debates.

* Prim. Milan Stefanovic, MD, AGAF (SAGH President)
Diagnostic Centre Bled Group, Bled, Slovenia, Pod Skalo 4, 4260 Bled
E-mail: milan.stefanovic@dc-bled.si

Received: 1. 9. 2025; Review: 10. 9. 2025; Accepted for publication: 15. 9. 2025

Rezultati: Ugotovljene so bile izrazite razlike: propofol rutinsko administrirajo usposobljeni ne-anestezisti na Nizozemskem in v Avstriji (npr. 85 % primerov, nizki zapleti < 0,1 %), drugje pa je omejen na anesteziste zaradi regulacij in vrzeli v usposabljanju. Zmerna sedacija (midazolam + fentanil) prevladuje v Sloveniji (90 % ne-sediranih kolonoskopij) in vzhodnih državah, kar zmanjšuje kakovostne metrike, kot je detekcija adenomov. Ključni izzivi so: odpor anestezistov, pomanjkanje financiranja in neenotnosti v spremljanju sediranih pacientov (npr. uporaba kapnografije se razlikuje 20-80 %).

Zaključki: Nuja po enotnih regionalnih smernicah, programih usposabljanja za medicinske sestre/zdravnike (npr. avstrijski model in interdisciplinarnem pristopu). Postopna implementacija prek čezmejnih mrež bi lahko standardizirala prakse, izboljšala varnost in dostopnost.

Results: Marked variations emerged: propofol is routinely administered by trained non-anaesthesiologists in the Netherlands and Austria (e.g., 85% of cases, with low complications of <0.1%, but is restricted to anaesthesiologists elsewhere due to regulations and training gaps. Moderate sedation (midazolam + fentanyl) predominates in Slovenia (90% unsedated colonoscopies) and Eastern countries, reducing quality metrics like adenoma detection. Key challenges included anaesthesiologist resistance, funding shortages, and inconsistencies in monitoring (e.g., capnography use varies 20-80%). Consensus highlighted sedation's role in improving satisfaction (up to 95% with propofol) and efficiency, with low overall risks in trained settings.

Conclusions: Unified regional guidelines, nurse/physician training programs (e.g., Austria's model), and interdisciplinary advocacy are urgently needed. Phased implementation through cross-border networks could standardise practices, thereby enhancing safety and access. Future forums will track progress toward regionally aligned policies.

BACKGROUND

Sedation is integral to high-quality gastrointestinal endoscopy, yet significant variability exists in its application, often without robust supporting evidence. This variability can compromise patient safety, procedural efficiency, and overall quality of care. Current guidelines and position statements on sedation practices differ widely, highlighting the need for unified recommendations and quality improvement measures.

The 2nd Central European Gastroenterological Forum addressed the critical issue of sedation in gastrointestinal endoscopy, focusing on identifying challenges and proposing actionable steps to enhance the quality, safety, and efficiency of sedation practices. Given the variability and often unregulated nature of sedation practices across Slovenia and other European countries, this forum aimed to foster dialogue, share best practices, and develop a framework for standardised, evidence-based sedation protocols.

The meeting was recorded audio-visually for a resume, lasting about 2.5 hours. Key goals included sharing experiences, identifying best practices, and fostering collaboration to influence EU-level policies, given Central Europe's geographic centrality but economic/historical edges.

KEY PRESENTATIONS

The forum featured presentations from representatives of various countries, emphasizing guidelines, sedation methods, safety, and implementation challenges.

PANELISTS:

- Joost Drenth (NL); Joost.Drenth@radboudumc.nl;
- Arnulf Ferlitsch (AT); arnulf.ferlitsch@semperstrasse29.at;
- Tibor Gyökeres (HU); tiborgyokeres65@gmail.com;
- Aleksandra Pavlović Marković (SRB); akica68@yahoo.com;
- Mery Trajkovska (MK); meritrajkovska@yahoo.com;
- Brigita Smolović (MNE); petar.s@t-com.me;
- Daniela Osuska (SVK); dhaviar@yahoo.com;
- Tomaš Grega (CZ); Tomas.Grega@uvn.cz;
- Piotr Wosiewicz (PL); doctorw@poczta.onet.pl;
- Petko Karagyozov (BG); petko.karagyozov@gmail.com;
- Tomislav Bokun (CRO); tbokun@gmail.com;
- Nenad Vanis (BIH); vanis@bih.net.ba;
- Andrei Groza (RO); drandreigroza@gmail.com;
- Borut Štabuc (SLO); borut.stabuc@gmail.com;
- Peter Poredoš (SLO); peter.poredos@kclj.si;
- Tomaž Lužar (SLO); tomaz.luzar@kclj.si;
- David Drobne (SLO); david.drobne@gmail.com;
- Milan Stefanović (SLO); milan.stefanovic@dc-bled.si;

Table 1. Summary Table Comparing Practices Across Highlighted Countries.

Country	Sedation Guidelines	Common Sedation Methods	Who Administers Propofol?	Key Challenges	Notable Data/ Outcomes
Netherlands (Prof. Drent, Amsterdam UMC)	Dutch guideline on sedation/ analgesia; distinguishes light (midazolam/ fentanyl) vs. moderate/deep (propofol). ESG 2015 also referenced.	Light: Midazolam + fentanyl/ alfentanil by trained gastroenterologists/ nurses. Deep: Propofol by sedation specialists.	Currently anaesthesiologists or trained specialists; NAPS project aims for nurse-administered propofol under gastroenterologist supervision by Sept 2025.	Resistance from anaesthesiologists; training needs; limited sedation specialists.	Patient complaints with light sedation; higher satisfaction with propofol. SWOT: Strengths (safer, patient-preferred); Threats (training effort, resistance).
Austria (Dr. Ferlitsch, University Hospital Viena AKH)	Based on German S3 guideline (2023); new ESG update expected 2026. Position paper presented at national meeting.	Propofol monotherapy (1% bolus) preferred; midazolam/remimazolam alternatives; opioids/ketamine for pain in complex cases.	Trained non-anaesthesiologists (physicians/ nurses) after certification; anaesthesiologists for ASA ≥3 or high-risk.	ASA risk assessment mandatory; training renewal every 3 years.	Registry (2007–2023): 209,000 colonoscopies; 16% propofol only, 69% propofol + midazolam; low complications; safe non-anaesthesiologist administration.
Slovenia (Dr. Strniša, UKC Ljubljana; Organizer Dr. Stefanović, SAGH)	ESG guidelines; national guidelines outdated (10+ years).	Mostly midazolam + fentanyl (moderate sedation) by endoscopists/ nurses; propofol rare (2–18% cases).	Anaesthesiologists only; occasional bypassing with additional gastroenterologist.	No payment for sedation; 90% colonoscopies unsedated; lack of nurse specialization; regulatory disputes (e.g., inspections on mild sedation monitoring).	2,500 + non-anaesthesiologist sedations/year; <2% anaesthesiologist involvement; rare complications; higher quality with sedation.
Czech Republic (Dr. Thomas Grega, Military University Hospital)	ESG guidelines; no national specifics.	Traditional (benzodiazepines/opioids) dominant; propofol for difficult/ therapeutic cases.	Anaesthesiologists only (national law); no training for gastroenterologists	Absence of antidote; pre-procedure exams (ECG, etc.); insurance biases.	National registry: 9–10% propofol in preventive/diagnostic colonoscopies (downward trend); higher satisfaction with propofol + fentanyl combo.
Anaesthesiologist / Slovenian Society of Aesthesia-logy and Intensive Medicine/ Slovenian perspective (Dr. Poredoš, Dr. Lužar Slovenia)	Emphasizes minimal/moderate sedation; aligns with ESG but stresses risks.	Mild: Midazolam/ fentanyl; deep: Propofol/general anaesthesia.	Anaesthesiologists for deep sedation; trains others for mild.	Costs; need for pre-assessment; capnography for safety.	<10% anaesthesiologist involvement in GI procedures; new drugs like remimazolam promising.

Insight into the debate and the apparent differences between different countries:

Romania *(Andre Groza): Advocates unsedated colonoscopy (water immersion technique); sedation lowers quality indicators (e.g., polyp detection).*

Hungary *(Tibor Gyökeres): 1/3 of screening colonoscopies are unsedated, resulting in worse outcomes; patient expectations demand sedation.*

Poland *(Piotr Wosiewicz): Propofol only by anaesthesiologists; fentanyl/midazolam for EUS; nurse shortages; national fund pays for anaesthesia.*

KEY DISCUSSIONS AND DEBATES:

Sedation Depth and Quality: Consensus that sedation improves patient satisfaction and procedure quality (e.g., higher adenoma detection, cecal intubation). Counterarguments: Unsedated procedures train better technique (Poland (Wosiewicz)/Romania (Groza); deep sedation risks over-reliance (Canadian article reference).

Safety and Monitoring: Capnography debated—essential for detecting apnoea (anaesthesiologists/Austria (Ferlitsch)); not always needed for mild sedation (ESGE/ASGE guidelines). Oxygen supplementation masks respiratory depression. Reversal agents (e.g., for midazolam) are overused in Slovenia (Strniša), indicating dosing issues.

Training and Regulations: Need for nurse/physician certification (e.g., Austria's 1-day course + 100 supervised cases, renewed every 3 years (Ferlitsch). Slovenia lacks nurse specialisation; disputes over mild sedation monitoring (e.g., inspections). Resistance from anaesthesiologists has historically been overcome in the Netherlands (Drent)/Austria (Ferlitsch) via collaboration.

Resources and Costs: Anaesthesiologist shortages limit access to propofol; unpaid sedation in Slovenia (Stefanović) reduces its usage. Private vs. public disparities; Patient turnover is high in endoscopy, but sedation should not significantly impact this.

Patient-Centric Views: Fear of pain drives demand; offer sedation to all, inform risks (Austria (Ferlitsch))/ESGE). Propofol is preferred for its rapid onset and recovery.

Complications: Low rates reported; no elevated cardiopulmonary risks with non-anesthesiologist propofol (Austria (Ferlitsch) registry).

SUGGESTIONS FOR IMPLEMENTING SOLUTIONS

Based on the forum's insights, here are actionable recommendations to address challenges such as access to propofol, training, and standardisation. These focus on collaboration, phased implementation, and evidence-based advocacy.

1. **Develop Unified Central European Guidelines:**
   - Form a working group (e.g., via national societies like Austrian/Slovenian Gastroenterology Societies) to draft regional guidelines adapting ESGE 2015/2026 updates. Include anesthesiologists for buy-in.
   - Implementation: Pilot in 1-2 countries (e.g., Slovenia to emulate Austria's position paper). Timeline: Draft by Q1 2026; endorse at the following forum. Fund via EU grants for cross-border health initiatives.
2. **Establish Training Programs for Non-Anesthesiologists:**
   - Create standardised courses for physicians/nurses (e.g., 1-day theory/practice + 100 supervised cases, as in Austria). Cover ALS, airway management, and pharmacokinetics.
   - Target: Nurses with nursing diploma + endoscopy experience; add specialisation modules (address Slovenia's gap by partnering with universities).
   - Implementation: Collaborate with intensive care/anaesthesiology societies for 'train-the-trainers' programs. Start with online modules +

in-person simulations. Certify via national societies; renew every 3 years. Roll out NAPS-like projects (The Netherlands model) in hospitals, monitoring outcomes via registries.

3. **Improve Safety and Monitoring Protocols:**

– Mandate capnography for moderate/deep sedation; optional for mild. Stratify by ASA score (e.g., anaesthesiologist for ASA ≥ 3).

– Implementation: Equip endoscopy units affordably (capnography costs low). Integrate into pre-procedure checklists. Track complications in national registries (expand Czech/Austrian models regionally) for data-driven advocacy.

4. **Address Resource and Funding Barriers:**

– Advocate for reimbursement (e.g., lobby ministries/social security in Slovenia). Highlight cost savings from higher procedure volumes/patient participation.

– Implementation: Utilise forum data (e.g., Austria's low complication rates) in policy briefs. Partner with the private sector for pilot funding. Optimise staffing: 2–3 personnel per room based on procedure complexity (e.g., nurse monitors mild sedation).

5. **Foster Interdisciplinary and Cross-Country Collaboration:**

– Create a Central European Endoscopy Sedation Network for ongoing forums, shared registries, and joint research (e.g., on propofol safety).

– Implementation: Host annual meetings (rotating countries) and involve patients for feedback. Utilise evidence from high-adoption countries to mitigate resistance (e.g., addressing anaesthesiologist concerns through joint SWOT analyses).

6. **Monitor and Evaluate Progress:**

– Set KPIs: Increase sedated procedures by 20% in 2 years; reduce complications; survey patient satisfaction.

– Implementation: Annual audits; publish results to build evidence for broader adoption. Start small (e.g., one unit per country) and scale based on outcomes.

– These steps prioritise safety, patient-centred care, and feasibility, leveraging forum momentum for regional improvements.

- **The ASGE's updated 2025 guidance** covers sedation from minimal to deep levels, including endoscopist-administered propofol sedation, and emphasises the importance of careful patient assessment, monitoring, and readiness for rescue. It highlights the need for anaesthesia-provider assistance in complex cases or for high-risk patients.
- The **Gut 2023 guidelines** focus on governance, training, and procedure pathways throughout the patient journey—from booking to post-procedural recovery.

Component	Current Guidance
Pre-assessment	ASA status, airway assessment (Mallampati, BMI, OSA), comorbidities; fasting and consent with detailed sedation explanation
Training & Governance	Mandatory sedation training (drug knowledge, airway skills, monitoring, life support); structured competency and refresher courses; sedation committee oversight
Sedation Levels & Drug Use	Moderate (benzodiazepine + opioid) for routine; propofol for faster recovery or patient preference; deep sedation/anaesthesia reserved for advanced procedures
Monitoring	Continuous pulse oximetry, blood pressure, HR; **capnography** increasingly recommended for moderate/deep sedation; ECG for high risk patients
Rescue Preparedness	Trained staff present, airway management equipment, reversal agents immediately available
Recovery & Discharge	Monitor until baseline consciousness; recovery trained personnel until discharge; advise no driving/heavy activity-duration depending on drug half lives
Escort & Discharge Advice	Patients (especially those receiving benzodiazepine plus opioid) must have a responsible escort; cannot sign legal documents or operate machinery for up to 12 hours; propofol only patients may recover faster (≈2 hours), but legal prudence recommends the same advice.

SAGH PROPOSAL FOR SLOVENIA

Endoscopy in gastroenterology is in dire need of sedation. This area is currently unregulated, which affects the quality of endoscopy and may put patients in risk of harm. Propofol can be used for moderate sedation and can be used by appropriately trained staff, that is, non-anaesthesiologists. Given the profile, safety, experience and practice in other countries, it does not make sense to declare it only as a means of deep sedation and that it is therefore only within the domain of the specialist anaesthesiologist.

A trained team is required for safe and high-quality sedation. It is mandatory to learn/manage sedation through competency assignment and proper licensing through refresher courses.

Such education is currently not available for non-anaesthesiologists in Slovenia. It is essential to initiate suitable activities to make this possible. However, since this will require considerable preparation, from the curriculum to logistics, the SAGH proposes that non-anaesthesiologists be trained abroad during the transitional period, for example, in Austria. Their model of education and licensing is appropriate and effective, while also allowing sedation to be performed by non-anaesthesiologists. In this direction, it is necessary to liaise with our Austrian colleagues, specifically the representatives of SSAIM and SAGH. Additionally, it is essential to involve the Medical Chamber and the Ministry of Health in these activities.

Supplement and comments to the above report by SSAIM (Poredoš)

"Propofol can be used for moderate sedation and can be used by appropriately trained staff, that is, non-anaesthesiologists." At the moment, there is no appropriate training for the use of propofol in Slovenia, except for anaesthesiologists and intensive care medicine specialists. "However, since this will require considerable preparation, from the curriculum to the logistics, the SAGH proposes that non-anaesthesiologists should be trained abroad during the transitional period, for example, in Austria." We cannot agree with this statement - in Austria (as presented by Dr Ferlitsch) at the moment, only physicians with a history of at least 6 months of intensive medicine training are allowed to perform sedation with propofol. Besides this, a comprehensive training, including 100 supervised cases, is necessary, not just one-day course. Additionally, it has been clearly presented that a certificate in Advanced Life Support (ALS) is necessary (the ALS course takes 2 days).

It is crucial that the administration of periprocedural analgesia according to the guidelines, must be supervised by The National Anaesthesiology Society - in Slovenia = The Slovenian Society of Anaesthesiology and Intensive Medicine. Additionally, education in PSA must be organised by SSAIM. Therefore, education highlights the importance of collaboration between SAGH and SSAIM in ensuring safe and effective sedation practices.

SSAIM proposal for Slovenia:

1. Develop Unified Central European Guidelines: Also the ESAIC procedural sedation guidelines, https://esaic.org/guideline/guidelines-for-procedural-sedation-and-analgesia-in-adults/, must be considered.
2. Establish Training Programs for Non-Anaesthesiologists: “Target: Nurses with nursing diploma + endoscopy experience; add specialisation modules (address Slovenia’s gap by partnering with universities)” - In Slovenia nurses do not have any specialisation, cannot prescribe and apply the drugs on their own, cannot manage the spontaneous breathing depression on their own and cannot be legally responsible for their pharmacological therapeutic actions. This responsibility would mandate a change in legislation; nobody can set the target on nurses, but rather on physicians. However, a nurse with a diploma can monitor a patient’s vital signs and administer drugs under a physician’s

order.The position of the Scientific Board of Anaesthesiology, Reanimatology and Perioperative Intensive Care with The Ministry of Health is clear: procedural sedation and analgesia can be performed only be performed by a physician, who is not performing the procedure at the same time. The nurse cannot perform a PSA.

*Regarding these comments and proposals of **SSAIM**, **SAGH** cannot agree on specific points at this moment. Primarily about who and when can apply and supervise sedation. See the report above.* However, we are pleased that SSAIM is aware of the need to regulate this area. *We must realise that appropriate sedation is a prerequisite for a quality gastroenterological endoscopic examination (diagnostic and therapeutic).* Therefore, we emphasise the urgent need for this field to be systematically regulated in Slovenia, in collaboration with decision-makers, underlining the importance of each individual's role in this process.

Conclusions

The forum highlighted stark variations: Advanced propofol access in Netherlands/Austria vs. restrictions in other countries. Sedation is essential for quality endoscopy and patient acceptance, but barriers include outdated guidelines, training gaps, costs, and anaesthesiologist involvement. Participants agreed on the need for updated ESGE guidelines, cross-country collaboration, and joint advocacy to EU bodies. Future meetings proposed (e.g., Austria (Ferlitsch) hosting next). Emphasis was on safety via training, monitoring (e.g., capnography for deep sedation), and interdisciplinary cooperation (gastroenterologists + anaesthesiologists).

Literature:

1. ASGE Standards of Practice Committee; Early DS, Lightdale JR, Vargo JJ 2nd, Acosta RD, Chandrasekhara V, Chathadi KV, Evans JA, Fisher DA, Fonkalsrud L, Hwang JH, Khashab MA, Muthusamy VR, Pasha SF, Saltzman JR, Shergill AK, Cash BD, DeWitt JM. Guidelines for sedation and anesthesia in GI endoscopy. Gastrointest Endosc. 2018 Feb; 87 (2): 3 27-337. doi: 10.1016/j.gie.2017.07.018. Epub 2018 Jan 3. PMID: 29306520.
2. Sidhu R, Turnbull D, Haboubi H, Leeds JS, Healey C, Hebbar S, Collins P, Jones W, Peerally MF, Brogden S, Neilson LJ, Nayar M, Gath J, Foulkes G, Trudgill NJ, Penman I. British Society of Gastroenterology guidelines on sedation in gastrointestinal endoscopy. Gut. 2024 Jan 5;73(2):219-245. doi: 10.1136/gutjnl-2023-330396. Erratum in: Gut. 2024 Feb 23; 73 (3): e6. doi: 10.1136/gutjnl-2023-330396corr1. PMID: 37816587; PMCID: PMC10850688.
3. Wehrmann T, Riphaus A, Eckardt AJ, Klare P, Kopp I, von Delius S, Rosien U, Tonner PH; Collaborators. Updated S3 Guideline "Sedation for Gastrointestinal Endoscopy" of the German Society of Gastroenterology, Digestive and Metabolic Diseases (DGVS) - June 2023 - AWMF-Register-No. 021/014. Z Gastroenterol. 2023 Nov; 61 (11): e654-e705. doi: 10.1055/a-2165-6388. Epub 2023 Oct 9. PMID: 37813354.
4. Patient Care & Safety [Internet]. [cited 2025 Sep 16]. Available from: https://www.sgna.org/Practice-Resources/GI-Nurse-Sedation/Patient-Care-Safety
5. Triantafyllou K, Sidhu R, Tham T, Tziatzios G, Guy C, Messmann H, Arvanitakis M, Hassan C, Bisschops R, Gralnek IM. Sedation practices in Gastrointestinal Endoscopy: European Society of Gastrointestinal Endoscopy (ESGE) survey. Endoscopy. 2024 Dec; 56 (12): 964-974. doi: 10.1055/a-2416-4866. Epub 2024 Nov 4. PMID: 39496289.
6. Dumonceau JM, Riphaus A, Beilenhoff U, Vilmann P, Hornslet P, Aparicio JR, Dinis-Ribeiro M, Giostra E, Ortmann M, Knape JT, Ladas S, Paspatis G, Ponsioen CY, Racz I, Wehrmann T, Walder B. European curriculum for sedation training in gastrointestinal endoscopy: position statement of the European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Gastroenterology and Endoscopy Nurses and Associates (ESGENA). Endoscopy. 2013 Jun; 45 (6): 496-504. doi: 10.1055/s-0033-1344142. Epub 2013 May 23. PMID: 23702777.