

PSP Name	Total number of verified uncertainties identified by the PSP	Uncertainty	Explanatory note	Date of the priority setting workshop	Rank of uncertainty at final workshop	Evidence (if available, most relevant systematic reviews)
Anesthesia and Perioperative Care	49	Which factors before, during, and after receiving anesthesia for surgery are most important to improve patient outcomes and satisfaction?	This questions asks about what is important to patients for them to have a good experience and outcome of their anesthesia care. Respondents wanted to know about what matters to patients for their satisfaction.	15-May-19	1	No systematic reviews identified
Anesthesia and Perioperative Care	49	What are the impacts of involving patients in shared decision making about anesthesia and care options before, during, and after surgery?	This question asks about the effects of involving patients in decision making for anesthesia and care around the time of surgery. Respondents wanted to know how patients can be empowered to make decisions about their care and how that can impact outcomes, like safety of care and patient satisfaction. Respondents also wanted to know what choices they	15-May-19	2	No systematic reviews identified
Anesthesia and Perioperative Care	49	What data should be collected from patients about anesthesia care before, during, and after surgery to better understand their outcomes and experiences?	This question asks about what information needs to be collected from patients so that their care can be improved. Respondents wanted to know what type of information needs to be recorded, including characteristics of patients and their outcomes after anesthesia, like pain.	15-May-19	3	No systematic reviews identified
Anesthesia and Perioperative Care	49	How can errors and patient injuries in anesthesia care be prevented?	This question asks about how errors, like giving the wrong medication or the wrong dose, and injuries can be avoided. Respondents wanted to know what strategies could be used, like adding items to a surgical safety checklist.	15-May-19	4	No systematic reviews identified
Anesthesia and Perioperative Care	49	How can outcomes in frail and/or elderly patients be improved after receiving anesthesia for surgery?	This questions asks about how anesthesia can be delivered to frail and/or elderly people to improve their outcomes after surgery. Respondents wanted to know about the negative effects of anesthesia, like memory loss, on frail and/or elderly people and how anesthesia can be improved to minimize negative effects and promote positive effects of surgery.	15-May-19	5	No systematic reviews identified
Anesthesia and Perioperative Care	49	What is the impact of reducing opioids (a type of medication that reduces pain, like morphine) during anesthesia on patient outcomes and opioid dependence after surgery?	This question asks about the impacts of reducing opioids as part of the anesthesia medications that are usually given. Respondents wanted to know whether anesthesiologists should reduce use of opioids during and after surgery and what the impacts for patients are, like reduced opioid dependence, satisfaction, etc.	15-May-19	6	Jessen Lundorf L, Korvenius Nedergaard H, Møller AM. Perioperative dexmedetomidine for acute pain after abdominal surgery in adults. Cochrane Database Syst Rev. 2016 Feb 18;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010358.pub2/abstract
Anesthesia and Perioperative Care	49	What preparation, treatment, or assessment before receiving anesthesia for surgery improves patient outcomes?	This question asks about what can be done before surgery to improve patients' outcomes. Respondents want to know about activities like assessing patients at clinics before surgery and enrolling patients in programs that are designed to increase their fitness before surgery.	15-May-19	7	Egholm JW, Pedersen B, Møller AM, Adami J, Juhl CB, Tønnesen H. Perioperative alcohol cessation intervention for postoperative complications. Cochrane Database Syst Rev. 2018 Nov 8;11. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008343.pub3/full Doleman B, Leonardi-Bee J, Heinink TP, Bhattacharjee D, Lund JN, Williams JP. Pre-emptive and preventive opioids for postoperative pain in adults undergoing all types of surgery. Cochrane Database Syst Rev. 2018 Dec 3;12. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012624.pub2/full
Anesthesia and Perioperative Care	49	How can patients' feedback about their experiences before, during and after surgery be used to improve anesthesia care?	This question asks about how feedback from patients can be used to improve their care. Respondents wanted to know about what kind of feedback patients have and how that feedback can be used.	15-May-19	8	No systematic reviews identified

Anesthesia and Perioperative Care	49	How can anesthesiologists improve pain control after surgery?	This question asks about the role of anesthesiologists in helping to control patients' pain after surgery. Respondents wanted to know what medications, or other strategies, are best for managing pain, including chronic pain, after surgery.	15-May-19	9	<p>Guay J, Parker MJ, Griffiths R, Kopp S. Peripheral nerve blocks for hip fractures. Cochrane Database Syst Rev. 2017 May 11;5. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001159.pub2/full</p> <p>Guay J, Nishimori M, Kopp SL. Epidural local anaesthetics versus opioid-based analgesic regimens for postoperative gastrointestinal paralysis, vomiting and pain after abdominal surgery. Cochrane Database Syst Rev. 2016 Jul 16;7. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001893.pub2/full</p> <p>Pehora C, Pearson AM, Kaushal A, Crawford MW, Johnston B. Dexamethasone as an adjuvant to peripheral nerve block. Cochrane Database Syst Rev. 2017 Nov 9;11. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011770.pub2/full</p>
Anesthesia and Perioperative Care	49	What are the common long-term side effects of anesthesia after surgery?	This question asks about the side effects of anesthesia that occur after the time around surgery. Respondents wanted to know about the much longer-term side effects, like cancer recurrence, chronic pain, and cognitive function.	15-May-19	10	No systematic reviews identified
Anesthesia and Perioperative Care	49	What are the impacts of cannabis on anesthesia care and pain management after surgery?	This question asks about the effects of cannabis on anesthesia care. Respondents wanted to know what to advise patients about using cannabis and how cannabis use affects choice of anesthesia medications.	15-May-19	11	No systematic reviews identified
Anesthesia and Perioperative Care	49	How can anesthesiologists better use current (or create new) monitoring tools during and after surgery to improve patient care and outcomes?	This question asks about what monitoring tools could help improve outcomes. Respondents wanted to know about monitoring factors like fluids, depth of anesthesia, and monitoring after surgery.	15-May-19	12	<p>Punjasawadwong Y, Chau-In W, Laopaiboon M, Punjasawadwong S, Pin-On P. Processed electroencephalogram and evoked potential techniques for amelioration of postoperative delirium and cognitive dysfunction following non-cardiac and non-neurosurgical procedures in adults. Cochrane Database Syst Rev. 2018 May 15;5. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011283.pub2/full</p> <p>Messina AG, Wang M, Ward MJ, Wilker CC, Smith BB, Vezina DP, Pace NL. Anaesthetic interventions for prevention of awareness during surgery. Cochrane Database Syst Rev. 2016 Oct 18;10. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007272.pub2/full</p>

Anesthesia and Perioperative Care	49	What choices in anesthesia care can improve patient outcomes, side effects, and safety?	This questions asks about how the choices that anesthesiologists make affect outcomes. Respondents wanted to know about choices, like different types of medications and different ways of delivering them.	15-May-19	13	<p>Yeung JH, Gates S, Naidu BV, Wilson MJ, Gao Smith F. Paravertebral block versus thoracic epidural for patients undergoing thoracotomy. Cochrane Database Syst Rev. 2016 Feb 21;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009121.pub2/full</p> <p>Euasobhon P, Dej-Arkom S, Siriussawakul A, Muangman S, Sriraj W, Pattanittum P, Lumbiganon P. Lidocaine for reducing propofol-induced pain on induction of anaesthesia in adults. Cochrane Database Syst Rev. 2016 Feb 18;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007874.pub2/full</p> <p>Madrid E, Urrútia G, Roqué i Figuls M, Pardo-Hernandez H, Campos JM, Paniagua P, Maestre L, Alonso-Coello P. Active body surface warming systems for preventing complications caused by inadvertent perioperative hypothermia in adults. Cochrane Database Syst Rev. 2016 Apr 21;4. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009016.pub2/full</p>
Anesthesia and Perioperative Care	49	How well are patients supported after they are discharged from hospitals after anesthetic care?	This question asks about support for patients after they leave the hospital. The respondent wanted to know if patients are well supported, especially with early discharge.	15-May-19	14	No systematic reviews identified
Anesthesia and Perioperative Care	49	Are there specific surgeries for which regional anesthesia blocks (blocking feelings of pain without putting patients to sleep) provide better patient outcomes?	This question asks about the advantages of regional anesthesia for specific types of surgery. Respondents wanted to know if regional types of anesthesia are good for surgeries, like breast or abdominal surgery.	15-May-19	15	<p>Weinstein EJ, Levene JL, Cohen MS, Andreae DA, Chao JY, Johnson M, Hall CB, Andreae MH. Local anaesthetics and regional anaesthesia versus conventional analgesia for preventing persistent postoperative pain in adults and children. Cochrane Database Syst Rev. 2018 Apr 25;4. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007105.pub3/full</p> <p>Guay J, Parker MJ, Gajendragadkar PR, Kopp S. Anaesthesia for hip fracture surgery in adults. Cochrane Database Syst Rev. 2016 Feb 22;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000521.pub3/full</p>
Anesthesia and Perioperative Care	49	How can health in frail and/or elderly patients be enhanced before receiving anesthesia for surgery?	This question asks about how to improve the health of frail and/or elderly patients before they receive anesthesia. Respondents wanted to know what factors should be assessed and whether it is possible to improve health before surgery.	15-May-19	16	No systematic reviews identified
Anesthesia and Perioperative Care	49	What are the impacts of anesthesia team communication on patient outcomes?	This question asks about how communication within the team responsible for a patient impacts the patient. Respondents wanted to know about the impacts of communication within the operating room and when the patient is transferred after surgery.	15-May-19	17	No systematic reviews identified
Anesthesia and Perioperative Care	49	What is the evidence for better patient outcomes for general anesthesia vs. regional anesthesia, and is there any evidence for which type of regional (either spinal or epidural) is better?	This question asks about whether regional or general anesthesia is better for certain patients or surgery types. Respondents wanted to know about outcomes, like pain and narcotic use after surgery.	15-May-19	18	No systematic reviews identified

Anesthesia and Perioperative Care	49	What is the relationship between anesthetic drugs and post-operative cognitive dysfunction and memory loss in patients?	This question asks about how anesthesia medications affect brain function and memory. Respondents wanted to know about the impacts of anesthesia for brain function of people of all ages.	15-May-19	19	Miller D, Lewis SR, Pritchard MW, Schofield-Robinson OJ, Shelton CL, Alderson P, Smith AF. Intravenous versus inhalational maintenance of anaesthesia for postoperative cognitive outcomes in elderly people undergoing non-cardiac surgery. Cochrane Database Syst Rev. 2018 Aug 21;8. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012317.pub2/full
Anesthesia and Perioperative Care	49	What strategies can help reduce delirium after receiving anesthesia for surgery?	This question asks about how to reduce delirium that sometimes happens after patients receive anesthesia. Respondents wanted to know about strategies that would help people of all ages.	15-May-19	20	No systematic reviews identified
Anesthesia and Perioperative Care	49	What is the evidence for eating and drinking before receiving anesthesia for surgery?	This question asks about what and when patients can eat and drink before surgery. Respondents wanted to know about what evidence there is for current practice and what is best for patients' comfort.	15-May-19	21	No systematic reviews identified
Anesthesia and Perioperative Care	49	How does having the same anesthesiologist and care team before, during, and after surgery impact patient outcomes and experience?	This question asks about the impacts of having the same healthcare providers throughout an anesthesia care experience. Respondents wanted to know, for example, about the impacts if the same anesthesiologist at a pre-admission clinic also administers the patient's anesthesia medication.	15-May-19	22	No systematic reviews identified
Anesthesia and Perioperative Care	49	What anesthesiologist factors impact patient outcomes?	This question asks about aspects of the anesthesiologist that might impact patient outcomes. Respondents wanted to know about factors like the anesthesiologist's gender and their skills and experience with specific procedures and patient populations.	15-May-19	23	No systematic reviews identified
Anesthesia and Perioperative Care	49	Does the type or size of hospital impact the quality of anesthesia care?	This question asks about aspects of the hospital that might impact patient outcomes. Respondents wanted to know about factors like the size or location of a hospital.	15-May-19	24	No systematic reviews identified

Uncertainty ID	Uncertainty	Examples of original uncertainties submitted	Evidence (most relevant systematic reviews, if available)	Sources of uncertainty	Number of original uncertainties
car10	Which factors before, during, and after receiving anesthesia for surgery are most important to improve patient outcomes and satisfaction?	<i>Which factors of the perioperative continuum are most important for patients and associated with a higher satisfaction rate? ~ Study the benefits (vs risks) of having a family member/person of patient's choice be with them until they are anesthetized and/or as they are coming awake in PACU.</i>	No systematic reviews identified	healthcare providers, caregivers, patients	6
car21	What are the impacts of involving patients in shared decision making about anesthesia and care options before, during, and after surgery?	<i>What is most important for the patient to discuss with the anesthetist that will help ensure his or her safety during and following anesthesia? ~ When will it be mandatory to have patients share in the decisions at least to the level of true informed consent about the type of anesthesia?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	16
car4	What data should be collected from patients about anesthesia care before, during, and after surgery to better understand their outcomes and experiences?	<i>What is the incidence of things like nausea, pain, sleep disturbances and mobility challenges perioperatively for ALL of our patients? How do we build an inexpensive and reproducible data gathering system that will move us away from the traditional 100 patient trials that have dubious value and that are so hard to extrapolate from. ~ Which indicators would make it possible to evaluate the quality of anesthetic care, both intraoperatively and post-operatively?</i>	No systematic reviews identified	healthcare providers	5
car2	How can errors and patient injuries in anesthesia care be prevented?	<i>How can medication errors (wrong dose, syringe swap) be eliminated? ~ Can targeted risk mitigation pre-operatively decrease the adverse events of surgery?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	9
car1	How can outcomes in frail and/or elderly patients be improved after receiving anesthesia for surgery?	<i>What is the optimal dosing/combination of Anaesthesia meds to minimize post op memory impairment in the elderly? ~ How does anesthesia impact things important to older people like thinking and independence.</i>	No systematic reviews identified	healthcare providers, caregivers, patients	9
car18	What is the impact of reducing opioids (a type of medication that reduces pain, like morphine) during anesthesia on patient outcomes and opioid dependence after surgery?	<i>Is there an association between brief INTRAoperative use of parenteral opioids, and subsequent opioid dependence or addiction? ~ How can we reduce the amount of opioid used for painful surgery without having complications of the other agents available? Are the alternatives worse than the opioids?</i>	Jessen Lundorf L, Korvenius Nedergaard H, Møller AM. Perioperative dexmedetomidine for acute pain after abdominal surgery in adults. Cochrane Database Syst Rev. 2016 Feb 18;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010358.pub2/abstract	healthcare providers, caregivers, patients	14

car17	What preparation, treatment, or assessment before receiving anesthesia for surgery improves patient outcomes?	<i>Can pre-conditioning programs be shown to shorten lengths of stay and improve surgical outcomes in elective surgery? ~ How can a preanesthesia clinic best improve patient outcomes i.e. what specific diseases can we readily modify in a short time span that have a recognizable benefit to patient outcomes</i>	Egholm JW, Pedersen B, Møller AM, Adami J, Juhl CB, Tønnesen H. Perioperative alcohol cessation intervention for postoperative complications. Cochrane Database Syst Rev. 2018 Nov 8;11. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008343.pub3/full Doleman B, Leonardi-Bee J, Heinink TP, Bhattacharjee D, Lund JN, Williams JP. Pre-emptive and preventive opioids for postoperative pain in adults undergoing all types of surgery. Cochrane Database Syst Rev. 2018 Dec 3;12. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012624.pub2/full	healthcare providers, caregivers, patients	38
car20	How can patients' feedback about their experiences before, during and after surgery be used to improve anesthesia care?	<i>How do PTs report this sort of thing to the hospital and what steps can be taken to ensure it does not happen again? (This is the second time at this hospital.) ~ What type of complaints do patients have post operatively</i>	No systematic reviews identified	healthcare providers, caregivers, patients	2
car6	How can anesthesiologists improve pain control after surgery?	<i>How can we adequately control pain post surgery to help patients mobilize faster? ~ How can post op pain be better controlled? Lecturing a pt about opioids after surgery is not appropriate.</i>	Guay J, Parker MJ, Griffiths R, Kopp S. Peripheral nerve blocks for hip fractures. Cochrane Database Syst Rev. 2017 May 11;5. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001159.pub2/full Guay J, Nishimori M, Kopp SL. Epidural local anaesthetics versus opioid-based analgesic regimens for postoperative gastrointestinal paralysis, vomiting and pain after abdominal surgery. Cochrane Database Syst Rev. 2016 Jul 16;7. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001893.pub2/full Pehora C, Pearson AM, Kaushal A, Crawford MW, Johnston B. Dexamethasone as an adjuvant to peripheral nerve block. Cochrane Database Syst Rev. 2017 Nov 9;11. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011770.pub2/full	healthcare providers, caregivers, patients	18
car3	What are the common long-term side effects of anesthesia after surgery?	<i>What are the more extreme side effects (especially long term) associated with anesthesia care? ~ The long-term effects of anesthetics (cancer recurrence, chronic pain, cognitive function)</i>	No systematic reviews identified	healthcare providers, patients	8
car8	What are the impacts of cannabis on anesthesia care and pain management after surgery?	<i>Perioperative implications of cannabis? What should we tell patients perioperatively? ~ Does frequent relatively high daily use of marijuana (>2gram/day) worsen acute postop pain, or decrease effectiveness of analgesics?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	9

<p>car13</p>	<p>How can anesthesiologists better use current (or create new) monitoring tools during and after surgery to improve patient care and outcomes?</p>	<p><i>Can advanced neuromonitoring improve neurocognitive outcome in major surgery? ~ Does the use of intraoperative monitoring to better administer opioids, hypnotics, curare and fluids for titrated anesthesia to patient needs improve postoperative rehabilitation and recovery and reduce postoperative morbidity and mortality, particularly in most fragile populations?</i></p>	<p>Punjasawadwong Y, Chau-In W, Laopaiboon M, Punjasawadwong S, Pin-On P. Processed electroencephalogram and evoked potential techniques for amelioration of postoperative delirium and cognitive dysfunction following non-cardiac and non-neurosurgical procedures in adults. Cochrane Database Syst Rev. 2018 May 15;5. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011283.pub2/full</p> <p>Messina AG, Wang M, Ward MJ, Wilker CC, Smith BB, Vezina DP, Pace NL. Anaesthetic interventions for prevention of awareness during surgery. Cochrane Database Syst Rev. 2016 Oct 18;10. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007272.pub2/full</p>	<p>healthcare providers, caregivers, patients</p>	<p>11</p>
<p>car12</p>	<p>What choices in anesthesia care can improve patient outcomes, side effects, and safety?</p>	<p><i>Are certain drugs more effective at numbing the patient than others? ~ Should we be giving propofol for all colonoscopies for a better patient experience. Compare propofol to other standard types of sedation</i></p>	<p>Yeung JH, Gates S, Naidu BV, Wilson MJ, Gao Smith F. Paravertebral block versus thoracic epidural for patients undergoing thoracotomy. Cochrane Database Syst Rev. 2016 Feb 21;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009121.pub2/full</p> <p>Euasobhon P, Dej-Arkom S, Siriussawakul A, Muangman S, Sriraj W, Pattanittum P, Lumbiganon P. Lidocaine for reducing propofol-induced pain on induction of anaesthesia in adults. Cochrane Database Syst Rev. 2016 Feb 18;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007874.pub2/full</p> <p>Madrid E, Urrútia G, Roqué i Figuls M, Pardo-Hernandez H, Campos JM, Paniagua P, Maestre L, Alonso-Coello P. Active body surface warming systems for preventing complications caused by inadvertent perioperative hypothermia in adults. Cochrane Database Syst Rev. 2016 Apr 21;4. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009016.pub2/full</p>	<p>healthcare providers, caregivers, patients</p>	<p>27</p>
<p>car7</p>	<p>How well are patients supported after they are discharged from hospitals after anesthetic care?</p>	<p><i>How well are we supporting patients after they are discharged from hospitals after surgery, especially in this era of early discharge?</i></p>	<p>No systematic reviews identified</p>	<p>healthcare providers, caregivers, patients</p>	<p>1</p>

car15	Are there specific surgeries for which regional anesthesia blocks (blocking feelings of pain without putting patients to sleep) provide better patient outcomes?	<i>Is there good evidence for regional blocks with simple mastectomies? ~ Should all open abdominal surgery should have an epidural?</i>	Weinstein EJ, Levene JL, Cohen MS, Andreae DA, Chao JY, Johnson M, Hall CB, Andreae MH. Local anaesthetics and regional anaesthesia versus conventional analgesia for preventing persistent postoperative pain in adults and children. Cochrane Database Syst Rev. 2018 Apr 25;4. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007105.pub3/full Guay J, Parker MJ, Gajendragadkar PR, Kopp S. Anaesthesia for hip fracture surgery in adults. Cochrane Database Syst Rev. 2016 Feb 22;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000521.pub3/full	healthcare providers, caregivers, patients	16
car14	How can health in frail and/or elderly patients be enhanced before receiving anesthesia for surgery?	<i>What are the considerations for pre-operative assessment of frail patients? ~ Is it logistically possible to improve patients physical (?mental) condition prior to undergoing an operation? (in our health care system)</i>	No systematic reviews identified	healthcare providers, caregivers, patients	4
car19	What are the impacts of anesthesia team communication on patient outcomes?	<i>Communication outside the OR - how does poor communication impact patient care in PACU, pre-op clinic, etc? ~ Does team communication improve patient outcomes, any particular communication methods or tools, how to implement these successfully.</i>	No systematic reviews identified	healthcare providers, caregivers, patients	6
car9	What is the evidence for better patient outcomes for general anesthesia vs. regional anesthesia, and is there any evidence for which type of regional (either spinal or epidural) is better?	<i>For which patients does regional anesthesia give better outcomes than general anesthesia? ~ Do patients experience a better outcome if they choose general anaesthesia over a regional block, such as an epidural for a hip replacement?</i>	No systematic reviews identified	healthcare providers, patients	11
car16	What is the relationship between anesthetic drugs and post-operative cognitive dysfunction and memory loss in patients?	<i>Is an elderly patient at increased risk of developing dementia due to the use of general anesthetic? ~ What is the relationship between our anesthetic drugs and postoperative cognitive dysfunction and memory loss in all ages of pts.?</i>	Miller D, Lewis SR, Pritchard MW, Schofield-Robinson OJ, Shelton CL, Alderson P, Smith AF. Intravenous versus inhalational maintenance of anaesthesia for postoperative cognitive outcomes in elderly people undergoing non-cardiac surgery. Cochrane Database Syst Rev. 2018 Aug 21;8. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012317.pub2/full	healthcare providers, caregivers, patients	20
car11	What strategies can help reduce delirium after receiving anesthesia for surgery?	<i>What are the various strategies that we can adopt to avoid post operative delirium? ~ What is the correlation between intra-operative hypertension and post-operative delirium.</i>	No systematic reviews identified	healthcare providers, caregivers, patients	8
car23	What is the evidence for eating and drinking before receiving anesthesia for surgery?	<i>Why are all patients told to fast at midnight before having surgery even though the surgery time may be quite different such at 8am or 1pm? What is the minimum amount of time to fast pre general anesthesia? ~ Is carbohydrate loading preoperatively actually of benefit for all patients, or just those having extended periods of fasting postoperatively?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	5

car24	How does having the same anesthesiologist and care team before, during, and after surgery impact patient outcomes and experience?	<i>Is there an impact on outcomes depending on whether or not the same anesthesiologist does pre-op assessment and provides the anesthetic? ~ Why do anesthesiologists not come by to see you after your surgery to ask about your experience? Doctors do rounds but you never see your Anesthetist again.</i>	No systematic reviews identified	healthcare providers, caregivers, patients	12
car5	What anesthesiologist factors impact patient outcomes?	<i>Are there differences in patient outcomes based on anesthesiologist gender? ~ What should be the minimum exposure to the pediatric anesthetic clientele to allow for the maintenance of skills?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	8
car22	Does the type or size of hospital impact the quality of anesthesia care?	<i>How do tertiary care hospitals and community hospitals differ in their ability to provide safe, effective and efficient anesthetic care for routine surgery. Should routine minor surgery be done in tertiary care hospitals? ~ How do outcomes for a particular procedure compare between hospitals (smaller centres versus larger academic centres, for instance)?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	2
car25	What are the impacts of anesthesia on the developing brain and cognitive function?	<i>Effect of general anesthesia and repeated general anesthesia on the developing brain. ~ The safest general anesthesia for the developing brain</i>	No systematic reviews identified	healthcare providers, caregivers, patients	6
car26	Does individualizing anesthesia care improve patient outcomes?	<i>How can we individualize post op pain prescriptions, as opposed to protocols ~ How to personalize the anesthesia according to the patient's antecedents in order to limit the side effects</i>	Chhabra A, Subramaniam R, Srivastava A, Prabhakar H, Kalaivani M, Paranjape S. Spectral entropy monitoring for adults and children undergoing general anaesthesia. Cochrane Database Syst Rev. 2016 Mar 14;3. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010135.pub2/full	healthcare providers, caregivers, patients	12
car27	What are the impacts of repeated exposure to anesthesia medications?	<i>Are there long term affects from being 'put out' multiple times? ~ Is having a longer general anesthetic and completing multiple procedures safer for patients than having two separate general anesthetics? (eg. A pediatric patient having a sedated MRI prior to an unrelated surgery, instead of at separate appointments.)</i>	No systematic reviews identified	caregivers, patients	3
car28	What could be changed in the role of the anesthesiologist that would improve quality of care?	<i>Will involvement of anesthesiologist in postoperative care improve postoperative outcomes and failure to rescue rates ~ What are the small things that anesthesiologists can do to improve the perioperative experience for patients?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	26
car29	How can technology be used to improve anesthetic care before, during, and after surgery?	<i>How can we leverage smartphones to provide better postoperative pain and symptom management for day case surgery? ~ Can we improve upon US technology to be useful in the super morbidly obese patients?</i>	Guay J, Suresh S, Kopp S. The use of ultrasound guidance for perioperative neuraxial and peripheral nerve blocks in children. Cochrane Database Syst Rev. 2016 Feb 19;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011436.pub2/full	healthcare providers, caregivers, patients	13
car30	How can clinical assessments and screening tools be used in anesthesia care to improve patient outcomes?	<i>How can we best obtain information about how patients recover from anesthesia/surgery and their complications and the benefits of the surgery? ~ Will there soon be a blood test to confirm if someone has malignant hyperthermia or is a muscle biopsy still required?</i>	Roth D, Pace NL, Lee A, Hovhannisyann K, Warenits AM, Arrich J, Herkner H. Airway physical examination tests for detection of difficult airway management in apparently normal adult patients. Cochrane Database Syst Rev. 2018 May 15;5. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008874.pub2/full	healthcare providers, caregivers, patients	9

car31	What strategies can reduce anxiety and stress for adults before anesthetic care for surgery?	<i>Surgery is very stressful for patients who live with serious disabling diseases, how can we help patients with anxiety of surgery? ~ What is the effect of psychosocial interventions on patient quality of experience before, during and after surgery?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	8
car32	What are the causes and consequences of patients experiencing awareness under anesthesia during surgery?	<i>Why do some pts experience awareness under anesthesia? ~ what is the frequency of people who suffer from anaesthesia-awareness? how preventable is it and what are the impacts on individuals and the health system?</i>	Chhabra A, Subramaniam R, Srivastava A, Prabhakar H, Kalaivani M, Paranjape S. Spectral entropy monitoring for adults and children undergoing general anaesthesia. Cochrane Database Syst Rev. 2016 Mar 14;3. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010135.pub2/full Messina AG, Wang M, Ward MJ, Wilker CC, Smith BB, Vezina DP, Pace NL. Anaesthetic interventions for prevention of awareness during surgery. Cochrane Database Syst Rev. 2016 Oct 18;10. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007272.pub2/full Hounsome J, Nicholson A, Greenhalgh J, Cook TM, Smith AF, Lewis SR. Nitrous oxide-based versus nitrous oxide-free general anaesthesia and accidental awareness during general anaesthesia in surgical patients. Cochrane Database Syst Rev. 2016 Aug 10;(8). https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011052.pub2/full	healthcare providers, caregivers, patients	3
car33	What psychological interventions can reduce pain after anesthetic care for surgery?	<i>Does setting expectations pre-operatively in terms of post-operative pain influence how patients manage post-operative pain? More broadly, what pre-operative psychologic interventions influence post-operative pain control. ~ Does a caring and relaxed pre-op experience lead to reduced perception of pain post op?</i>	Powell R, Scott NW, Manyande A, Bruce J, Vögele C, Byrne-Davis LM, Unsworth M, Osmer C, Johnston M. Psychological preparation and postoperative outcomes for adults undergoing surgery under general anaesthesia. Cochrane Database Syst Rev. 2016 May 26;(5). https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008646.pub2/full	healthcare providers, caregivers, patients	3
car34	What are the impacts of Anesthesia Assistants on anesthesia care?	<i>Do anesthesia assistants improve efficiency, safety and cost-effectiveness of perioperative care? ~ Can anesthesia be improved and made more efficient by having more anesthesia assistants?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	5

car35	What constitutes best practice for premature babies and pediatric patients receiving anesthesia care?	<i>What is the best way to know if you have administered the right amount of anesthesia to a premature baby so that you don't give too little or too much? ~ Age at which gas induction is no longer suitable.</i>	Abdelgadir IS, Phillips RS, Singh D, Moncreiff MP, Lumsden JL. Videolaryngoscopy versus direct laryngoscopy for tracheal intubation in children (excluding neonates). Cochrane Database Syst Rev. 2017 May 24;5. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011413.pub2/full Guay J, Suresh S, Kopp S. The use of ultrasound guidance for perioperative neuraxial and peripheral nerve blocks in children. Cochrane Database Syst Rev. 2016 Feb 19;2. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011436.pub2/full	healthcare providers, caregivers, patients	7
car36	How can patient understanding of the role of the anesthesiologist be improved?	<i>Do patients understand the role of an anesthesiologist and would this understanding change their perioperative experience? ~ Do patients in Canada understand (or care) that their anesthesia care (anesthetic) is provided by an MD with additional years of training in Anesthesiology? (Whether FRCPC or FPA?)</i>	No systematic reviews identified	healthcare providers, caregivers, patients	4
car37	In what ways can interdisciplinary care (e.g. nurses, pharmacists, anesthesiologists) impact outcomes before, during, and after surgery?	<i>Study impact of interdisciplinary approach to the delivery of acute pain care and acute pain clinics ~ Are there too many roles in the OR and does this lead to confusion or inefficiency? E.g. Anesthesiologists, surgeons, surgical assistants, advanced practice nurses, anesthesia assistants, nurse practitioners, physician assistants, trainees, etc.</i>	No systematic reviews identified	healthcare providers, caregivers	4
car38	What are the common short-term side-effects of anesthesia after surgery?	<i>What problems do patients encounter after day surgery related to anesthesia? ~ I get a cold feeling for about a day is that common ?</i>	Polderman JA, Farhang-Razi V, Van Dieren S, Kranke P, DeVries JH, Hollmann MW, Preckel B, Hermanides J. Adverse side effects of dexamethasone in surgical patients. Cochrane Database Syst Rev. 2018 Aug 28;8. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011940.pub2/full Hristovska AM, Duch P, Allingstrup M, Afshari A. Efficacy and safety of sugammadex versus neostigmine in reversing neuromuscular blockade in adults. Cochrane Database Syst Rev. 2017 Aug 14;8. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012763/full Madrid E, Urrútia G, Roqué i Figuls M, Pardo-Hernandez H, Campos JM, Paniagua P, Maestre L, Alonso-Coello P. Active body surface warming systems for preventing complications caused by inadvertent perioperative hypothermia in adults. Cochrane Database Syst Rev. 2016 Apr 21;4. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009016.pub2/full	healthcare providers, caregivers, patients	8

car39	What are the best approaches to anesthesia care for patients with specific medical conditions?	<i>Patients on chemotherapy going for surgery (related or unrelated to the cancer) is there a protocol to optimize their condition and manage their drug dosage perioperatively ~ The effect of anesthesia on the concussed brain - should we delay and for how long?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	10
car40	How can anesthesia care of people from vulnerable populations, including those with cognitive disabilities, be improved?	<i>I would like a separate standard of perioperative care developed for individuals with undergoing surgery who have cognitive impairments and/or communication difficulties. In this instance, if there is a family caregiver who knows the patient well, I would like to see a standard of care that includes the caregiver in perioperative care. ~ Are there differences in perioperative outcomes for patients from vulnerable populations (elderly, frail, chronic disease, homeless, low SES, indigenous, new Canadians) recovering from surgery?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	11
car41	What are the best practices in anesthesia care for patients with obstructive sleep apnea?	<i>Is an epidural the safest way for people with sleep Apnea? ~ Does the type of surgery matter when making decisions on management of patients with OSA?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	7
car42	Does improving operating room use and efficiency impact patient experience of anesthesia care?	<i>How do we optimize patient flow in the OR so we can increase our case through put and decrease wait lists ~ There seems to be a large variation for 'Anesthesia Controlled Time' even for identical surgical cases and similar patients. How can benchmarking and accountability be used to make the standard deviation shorter and as such improve OR utilization.</i>	No systematic reviews identified	healthcare providers, caregivers, patients	4
car43	How can anesthesiologists apply research results to improve patient care?	<i>How can we figure out what NOT to do in the perioperative period because it is ineffective or costly without benefit. Choosing wisely is a start but how do we implement and monitor these types of knowledge translation problems? ~ How effective are our efforts at knowledge translation? How quickly and efficiently do we institute a clinical practice well documented in the literature?</i>	No systematic reviews identified	healthcare providers, caregivers, patients	10
car44	How can we better predict and care for nausea after anesthesia?	<i>Does giving anti nausea medications to patients to adequately control vomiting post surgery help patients recover faster? ~ What causes certain people to experience severe nausea after surgery from the anesthesia ?</i>	Hines S, Steels E, Chang A, Gibbons K. Aromatherapy for treatment of postoperative nausea and vomiting. Cochrane Database Syst Rev. 2018 Mar 10;3. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007598.pub3/full Guay J, Nishimori M, Kopp SL. Epidural local anaesthetics versus opioid-based analgesic regimens for postoperative gastrointestinal paralysis, vomiting and pain after abdominal surgery. Cochrane Database Syst Rev. 2016 Jul 16;7. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001893.pub2/full	healthcare providers, caregivers, patients	10

car45	What are the advantages and disadvantages of using anesthesia gases in routine anesthesia care?	<i>Should we were to move away from vapour entirely? Better for environment? Less deliriogetic? Forces us to use more LA techniques + TIVA? Cheaper given no anaesthesia machines? ~ Despite compelling evidence that desflurane is more environmentally damaging than sevo many Anesthesiologists continue to use desflurane. Why?</i>	Messina AG, Wang M, Ward MJ, Wilker CC, Smith BB, Vezina DP, Pace NL. Anaesthetic interventions for prevention of awareness during surgery. Cochrane Database Syst Rev. 2016 Oct 18;10. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007272.pub2/full	healthcare providers	5
car46	How can anesthesia care reduce cardiovascular complications of surgery?	<i>is regional anesthesia less harmful than general anesthesia when assessing cardiovascular risk and cognitive risk ~ How can we prevent cardiovascular complications of surgery</i>	Duncan D, Sankar A, Beattie WS, Wijeyesundera DN. Alpha-2 adrenergic agonists for the prevention of cardiac complications among adults undergoing surgery. Cochrane Database Syst Rev. 2018 Mar 6;3. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004126.pub3/full Guay J, Kopp S. Epidural analgesia for adults undergoing cardiac surgery with or without cardiopulmonary bypass. Cochrane Database Syst Rev. 2019 Mar 1;3. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006715.pub3/full	healthcare providers, patients	9
car47	What strategies can reduce anxiety and stress for children and parents before anesthetic care for surgery?	<i>Does parental presence during induction reduce anxiety in pediatric patients. Or patients with a cognitive disability? ~ Any research question surrounding parental presence during induction of anesthesia either by mask or IV.</i>	No systematic reviews identified	healthcare providers, caregivers	3
car48	What strategies can improve patient understanding about the effects and risks of anesthesia?	<i>Would surgeons be helped with written documents of risks of different types of anaesthesia to give patients pre-op? We give vague risks in the office and the patient is really not in a great state to give consent the day of surgery, especially if there are options for sedation/regional/general. ~ Why don't patients get more information about the specifics of the anaesthesia before the operation? I realize some people don't want to know there are many people very engaged in their care who do want the details</i>	No systematic reviews identified	healthcare providers, caregivers, patients	45
car49	What are the impacts of regional anesthesia and pain management during labour and caesarean delivery?	<i>More breastfeeding and anesthesia studies, in general. Does cesarean delivery really decrease the time for milk onset vs a vaginal delivery, for instance? ~ For women in labour, is there an association between (a) their 'subjective' report of feeling in control of their pain, and (b) either their obstetrical outcome (e.g. mode of delivery) or their psychological outcome (e.g. rate of PTSD, post-partum anxiety & depression)?</i>	Sng BL, Zeng Y, de Souza NNA, Leong WL, Oh TT, Siddiqui FJ, Assam PN, Han NR, Chan ES, Sia AT. Automated mandatory bolus versus basal infusion for maintenance of epidural analgesia in labour. Cochrane Database Syst Rev. 2018 May 17;5. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011344.pub2/full	healthcare providers, caregivers, patients	16