

Key targets for activating anaesthesia shared decision-making: a mixed methods systematic review

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Review Article

Key targets for activating anaesthesia shared decision-making: a mixed methods systematic review

Adam Madhani,  Nicolas Suarez  and Katherine A. Finlay 

Summary

Introduction Shared decision-making in anaesthesia is widely endorsed yet delivered inconsistently. This mixed methods systematic review aimed to identify primary activation targets for enhancing shared decision-making in peri-operative anaesthesia practice.

Methods Databases were searched for qualitative, quantitative and mixed methods studies employing shared decision-making in adult anaesthesia. Data were narratively synthesised, appraised with the Mixed Method Appraisal Tool, and mapped to the Theoretical Domains Framework to identify behavioural determinants. Findings were grouped at clinician, patient and system levels to derive shared decision-making activation targets.

Results Eleven studies met inclusion criteria. Synthesis yielded nine activation targets across levels. Clinician-focused priorities included: training in shared decision-making communication with rehearsal and feedback; structured elicitation of patient preferences using open questions and direct invitations; and avoiding assumptions about patient capacity during shared decision-making discussions. Patient-level priorities required making anaesthesia choices explicit; providing anxiety-reducing explanations; and ensuring accessible educational materials. Scheduling shared decision-making earlier in the care pathway, protecting consultation time and offering decision support before appointments emerged as system-level priorities, alongside embedding shared decision-making prompts within clinic templates to support workflow integration.

Discussion This review identifies that shared decision-making in anaesthesia requires co-ordinated action on key activation targets. To embed shared decision-making into routine clinical workflows, earlier consultation scheduling, protected time for anaesthesia discussions and the use of standardised shared decision-making tools with accessible patient information are priority components for service enhancement. The theoretically-informed findings offer a practical route moving anaesthesia practice away from tokenistic shared decision-making endorsement, towards streamlined, patient-centred shared decision-making delivery in anaesthetic care.

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Introduction

Although anaesthesia has become significantly safer in recent decades, patients are rarely involved in decisions about how it is delivered [1, 2]. Postoperative discomfort, including symptoms such as pain or drowsiness, is reported frequently by surgical patients and serious intra-operative complications occur in approximately one in 18 patients [3]. While safety initiatives have reduced anaesthetic risk [1], the processes by which patients engage in peri-operative anaesthesia decisions have received less attention [2, 4]. Anaesthetic consultations typically take place shortly before surgery, when factors such as patient anxiety, cognitive load and clinician time pressures may hinder fuller engagement in discussion [5–7]. These compressed encounters highlight the need for approaches that enable meaningful patient participation within realistic time frames [4, 8]. Shared decision-making provides one such approach, offering a framework for improving these interactions.

Shared decision-making is a collaborative process in which clinicians and patients make decisions together, integrating clinical evidence with patient preferences [9–11]. It is inherently dialogic, reflecting interaction and co-construction of meaning between clinician and patient [12]. Conceptually, shared decision-making extends beyond informed consent to support mutual deliberation, respect for autonomy and more participatory approaches [2, 13, 14]. Within anaesthesia, decisions are often preference-sensitive, as more than one reasonable option may exist, including choices about techniques, sedation and postoperative pain management [2, 6, 11]. Evidence shows that meaningful involvement enhances preparedness, reduces anxiety and fosters satisfaction and trust between patients and clinicians [4, 6, 15–21], while also increasing patients' knowledge and decision quality [22–24].

The emphasis on patient-reported experience and outcome measures positions shared decision-making as a key mechanism for achieving high-quality, person-centred anaesthetic care [8, 16]. Despite strong policy endorsement [8, 20], shared decision-making is practised inconsistently in anaesthesia. Consultations are frequently clinician-led, constrained by time and organisational pressures, and focused on technical details rather than shared discussion [4, 7, 17, 25]. Such limited shared decision-making can reduce patients' sense of involvement in their care [16, 24]. For clinicians, it may contribute to communication breakdowns, repeated consultations and increased risk of complaints or litigation [26, 27], reinforcing the importance of embedding shared decision-making as a marker of ethical, high-quality anaesthetic care.

Previous systematic reviews have examined barriers and facilitators to shared decision-making across healthcare [7, 25, 28, 29]. However, this has not been done within anaesthesia specifically, where the evidence base is small. Anaesthesia presents unique challenges and improving implementation requires understanding how behavioural and contextual factors influence shared decision-making in anaesthetic care. Current evidence in anaesthesia shared decision-making is typically qualitative and observational, which can reveal critical behavioural, contextual and organisational influences often missed by randomised control trials [30, 31]. Such designs can support interpretation of clinical communication patterns, patient experiences and system-level constraints within real-world practice [32–34]. The Theoretical Domains Framework provides a structured lens to translate contextual influences into behavioural mechanisms [35–37], deepening understanding of co-constructed interactions [12].

This mixed methods systematic review aimed to: identify reported barriers and facilitators to shared decision-making in anaesthesia across patient, provider and organisational levels; synthesise these findings using a theoretical framework; and generate theory-informed insights to guide future research, training and policy aimed at embedding shared decision-making in routine anaesthetic care.

Methods

Studies were eligible if they explored or evaluated shared decision-making within anaesthesia. Primary research employing qualitative, quantitative or mixed methods designs were included. Eligible participants were adult patients involved in peri-operative decision-making and healthcare professionals involved in anaesthesia planning or delivery. Studies had to report barriers or facilitators to shared decision-making or evaluate shared decision-making as a primary target or process. Barriers were defined as factors hindering shared decision-making, and facilitators as those enabling it [38]. These influences can stem from individual, organisational or broader social contexts [39, 40]. Studies were not included if they addressed surgical decisions without anaesthesia; focused solely on consent; centred on caregiver or family perspectives rather than patients' own involvement in peri-operative decision-making; lacked primary data or methodological detail; or were opinion-based, editorials, commentaries or reviews.

Shared decision-making was defined as a collaborative process integrating clinical evidence with patient values and preferences [18, 19, 21]. Studies were included if they

explored shared decision-making behaviours; perceptions; interventions; or clinician–patient interactions involving deliberation and mutual agreement beyond information or consent.

Following PRISMA 2020 guidance [41], PubMed, PsycINFO, CINAHL, Scopus, Web of Science and the Cochrane Library were searched from inception to April 2025 with no language limits. The Education Resources Information Center and grey-literature sources (OpenGrey, ISRCTN Registry and [ClinicalTrials.gov](https://www.clinicaltrials.gov)) were also searched. Backward citation searching (reference list screening) and forward citation tracking (via Scopus and Web of Science) were conducted to identify any additional studies missed by the primary search.

The search strategy combined controlled vocabulary (e.g. MeSH, Emtree) and free-text keywords spanning three core domains: shared decision-making (e.g. ‘shared decision-making’, ‘patient participation’, ‘patient engagement’, ‘decision involvement’); anaesthesia (e.g. ‘anaesthesia’, ‘regional anaesthesia’, ‘general anaesthesia’, ‘local anaesthesia’, ‘spinal sedation’, ‘perioperative care’); and implementation (e.g. ‘barrier*’, ‘facilitat*’, ‘implement*’, ‘challenge*’, ‘adopt*’).

To maximise sensitivity and specificity, the strategy was developed iteratively, with two search string refinements, encompassing retrieval of key sentinel studies known a priori. When any were not captured, search strings were adjusted to include alternative terminology across the three conceptual domains. Full database-specific search strings are in online Supporting Information Appendix S1 and the study selection process is shown in Figure 1.

The first author (AM) screened all records using Rayyan [42], with 20% screened independently by a second reviewer (KF), to balance rigour and feasibility [43–46]. The quality of each included study was assessed using the Mixed Methods Appraisal Tool [47], which assesses qualitative, quantitative (randomised, non-randomised, descriptive) and mixed methods designs within a unified framework. This tool was selected because it enables consistent appraisal across diverse study designs while maintaining comparability within a single review process, and it is used widely in mixed methods systematic reviews [47–49].

Each study was assessed independently by two reviewers, with discrepancies resolved through discussion. Criteria were rated as ‘Yes’, ‘No’ or ‘Cannot tell’. In line with guidance, no aggregate scores were calculated to stratify studies as high or low quality; instead, response patterns informed interpretation of methodological strengths and limitations [47]. Risk of bias was considered through qualitative appraisal of methodological rigour, recognising

that bias manifests differently across study designs. No studies were omitted based on quality, ensuring comprehensive coverage across contexts and methods [50].

A narrative synthesis approach was used [32]. Meta-analysis was not conducted due to heterogeneity in study designs, outcomes and measurement tools. Instead, a behaviourally informed synthesis was conducted using the Theoretical Domains Framework, which provides a structured, theory-driven approach to implementation analysis [35–37, 51]. The framework integrates constructs from 33 behaviour change theories into 14 domains that explain determinants of healthcare behaviour [35]. This approach provided a structured, theory-driven basis for coding barriers and facilitators systematically by linking contextual influences to behavioural mechanisms [35–37, 51]. In anaesthesia, this highlights how workflows, roles and team dynamics shape peri-operative decision-making.

Qualitative data were analysed thematically using a hybrid inductive–deductive approach [52]. Inductive analysis began with line-by-line coding of the extracted qualitative results, generating a set of data-driven codes [52]. Initial codes were reviewed, compared and clustered to reflect semantic and conceptual similarity, which supported the development of preliminary and then higher order themes. Coding and theme development were iterative, undertaken in close consultation with the full text manuscripts and extracted qualitative text to ensure that interpretations remained grounded in the primary studies. An analytic memo log was used to document decisions and reflections throughout the process, enhancing transparency and reflexivity. These themes were then deductively mapped onto the Theoretical Domains Framework, using the framework to structure interpretation and support theory-informed understanding of barriers and facilitators. Extracted material was reviewed independently (KF) to support consistency in interpretation. Quantitative findings were narratively integrated, focusing on psychosocial predictors and implementation outcomes, and synthesised across patient, clinician and organisational levels [53, 54]. This multi-level approach captured how individual, team and system factors interact to shape shared decision-making in anaesthesia and was interpreted using the individual, social and contextual domains of the Theoretical Domain Framework [36, 37].

This synthesis adopted a pragmatic orientation, integrating postpositivist quantitative findings (acknowledging real effects within context) with constructivist qualitative insights (recognising meaning as experience-based) [54, 55]. The behavioural lens guided

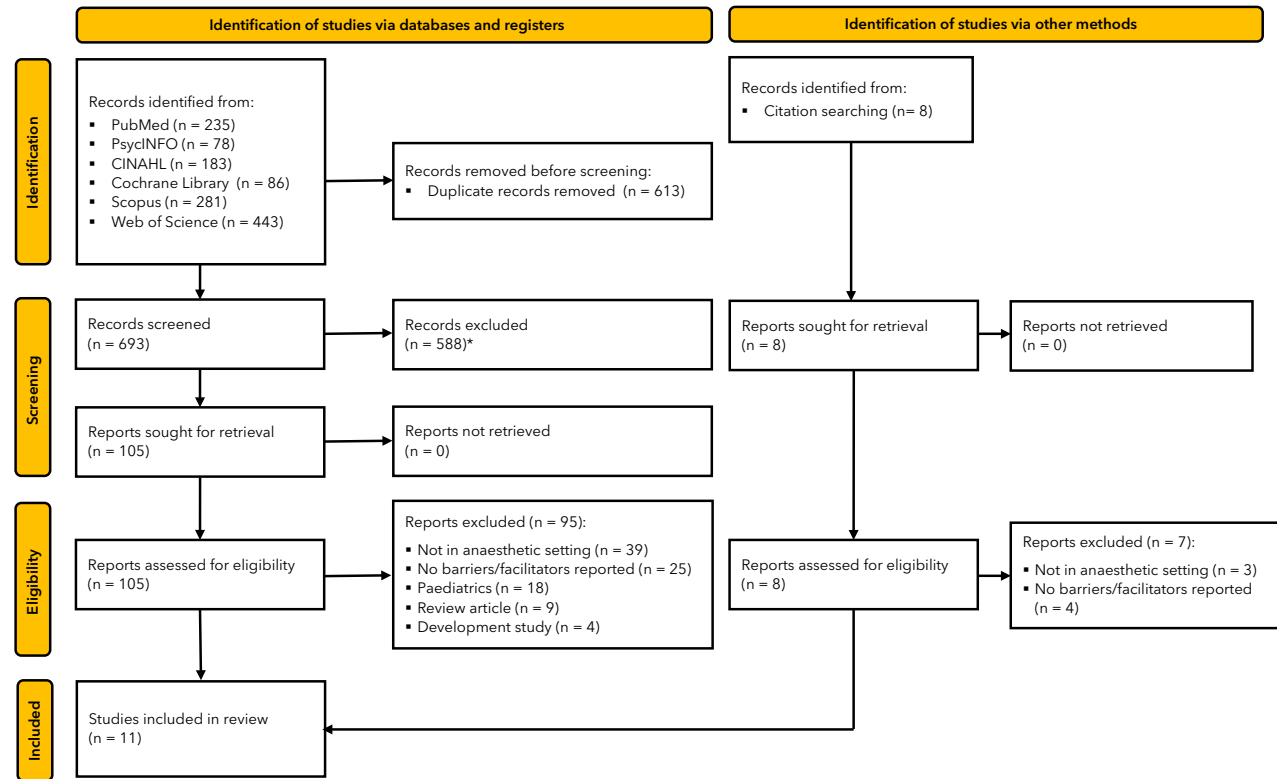


Figure 1 Study flow diagram. *Records were excluded during title and abstract screening as they did not meet the inclusion criteria, most commonly because they did not address shared decision-making in anaesthesia or peri-operative care.

interpretation and mapping of determinants across study types [35]. This stance ensured a theory-informed synthesis focused on practical implementation rather than philosophical alignment [56, 57]. The review team brought complementary expertise: AM (trainee health psychologist) training in behaviour change theory and mixed methods research; KF (chartered health psychologist) with advanced training in behavioural science and mixed methods research; and NS (consultant anaesthetist) providing clinical insight into practice. Reflexivity was maintained through ongoing team discussions and consensus review to consider how disciplinary perspectives shaped interpretation [58, 59].

Results

The database search identified 1306 records. Forward citation tracking identified eight additional records, one of which met eligibility criteria. Grey-literature searches yielded no records. The Education Resources Information Center yielded only education-focused anaesthesia records unrelated to decision-making and therefore contributed no additional eligible studies. After screening and full-text review, 11 studies were included in the final synthesis

[60–70]. Included studies were published between 2005 and 2025 and involved data from over 3000 patients and healthcare professionals. Studies were conducted across five countries: USA (n = 6); Switzerland (n = 2); and the UK, Netherlands and Singapore (n = 1 each).

Seven studies were quantitative [60, 62, 65, 66, 68–70], three qualitative [63, 64, 67] and one mixed methods [61]. Quantitative studies used cross-sectional surveys or structured ratings of real pre-operative consultations primarily, while qualitative studies drew on semi-structured interviews or focused ethnographic observations with iterative coding. The mixed methods study combined quantitative survey ratings with qualitative free-text feedback from clinicians attending workshops. Two studies [63, 66] form part of a broader programme of research culminating in a stepped-wedge cluster randomised trial [71] evaluating the clinical implementation of the *My Anaesthesia Choice* decision aid. Study characteristics are summarised in Table 1 and full study characteristics are in online Supporting Information Table S1.

Six studies used at least one validated decision-making or communication instrument. Common measures included the Control Preferences Scale (n = 3); CollaboRATE (n = 2);

Table 1 Summary of included studies on shared decision-making in anaesthesia.

Study (country)	Design/participants	Focus/objective	Key findings (summary)
Ankuda et al. [60] (USA)	Cross-sectional survey; patients in pre-operative tertiary clinic (n = 1034)	Examined deficits in shared decision-making and informed-consent processes and advance care planning before elective surgery	13% had critical consent deficits; patients who did not speak English or with lower education had greater risk; low advance-directive completion.
Bougeard et al. [61] (UK)	Mixed methods (Likert survey + thematic analysis); clinicians (mainly anaesthetists) across nine workshops (n = 179)	Adapted and evaluated shared decision-making training for peri-operative staff	↑ confidence and skills post-workshop; role-play and video demonstrations most valued.
Flierler et al. [62] (Switzerland)	Quantitative survey; patient–anaesthetist pairs (n = 197)	Assessed preference–experience congruence and impact on satisfaction	94% desired shared decision-making; 62% received preferred involvement; under-involvement ↓ satisfaction; older age ↑ satisfaction.
Goldstein et al. [63] (USA)	Qualitative interviews; (n = 12 clinicians + 12 patients/caregivers) (hip fracture surgery)	Explored barriers / facilitators and refined shared decision-making conversation aid	Broad support for shared decision-making; barriers = time, culture, assumptions; aid helped address barriers.
Graff et al. [64] (USA)	Focused ethnography; (n = 36 patients, 8 anaesthetists)	Analysed real pre-operative consultations for patients undergoing knee arthroplasty	Shared decision-making inconsistently practised; clinicians often led decisions; patients sought reassurance > choice.
Kindler et al. [65] (Switzerland)	Quantitative observation; videotaped anaesthetist–patient consultations (n = 57)	Quantified communication and patient involvement	Communication mostly biomedical; OPTION mean (SD) 26.8 (16.8); open questions ↑ involvement.
Neuman et al. [66] (USA)	Online pre–post experiment; age ≥ 50 y (n = 179)	Tested 'My Anesthesia Choice'–HF' shared decision-making conversation aid	Decisional conflict ↓ (63 → 34%); knowledge ↑ (50 → 67%); high acceptability (> 80%).
Park et al. [67] (USA)	Qualitative interviews (n = 20 patients, 22 providers)	Explored shared decision-making and communication during caesarean delivery	Shared decision-making was limited; patients rarely offered choice; time pressure and anxiety barriers; clearer information ↑ satisfaction.
Pennington et al. [68] (USA)	Cross-sectional survey; patients with a history of a general anaesthetic in past 5 years (n = 806)	Investigated patient preferences and attitudes to general anaesthesia decision-making	Only 7.8% experienced full shared decision-making; < 50 y and Black patients preferred more patient-led role; 43% anxious about general anaesthesia.
Stubenrouch et al. [69] (Netherlands)	Observational; (n = 80 patients and 21 clinicians)	Evaluated shared decision-making practice in pre-operative consultations	Observer-rated shared decision-making low (30%); patients and clinicians over-estimated shared decision-making; longer consults ↑ OPTION scores.
Yek et al. [70] (Singapore)	Cross-sectional survey; patients pre-operatively (n = 364)	Assessed patient preferences for shared decision-making and risk discussion	52% preferred shared decisions; younger/educated patients more autonomous; risk disclosure valued.

OPTION, Observing Patient Involvement in Decision-Making scale.

Decisional Conflict Scale or SURE form (n = 2); and the Observer OPTION scale, including OPTION and OPTION 5 (n = 2). Additional tools included SDM-Q-9; SDM-Q-Doc; Reynold Intellectual Assessment Scale; Decision Self Efficacy Scale; and MAPPIN SDM observer and

questionnaire instruments (all n = 1). Four studies used adapted or study-specific questionnaires and four relied on qualitative or observational frameworks: thematic analysis [61, 67]; Practical, Robust Implementation and Sustainability Model (PRISM) [63]; and focused ethnography [64].

Patients came from varied peri-operative settings: eight were in clinical environments (five in pre-operative assessment clinics [60, 62, 65, 69, 70]; two in hospital-based anaesthetic services [63, 64]; and one on a labour and delivery unit [67]). One study evaluated a clinician-focused educational workshop [61], one assessed a conversation aid via an online community survey [66] and one used a national outpatient survey [68].

Four studies involved only patients [60, 66, 68, 70], one included only healthcare professionals [61] and six combined both groups [62–65, 67, 69]. The clinician-only study was retained because it targeted modifiable clinician behaviours that influence shared decision-making [61]. Healthcare professionals were typically anaesthetists [61, 62, 67, 69]; nurse anaesthetists [63]; or obstetricians, midwives and delivery nurses [67].

Across studies, mean (SD) patient ages ranged from 33.4 (5.2) to 78.4 (12.1) y. The youngest sample involved patients undergoing caesarean delivery [67] and the oldest involved adults undergoing hip fracture surgery [63]. Most other studies reflected middle-aged surgical populations, with mean ages between 49.3 (14.9) y and 54.8 (15.3) y [60, 62, 69], with one community sample aged ≥ 50 (63.8 (8.9) y) [66].

Biological sex data established a predominance of patients recorded as female across general adult surgical samples (48–65%) [60, 62, 64, 65, 68–70]. The study involving patients with hip fractures reported a higher proportion of patients recorded as female (83%) [63]. One study included five patients (0.6%) identifying as non-binary [68]. No other study reported gender identity beyond binary categories, limiting insight into how gender may shape shared decision-making.

Although conceptualisation varied, all studies described shared decision-making as a deliberative and collaborative process extending beyond routine consent. Quantitative studies used validated involvement or communication measures to assess preferences, attitudes and decision-making behaviours [60, 62, 65, 66, 68, 69], with study-specific preference items used to assess decision preferences [70]. Qualitative and mixed methods studies examined how patient preferences, institutional constraints and clinician norms shaped opportunities for shared decision-making [61, 63, 64, 67].

According to the Mixed Methods Appraisal Tool, the seven quantitative studies generally showed robust methodological quality, with appropriate measurement tools and statistical analyses [60, 62, 65, 66, 68–70]. Common limitations included single-centre recruitment; incomplete reporting of non-response or exclusion data;

and restricted generalisability due to sampling and design constraints. All three qualitative studies [63, 64, 67] met quality criteria, with findings substantiated clearly by patient data. Bougeard et al. combined quantitative feedback with qualitative thematic analysis [61]; while it met core quality criteria, reporting provided limited detail on instrument validation, reflexivity and integration of methods. Detailed appraisal results are in online Supporting Information Table S2.

Themes identified across all included studies are presented in online Supporting Information Table S3. Four major themes were identified among the four studies reporting qualitative findings [61, 63, 64, 67]. Organisational constraints and workflow misalignment: time-limited consultations [64, 67], same-day surgical scheduling [64] and competing clinical priorities were barriers to meaningful shared decision-making [64, 67]. These constraints restricted dialogue, especially where structured tools or pre-visit materials were absent [61, 63, 67]. Clinicians reported difficulty embedding shared decision-making within fast-paced workflows, uncertainty about whether surgeons or anaesthetists should lead discussions [63] and entrenched routines that left little opportunity to introduce new approaches [61, 63, 67].

Clinician role perception and confidence

In a US-based study, some anaesthetists viewed shared decision-making as outside their remit, reflecting uncertainty about how to integrate it into practice and reinforcing role divisions where surgeons were seen as responsible for treatment decisions [63]. Patients likewise reported that anaesthetists often presented options as predetermined rather than open for discussion [64]. In addition, clinicians expressed uncertainty about how to implement shared decision-making in practice [63]. Education and skills-based training (particularly role-play and video demonstrations) were associated with improved confidence and a greater willingness to engage patients, especially when supported by communication tools [61]. Some clinicians also described the psychological tension of balancing safety with patient autonomy [67].

Patient understanding and perceptions of involvement

Patients often believed that anaesthetic decisions had already been made or were unaware that a choice existed [63, 64, 67]. Some equated being informed with being involved, while others assumed clinicians were responsible for decisions [64, 67]. These interpretations were shaped by previous experiences and by how options were framed during the consultation [63, 64]. Variability in how clinicians

presented options and elicited patients' views influenced the quality of how involvement was perceived [63, 64].

Communication, trust, and emotional support

Patients emphasised the importance of clear and empathetic communication [61, 64, 67]. Supportive language and opportunities to ask questions increased patients' confidence and comfort [64, 67], whereas directive or rushed consultations heightened anxiety, confusion and dissatisfaction [61, 63, 67]. Patients described communication as most helpful when clinicians offered respectful explanations and real-time updates that reassured them and eased pre-operative anxiety [67].

Four major themes were identified among the eight studies reporting quantitative findings [60–62, 65, 66, 68–70], which assessed decision quality [66, 69]; patient satisfaction [62]; clinician–patient communication [60, 65, 69]; and the acceptability or evaluation of shared decision-making practices or support tools [61, 66].

Low observed and perceived shared decision-making across settings

Observed shared decision-making was consistently low across quantitative studies. Stubenrouch et al. reported low objectively scored shared decision-making, with mean (SD) OPTION-5 scores of 30.5 (10.5) out of 100 [69]. Similarly, Kindler et al. reported a modified OPTION mean (SD) of 26.8 (16.8) [65]. Conversely, self-reported engagement was high [69], with median (IQR) SDM-Q-9 91.7% (83.3–100), SDM-Q-Doc 84.3% (74.3–90.5) and CollaboRATE 96.3% (88.9–100). Nationally, Pennington et al. found only 7.8% achieved top-box CollaboRATE scores, indicating limited perceived shared decision-making [68]. Flierler et al. reported discrepancies between patient and clinician perceptions of involvement, with patients rating shared decision-making more highly than anaesthetists [62].

Patient factors shaping engagement

Preferences for involvement varied across individuals. Higher educational attainment and younger age were associated with more autonomous role preferences [70]. Previous anaesthesia experience did not appear to influence patients' preferences for shared decision-making [68, 70]. Sex was not predictive and age predicted autonomy where examined [60, 62, 68, 70].

Clinician-led consultations limiting participation

Consultations were frequently clinician-dominated. OPTION scores showed limited preference elicitation and minimal deliberation [69], and patients similarly reported

little opportunity to discuss information or alternatives [62]. Clinicians tended to lead exchanges, with clinicians expressing lower support for shared decision-making than patients [62] and communication dominated by biomedical content; psychosocial exchange accounted for < 0.1% of anaesthetist utterances [65]. Although alternatives were listed in 19 of the 21 consultations coded with OPTION, understanding was checked in only two encounters [65].

Implementation tools improve patient experience

Decision aids and clinician training were associated with better communication and confidence outcomes. The use of the 'My Anesthesia Choice-HF aid' significantly improved patient knowledge and reduced decisional conflict, with acceptability ratings ranging from 71% to 86% across items assessing clarity, usefulness and ease of discussion [66]. Clinician workshops increased perceived confidence, skills and awareness of how to support patient involvement among clinicians, and many highlighted the need for more training in using decision aids [61].

Barriers and facilitators in shared decision-making

Across studies, 45 barriers and 13 facilitators to shared decision-making in anaesthesia were identified (online Supporting Information Table S4). Clinician-level barriers were reported in eight studies [61–65, 67–69]. These included uncertainty about how to implement shared decision-making in everyday practice [61] and concerns about its feasibility in time-limited or high-pressure peri-operative settings [63, 67]. Cognitive impairment was described as limiting some patients' ability to participate actively in decisions [63], and several studies reported consultation patterns in which decisions were effectively clinician-led, with patients having little opportunity to explore options or express preferences [62, 64, 69]. While structural and systemic factors may also contribute to these challenges, the studies primarily framed them as arising within clinician–patient interactions. Clinicians often led anaesthetic consultations, at times presenting their preferred option rather than supporting a balanced discussion [62, 64]. Anaesthetists who received shared decision-making training reported greater preparedness to involve patients in decisions [61]. The use of facilitators, open questions and emotional statements coincided with higher patient involvement [65], and that higher levels of shared decision-making were associated with greater patient satisfaction [62].

Patient-level barriers, reported across seven studies [60, 62–64, 67–69], most commonly reflected limited understanding of shared decision-making or unawareness

that a choice existed [60, 64, 68]. Some patients assumed that decisions should be left to clinicians, contributing to clinician-led encounters [64, 69]. Others equated being informed with being involved [64]. Challenges related to how health information was understood and communicated [68], and communication difficulties linked to language or situational stress [60, 67], also restricted meaningful engagement, particularly in high-pressure environments [63, 67]. Patient-level facilitators included clear explanations, emotionally supportive communication and explicit opportunities to ask questions, all of which strengthened patient involvement [63–65, 67]. Clinician encouragement and open dialogue increased confidence among patients who were initially hesitant to participate [67].

System-level barriers were identified in five studies [61, 63, 64, 67, 68]. Short consultations [61, 67], limited staffing [61, 63, 67] and competing workload pressures [61, 67] restricted discussion of anaesthetic options. Clinician-led communication patterns, including predetermined or clinician-driven presentation of options, limited dialogue during consultations [64]. Time-pressured environments, particularly where assessments occurred close to the point of surgery [63], further constrained shared decision-making. Lack of consistent protocols or decision aids contributed to variability in communication and planning [61, 68]. System-level facilitators included better-timed consultations; pre-appointment information; and structured decision tools [61, 63, 66]. Organisational conditions that supported clearer communication, such as smoother workflow and adequate staffing, also enabled more effective shared decision-making [67]. Clinicians emphasised the importance of protected time and structured formats to embed shared decision-making within routine practice [61].

Barriers and facilitators were mapped to 11 of the 14 domains of the Theoretical Domains Framework (Table 2). Social influences (eight studies) captured interpersonal dynamics shaping involvement, including hierarchical team structures; cultural expectations; and patterns of patient deference. Environmental context and resources (five studies) reflected time pressure; short consultations; limited access to shared decision-making tools; and inconsistent organisational processes. Knowledge (five studies) encompassed limited patient awareness of options; and insufficient clinician training. Beliefs about capabilities and beliefs about consequences (each in three studies) described clinicians' uncertainty about patient capacity; confidence in delivering shared decision-making; and concerns about its feasibility or appropriateness in urgent or high-stress settings. Skills (three studies) related to

communication gaps constraining delivery. Less frequent domains included social/professional role and identity (two studies; workflow demands); memory, attention and decision processes (two studies; patients mistaking information for participation); intentions (two studies; clinician-led steering of decisions); and emotion (two studies; pre-operative anxiety).

Facilitators were identified across nine domains. Environmental context and resources (five studies) included decision aids; preparatory materials; and better-timed consultations. Social influences (four studies) involved supportive communication; and explicit invitations to participate. Beliefs about capabilities (four studies) and knowledge (four studies) reflected the effects of training and clearer information. Skills (three studies); beliefs about consequences (three studies); emotion (two studies); reinforcement (two studies); memory and decision processes (one study); and social/professional role and identity (one study) were reported less frequently.

Discussion

By examining 11 studies, this review has identified reasons why shared decision-making in anaesthesia is implemented inconsistently and, using a theoretical lens, distilled practical activation targets at clinician, patient and system levels. Taken together, these targets offer a theory-informed roadmap for embedding shared decision-making in peri-operative practice (Table 3). Addressing them in combination may deliver the most sustainable improvements for clinicians, educators and service leads [41, 53, 72].

Clinician-level targets involve enhancing skills, behaviours and professional norms that foster collaboration within consultations. First, targeted shared decision-making communication training can improve confidence in presenting options, eliciting patient values and supporting meaningful discussion even under time constraints. Anaesthesia-specific workshops increased clinician preparedness and confidence in involving patients in decision-making [61]. Communication behaviours such as open questioning, facilitation and affective statements were also associated with greater patient participation and satisfaction [62, 65], aligning with broader evidence that tailored shared decision-making training improves clinician self-efficacy and decision quality [18, 72]. Training incorporating interactive or practice-based elements can support the development of these skills [73]. Second, clinicians should elicit patient preferences actively using open-ended and structured prompts. Explicitly inviting patients to share preferences and ask questions was

Table 2 Barriers and facilitators to shared decision-making in anaesthesia mapped to domains of the Theoretical Domains Framework (domains are detailed in online Supporting Information, Appendix S2).

Domain	Barriers	Facilitators
Beliefs about capabilities	Clinicians sometimes assumed that older adults or cognitively impaired patients were less able to participate [62, 63]; anxious or distressed patients were seen as too overwhelmed [67]; and differences in understanding or confidence reduced engagement [64].	Workshops and skills-based training enhanced clinician confidence even in time-limited settings [61]; accessible decision aids supported understanding across literacy and education levels [66]; and inclusive invitations to participate improved engagement across age groups and perceived capacity levels [63, 67].
Beliefs about consequences	Clinicians feared that offering options might overwhelm patients in high-stress settings [64, 67], often viewing limited choice as protective [64, 67], and some felt shared decision-making was impractical under clinical pressure [63].	Patients reported greater satisfaction when shared decision-making was incorporated [62] and expressed feeling more respected, confident and reassured when clinicians supported participation [63, 67].
Emotion	Pre-operative anxiety or uncertainty led some patients to defer decisions to clinicians [60, 67].	Clear explanations and structured conversations reduced anxiety and supported engagement [63, 67].
Environmental context and resources	Time pressure, same-day consultations and high-workload settings limited shared decision-making [61, 63, 64, 67]. Patients also struggled to find clear, trustworthy pre-operative information, which reduced preparedness for participation [68].	Structured tools and pre-consultation materials improved understanding and preparedness [61, 63, 66], clearer communication supported engagement even in busy settings [67] and longer consultations increased observed shared decision-making [69].
Intentions	Clinicians sometimes led patients toward a particular anaesthetic option rather than facilitating deliberation, with consultations often shaped around clinician preferences [63, 64].	None reported.
Knowledge	Patients were often unaware of their role or of available anaesthetic options [60, 64, 68], and clinicians reported limited training or confidence in delivering shared decision-making [61, 63].	Decision aids improved patient understanding and preparedness [66], and training and supportive communication increased clinicians' ability to involve patients [61, 63, 67].
Memory and decision processes	Patients mistook information provision for participation [64] and anaesthetists controlled the consultation structure, limiting opportunities for patients to process information [65].	Preparatory materials, including structured conversation aids, improved information retention and supported greater engagement [66].
Reinforcement	None reported.	Positive feedback loops reinforced engagement: patients who felt involved reported greater satisfaction [62] and real-time decision aids reinforced shared participation during consultations [66].
Social influences	Clinicians often underestimated patients' desire or ability to be involved [61–63, 69]; engagement differed across demographic and cultural groups [68, 70]; hierarchical team structures discouraged shared decision-making [61, 63, 67]; and many patients deferred to clinicians based on trust, habit, or perceived authority [62, 64, 68].	Multidisciplinary teamwork and visible support from multiple clinicians encouraged collaborative involvement [67], while clinicians who actively invited patient input strengthened engagement and confidence during consultations [64–66].
Social/professional role and identity	Clinicians sometimes viewed shared decision-making as difficult to integrate within their professional role or deprioritised it due to workflow expectations [61, 67].	Support for shared decision-making increased when it was institutionally prioritised and integrated into clinicians' roles and responsibilities [61].
Skills	Limited repertoire of communication techniques and absence of structured skill training constrained clinicians' ability to facilitate discussion [63, 65, 67].	Shared decision-making-specific workshops developed communication skills and preparedness [61], and observed use of open questioning, facilitation and affective statements was linked to greater engagement [62, 65].

Table 3 Key activation targets for shared decision-making in anaesthesia.

Level	Activation target	Description	Evidence from review
Clinician-level	1. Train clinicians in shared decision-making communication	Build communication skills to explain anaesthesia options clearly, check understanding and support two-way discussion.	Anaesthesia-specific training increased clinician confidence and preparedness to involve patients in decisions [61]. Communication behaviours such as open questioning, facilitation and affective statements were associated with greater patient involvement [62, 65].
	2. Actively elicit patient preferences	Use open questions and prompts to draw out patient values and concerns.	Engagement rose when clinicians invited contributions explicitly or used open questions to explore values [64, 65, 67]. Consultations that remained clinician-dominated limited opportunities for patients to express preferences or discuss options [62-64].
	3. Avoid assumptions about patient capacity	Engage all patients regardless of age, education, or cognitive status.	Inclusion improved when all patients were invited; assumptions about ability or distress hindered involvement [63, 64, 67].
Patient-level	4. Make the decision explicit	Clearly state that an anaesthesia choice exists and that patient input in that choice is valued.	Patients were often unaware of a choice [60, 64, 67, 68], and clear explanations helped them understand their role [70]. Awareness increased engagement and confidence [63, 66, 67].
	5. Reduce pre-operative anxiety	Use clear explanations of anaesthesia choices and reassurance to support participation.	Supportive communication reduced anxiety and improved engagement [63, 64, 67]. Anxiety and stress led some patients to defer decision-making [64, 67].
	6. Ensure accessibility for all literacy levels	Provide plain language, visual aids and culturally adapted materials.	Educational tools designed in clear, plain language improved understanding and confidence [66]. Lower involvement was observed among patients with limited understanding, language differences or varying educational backgrounds [60, 64, 67, 70].
System-level	7. Allocate sufficient time for shared decision-making	Create space in the schedule for meaningful discussion.	Observed shared decision-making increased with longer consultations [69]. Availability of pre-consultation materials improved preparedness [61, 63].
	8. Provide pre-consultation information and tools	Give patients decision aids: conversation aid pre-consultation leaflets or question prompt lists in advance.	Decision aids and early information improved clarity, understanding and engagement in shared decision-making [63, 66, 67].
	9. Embed shared decision-making into workflows and protocols	Formalise shared decision-making within organisational processes and team roles.	Written guidance, team-based approaches and structured communication processes improved consistency [61, 63, 66]. Lack of clear protocols or tools hindered delivery [61, 63].

associated with higher engagement [64, 65], which is consistent with evidence that preference elicitation is central to shared decision-making [28, 74]. Third, assumptions about patient capacity should be avoided, since engagement increased when all patients were invited to participate regardless of age, education or perceived capacity to engage [63, 64, 67]. Differences in communication confidence and language [70] highlight the importance of inclusive approaches that actively support and encourage participation. This reflects wider literature

showing that inclusive invitations can reduce inequities in participation [75, 76].

Patient-level targets aim to strengthen readiness, understanding and confidence to participate. First, clinicians should make the decision explicit, clearly signalling that a choice exists and that patient input will influence the outcome. Many patients were unaware that there was a decision to be made about their anaesthetic [60, 64, 67, 68]. Awareness was linked to higher engagement [63, 66, 67], supporting evidence that decision signposting

increases engagement [77–79]. Second, measures to reduce pre-operative anxiety, including clear explanations, reassurances and supportive communication, were associated with improved participation [63, 64, 67], consistent with findings from surgical and oncology care [80, 81]. Third, ensuring accessibility for patients with different communication or literacy needs is critical. Tools designed in clear, plain language and supported by accessible communication strategies can improve understanding and confidence across diverse patient groups [60, 66, 67], reflecting broader evidence that plain language, visual aids and culturally adapted formats can improve equity [82, 83].

System-level targets address structural and organisational factors. First, services should allocate sufficient time for shared decision-making by extending consultations or moving discussions to earlier points in the pathway. Time constraints limited shared decision-making consistently [61, 63], and clinicians identified longer or better-timed consultations as essential for meaningful involvement [61], echoing wider findings that adequate time enables patient involvement [19, 74]. Second, services should provide pre-consultation information and tools to prepare patients before their appointment. Decision support in the included studies comprised conversation aids and pre-consultation written information, which improved clarity, preparedness and satisfaction [63, 66]. Both patients and clinicians described earlier information as a valuable enabler of understanding and engagement [63, 66], consistent with systematic review evidence for decision aid benefits [77]. Third, organisations should embed shared decision-making into workflows and protocols, ensuring it is a consistent expectation rather than an optional practice. While structured protocols and decision aids can improve reliability, excessive standardisation may limit patient-centred dialogue. These tools should guide rather than prescribe discussions, maintaining both consistency and individualisation [28, 84]. Achieving this balance between structure and personalisation is essential for equitable and authentic shared decision-making. Clear guidance, team-based approaches, and structured communication processes supported consistency [61, 63, 66], aligning with broader implementation research on integrating shared decision-making into standard care pathways [72, 85].

The identified barriers and facilitators illustrate how multilevel factors interact to produce inconsistent shared decision-making in anaesthesia. Structural pressures such as fast-paced, brief or same-day consultations limited deliberation [61, 63] and were also associated with clinician-led talk, single anaesthetic-option framing and lower patient

recognition that a choice existed [64, 68]. A perception–observation gap was evident, with low observed shared decision-making alongside high self-rated involvement and mismatches between preferred and experienced roles, influencing satisfaction and decisional confidence [62, 68]. Professional norms and role perceptions shaped practice, with shared decision-making often viewed as peripheral under clinical pressure and consultations often steering toward a preferred option [61, 64]. Equity-related barriers were linked to differences in understanding and language proficiency, compounded by assumptions about the capacity of older adults [60, 63, 67].

Facilitators that acted across levels were most promising. Pre-consultation materials and decision aids improved preparedness and structured dialogue [63, 66], and early, clear information was described as valuable supports for understanding and engagement [63, 67]. Anaesthesia-specific training increased clinician confidence [61] while effective communication behaviours were associated with greater patient participation [62, 65]. These patterns justify multi-component strategies that prepare patients, support clinicians and adjust workflows, directly underpinning the activation targets described above.

Mapping barriers and facilitators to the Theoretical Domains Framework clarifies where efforts to strengthen shared decision-making should focus. The prominence of social influences highlights how interpersonal expectations and established professional norms shape whether shared decision-making is treated as integral rather than optional. Environmental context and resources further illustrate how structural pressures constrain time and limit opportunities for earlier preparation. Knowledge and beliefs about capabilities point to parallel requirements; patients need accessible information to recognise genuine choice and clinicians need confidence and skills to present options in equipoise. Less frequent domains, such as emotion and intentions, show how anxiety or clinician steering can still shape decisions. Framing activation targets within these domains shows that inconsistent shared decision-making reflects modifiable structural and professional pressures rather than inherent patient reluctance.

Embedding shared decision-making in anaesthetic care requires co-ordinated action across clinicians, patients and healthcare systems. Training and communication initiatives are most effective when supported by organisational policies that make collaborative decision-making a routine part of peri-operative workflows. Clinicians can apply anaesthesia-specific communication training to promote open inclusive discussions and consistent practice. At the same time, patients need accessible education and

supportive dialogue to enhance understanding and participation. Sustainable progress also depends on system-level alignment, including decision-support tools; protected consultation time; and integration within standard care pathways. Taken together, these efforts translate behavioural evidence into everyday practice and outline a pragmatic route toward genuinely person-centred anaesthesia decision-making.

This review offers a structured, theory-informed synthesis of factors influencing shared decision-making in anaesthesia, identifying primary targets for improvement. A key strength is the use of the Theoretical Domains Framework [35–37], which enabled behavioural mapping across diverse study designs, supporting reproducible synthesis and identifying modifiable mechanisms for practice and policy. The inclusion of both patient and clinician perspectives across varied health systems enhances the breadth of insight and supports transferability. The search spanned six databases without date or language restrictions, and identified eligible studies published between 2005 and 2025. Study quality was assessed consistently using the Mixed Methods Appraisal Tool [47], ensuring comparability across methods.

Several limitations should be considered. None of the included studies reported a fully powered randomised trial; most were qualitative or observational. Although this limits causal inference, such designs can provide valuable contextual and behavioural insights that are often missed in trials [31, 86]. Heterogeneity in how shared decision-making was defined, measured and described limited the precision of domain-level mapping and precluded meta-analysis, reflecting broader gaps in standardised reporting. The use of the Theoretical Domains Framework partly mitigated this by enabling consistent synthesis across diverse approaches. Rather than detracting from the evidence base, these issues highlight the early stage of anaesthesia-specific shared decision-making research and the need for theory-driven, transparently reported studies. Future research should draw on frameworks such as the Behaviour Change Intervention Ontology to specify intervention components more precisely [87].

Several studies relied on clinicians' self-assessments of their communication skills to gauge preparedness for shared decision-making. However, such measures should be interpreted cautiously, as self-evaluations may not reflect actual performance accurately. Assessing one's own competence is inherently difficult and studies show that self-assessments often diverge from external evaluations [88–90]. Combining reflection with feedback and observation can support more accurate skill development. Finally, gender

and other identity factors remain largely unexplored. None of the included studies examined how gendered social dynamics or identity-related processes, such as epistemic injustice (where patients' testimonies may be undervalued) for example, shape anaesthesia consultations [91, 92]. Addressing these gaps is critical for advancing equity and inclusivity in peri-operative communication.

The focus of this review on shared decision-making may have omitted studies centred on informed consent or patient communication that reflect similar deliberative principles. Future syntheses could examine this overlap to clarify how informed consent transitions into shared decision-making. Further, factors such as socio-economic status or health literacy were beyond scope of the review but remain essential to understanding equity in patient–clinician interactions.

In conclusion, shared decision-making in anaesthesia is delivered inconsistently due to modifiable clinician, patient and system-level constraints. This synthesis identifies persistent barriers and facilitators and distils them into actionable activation targets, mapped to the Theoretical Domains Framework to show where change is most likely to have impact. Priorities for practice are achievable within existing peri-operative pathways: preparing patients with clear pre-consultation information; supporting clinicians to present options in equipoise and elicit preferences; and embedding shared decision-making into workflows through earlier scheduling, protected time, standardised tools and clear documentation. A co-ordinated implementation approach is needed, with consistent communication practices and clear processes to support shared decision-making across the peri-operative pathway. Taken together, these insights show that meaningful progress does not require redesigning pathways but co-ordinated action across levels, with activation targets offering practical entry points that link patient and clinician preparation with preference elicitation and modest workflow changes. Applying behavioural theory strengthened understanding of mechanisms and priorities and can guide future evaluations, providing a realistic route from intention to delivery. Implementing shared decision-making in anaesthesia is both feasible and necessary to achieve safe, person-centred care aligned with current clinical standards.

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Supporting Information

Additional supporting information may be found online via the journal website.

Appendix S1. Full database-specific search strings.

Appendix S2. Descriptions of Theoretical Domains Framework domains.

Table S1. Characteristics of included studies on shared decision-making in anaesthesia.

Table S2. Detailed appraisal results using the Mixed Methods Appraisal Tool.

Table S3. Qualitative and quantitative themes identified across included studies.

Table S4. Detailed summary of reported barriers and facilitators to shared decision-making in anaesthesia.