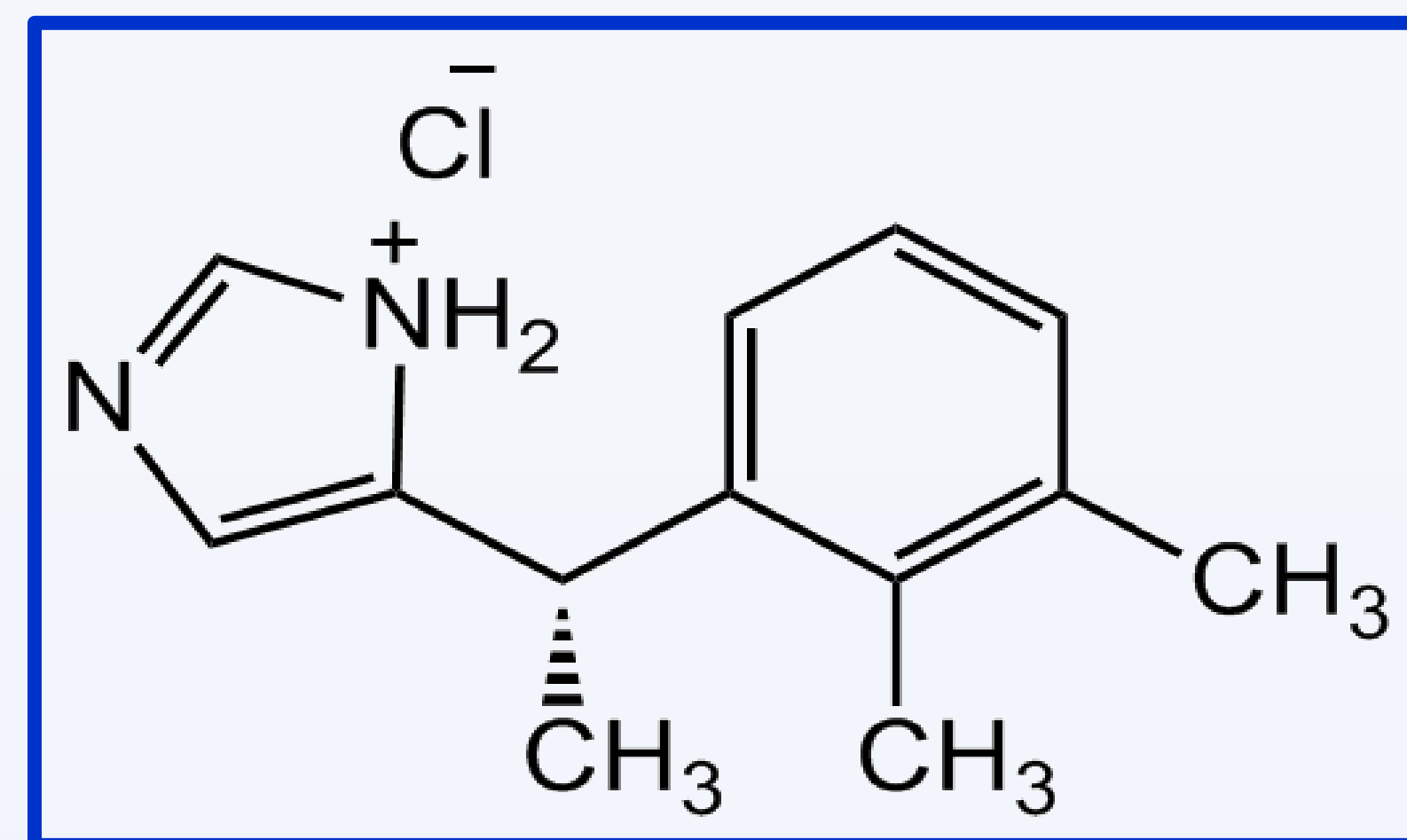


Background

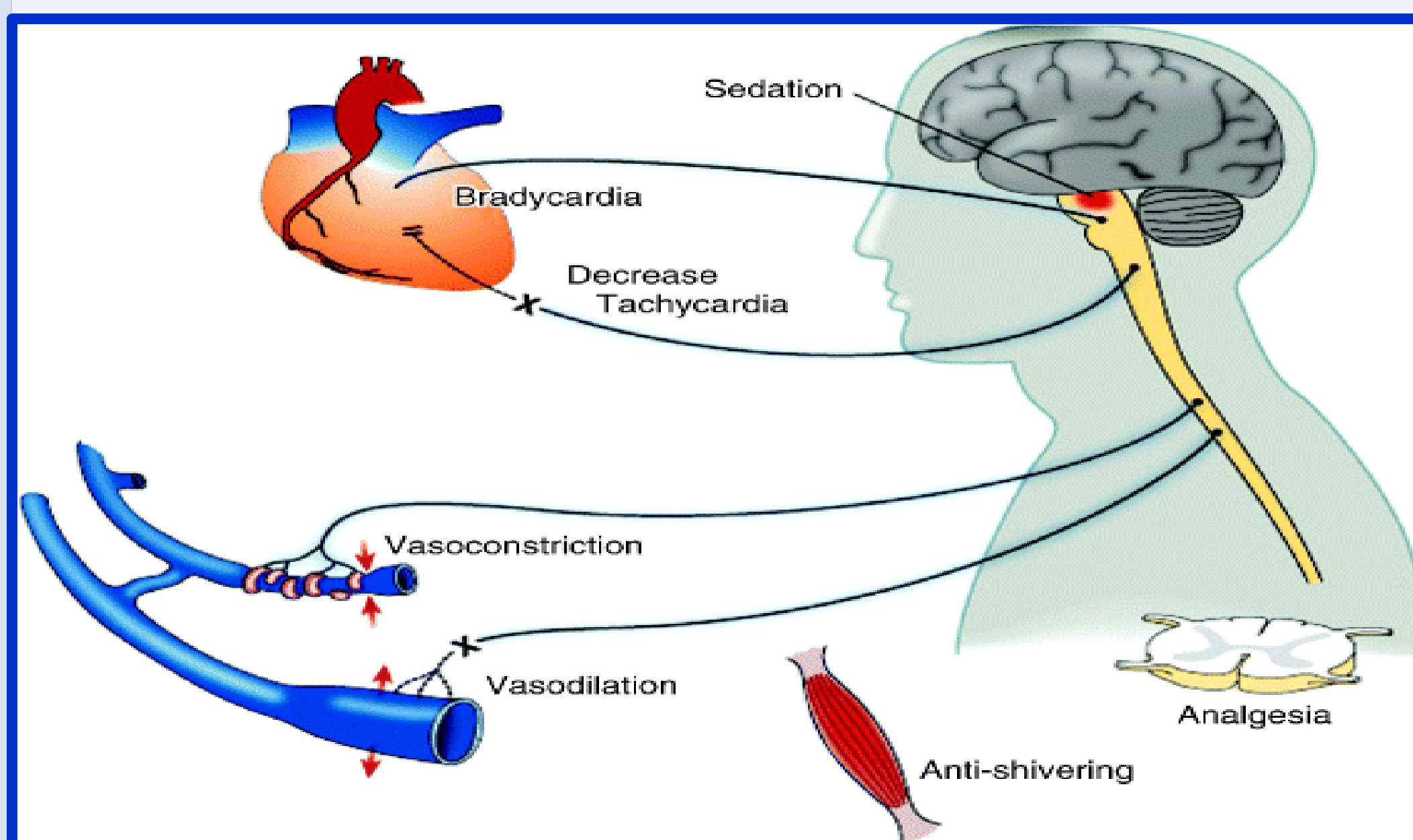
- Anxiety is a common emotion experienced by patients prior to surgery that can create fear and worry¹⁻⁶
- Increased levels of anxiety can affect a patient's hemodynamics, pain perception, and the occurrence of postoperative complications⁵⁻⁸
- Dexmedetomidine is a highly selective alpha 2 adrenergic agonist that acts on the alpha 2 receptors in the locus caeruleus^{4,7}
- Dexmedetomidine has analgesic, sedative, and anxiolytic effects with minimal respiratory depression^{4,7}



<https://www.chemodex.com/products/dexmedetomidine-hydrochloride/>

Clinical Question

Does administering dexmedetomidine preoperatively decrease preoperative anxiety levels, intraoperative opioid requirements, and postoperative respiratory complications in the adult population?



<https://www.cambridge.org/core/books/abs/anesthetic-pharmacology/alpha2agonists-and-other-sedatives-and-amnestics/521749F054512B35A1D68D64F31837E2>

Case Report

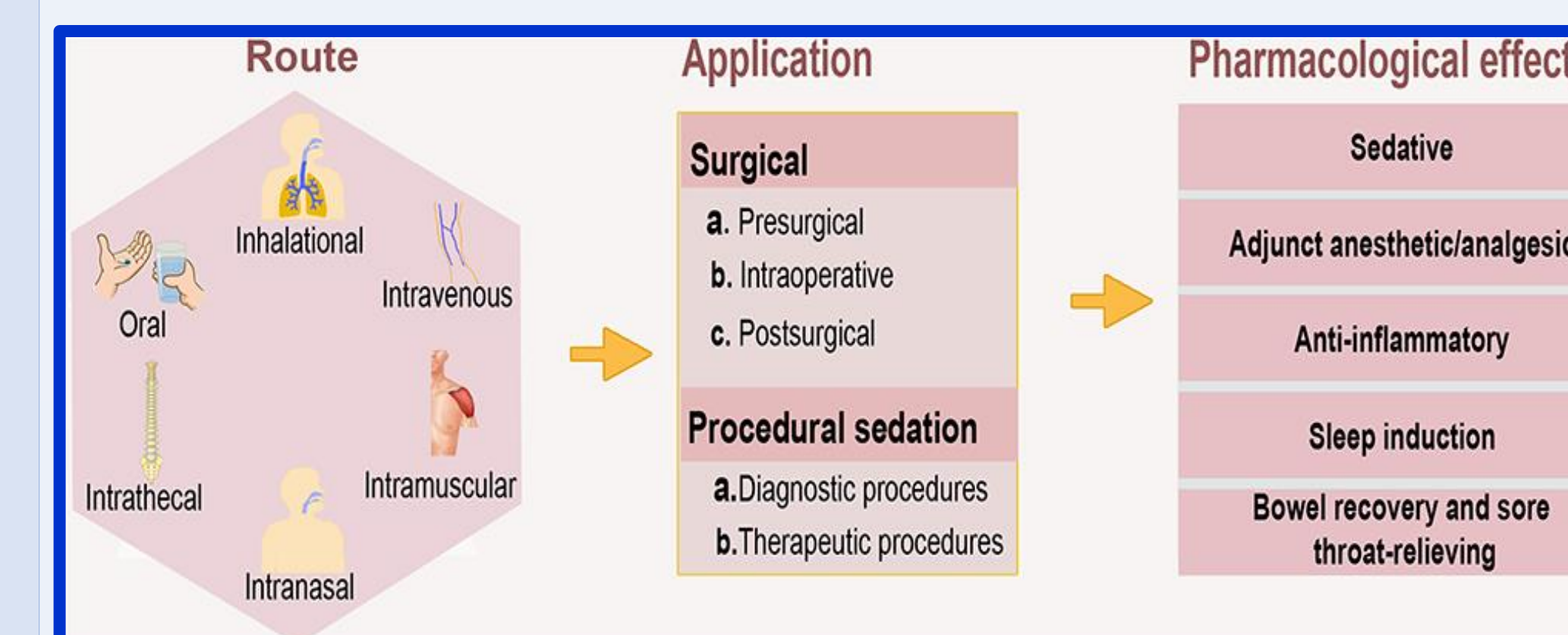
- A 67-year-old presented for an anterior cervical discectomy and fusion of C5-6 and C6-7
- Pertinent medical history included diabetes, gastroesophageal reflux disease (GERD), and anxiety
- The patient did not receive any medication for preoperative anxiety prophylaxis
- Clinical signs of significant levels of anxiety were on identified on arrival to the operating room
- General anesthesia was achieved with lidocaine 80 mg, propofol 150 mg, and rocuronium 50 mg IV
- Sevoflurane was utilized for the maintenance of anesthesia during the case
- An uneventful anesthesia course was seen
- In recovery, the vital signs were stable, no complaints of nausea/vomiting, and pain rated 4/10

Evidence Based Discussion

- There is a significant positive correlation between preoperative anxiety and postoperative pain⁸
- Historically, midazolam, a gamma amino butyric acid (GABA) receptor agonist has been used for the treatment of preoperative anxiety²
- Midazolam creates undesirable effects in the elderly population, such as respiratory depression, and increases the risk of emergence delirium^{7,10}
- Research demonstrates the safety and efficacy of dexmedetomidine for the treatment of preoperative anxiety in the pediatric population^{2,4,6,7,10}
- Dexmedetomidine decreases anxiety during parental separation, postoperative agitation, and analgesia requirements⁴
- There have been reports that dexmedetomidine causes bradycardia and hypotension^{7,9,10}
- Dexmedetomidine decreases intraoperative analgesic and anesthetic requirements and decreases postoperative pain^{5,12}

Translation to Practice

- A research project is proposed and seeks to translate current pediatric evidence on use of dexmedetomidine to the adult surgical patient population
- A multidisciplinary team including anesthesia providers, pharmacists, and pertinent perioperative nurses will be formed
- Candidates for dexmedetomidine should be evaluated based on their preoperative vital signs, co-morbidities, and risk for anxiety development
- The team will develop an anxiety screening tool and an anxiety treatment algorithm to include the use of dexmedetomidine
- An education program will commence and include the use of both the anxiety assessment tool and the anxiety treatment algorithm
- The case study presented here should be utilized during the educational in-service to highlight important concepts for the use of dexmedetomidine
- Appropriate dose, route, and time of administration of dexmedetomidine should be determined
- Outcomes evaluated will include adverse events, pain levels, presence of nausea, vomiting, and pre- and post-procedure anxiety levels, and opioid rescue medications used
- Future research should include RCT to identify specific surgical cases, patient populations, and appropriate dosing regimens for the treatment of preoperative anxiety in the adult surgical population



<https://www.dovepress.com/recent-advances-in-the-clinical-value-and-potential-of-dexmedetomidine-peer-reviewed-fulltext-article-JIR>

Implementation

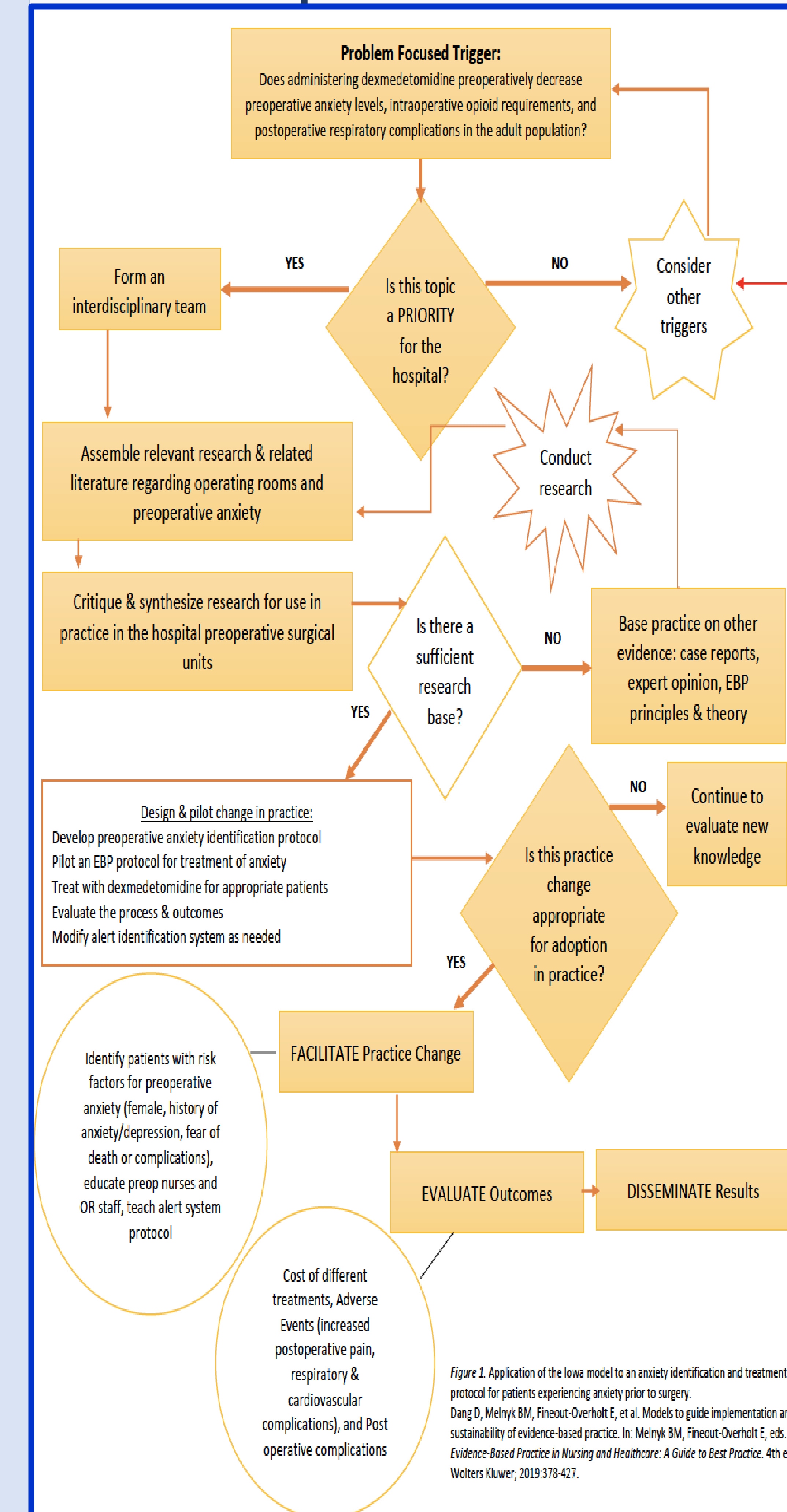
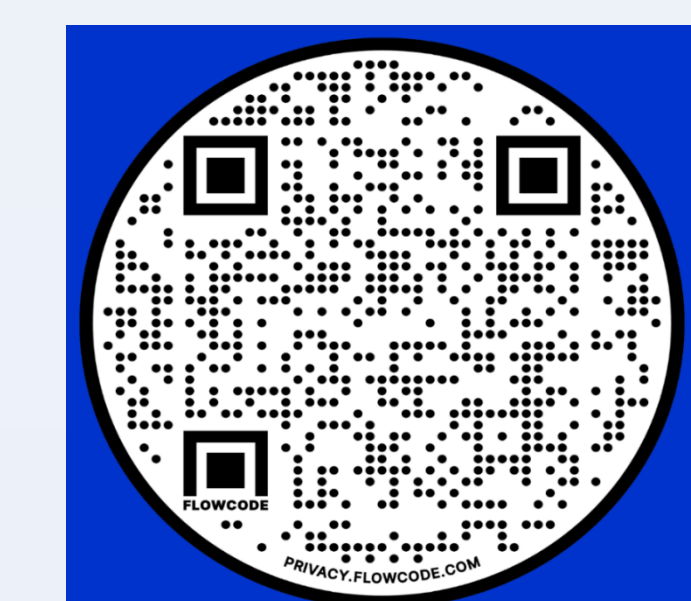


Figure 1. Application of the Iowa model to an anxiety identification and treatment protocol for patients experiencing anxiety prior to surgery. Dang D, Melnyk BM, Fineout-Overholt E, et al. Models to guide implementation and sustainability of evidence-based practice. In: Melnyk BM, Fineout-Overholt E, eds. Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice. 4th ed. Wolters Kluwer; 2019:378-427.

References

Scan this QR code for a complete reference list.



Questions?

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