

Operationalizing Shared Decision-Making for End-of-Life Decisions in Adult ICUs: A Systematic Review Using the Three-Talk Model

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Abstract

Background

Most patients lack decision-making capacity near the end of life (EOL), leaving surrogates to make high-stakes choices. Shared decision-making (SDM) is endorsed by international guidelines and China's 2026 expert consensus, yet how SDM interventions operationalize the Three-Talk Model (Team Talk, Option Talk, Decision Talk) and specify nursing roles remains unclear. This review aimed to identify the operational components of SDM protocols for adult ICU EOL decision-making and map them onto the Three-Talk Model.

Methods

A systematic review was conducted according to PRISMA 2020 and registered in PROSPERO (CRD42026140400001). Nine databases were searched from inception to May 2026 for studies of any design evaluating SDM interventions in adult ICU EOL decision-making. Intervention components were extracted using the Template for Intervention Description and Replication (TIDieR) framework, mapped onto Three-Talk Model, and synthesized narratively following the Synthesis Without Meta-analysis (SWiM) guideline; methodological quality was appraised using the Mixed Methods Appraisal Tool (MMAT).

Results

Thirty-one of 3,385 identified records were included (12 randomized, 16 nonrandomized, 3 mixed-methods studies). Interventions comprised structured family conferences, nurse- or facilitator-led support, decision aids, communication training, and documentation tools. Team Talk was explicitly described in 29 studies (93.5%), Decision Talk in 24 (77.4%), and Option Talk in 20 (64.5%); only 18 studies (58.1%) covered all three phases. Communication and process outcomes improved most consistently, whereas psychological and clinical effects were variable, and improved understanding did not reliably translate into goal-concordant care. Nursing activities involved preparing families for discussions, identifying informational and emotional needs, clarifying patients' known values, and maintaining continuity of communication among healthcare professionals.

Conclusions

ICU EOL SDM has built a firm foundation for engaging families, but the steps that compare treatment options and integrate patient values into decisions remain least specified. Option Talk was the least consistently operationalized phase and offers the clearest target for improvement. The Three-Talk Model provides a workable framework for evaluating how communication becomes a preference-informed decision.

Background

End-of-life (EOL) decisions are a routine part of intensive care unit (ICU) practice, particularly when continued life-sustaining treatment (LST) is unlikely to achieve outcomes consistent with a patient's goals. ETHICUS-2 reported that treatment limitations rose from 68.3% to 89.7% and withdrawal from 24.8% to 38.8% over 16 years[1,2]. Because critical illness frequently impairs decision-making capacity, surrogates are often left to interpret clinical information and infer what the patient would have wanted; this responsibility is emotionally taxing, and patients' values and preferences are not always adequately discussed[3,4]. In China and other Confucian-influenced settings, families commonly occupy a central role in medical decisions, yet family involvement does not guarantee that the patient's own preferences are represented; filial piety, financial toxicity, and family-oriented consent can intensify decisional conflict[5–7].

Shared decision-making (SDM) is a collaborative process in which clinicians and patients, or their surrogates, exchange information, weigh clinical evidence against patient values and preferences, and reach healthcare decisions together[8,9]. Recent guidelines have moved SDM from aspiration to expectation. The 2024 European Society of Intensive Care Medicine (ESICM) guidelines suggest structured EOL decision-making strategies to support surrogate involvement and patient-centered goals, although the evidence remains insufficient for a formal recommendation[10]. The 2025 Society of Critical Care Medicine (SCCM) guidelines conditionally suggest structured tools to facilitate SDM for EOL treatment decisions in the ICU[9]. In China, the 2026 Expert Consensus goes further and endorses the Three-Talk Model, comprising Team Talk, Option Talk, and Decision Talk, as a clinical pathway for implementing SDM[11]. Nurses are continuously present at the bedside and can support each phase, yet their participation in formal EOL decision-making is shaped by individual, team, organizational, and sociocultural factors[12].

Despite these recommendations and nurses' potential to support SDM, intervention effects in ICU EOL decision-making have been uneven. Benefits have been reported for selected psychological, communication, and family-centered outcomes, but not consistently across studies[13–18]. This variability plausibly reflects differences in intervention design, components, and delivery. Earlier reviews noted that SDM processes were seldom evaluated in detail and that the component responsible for a given outcome could rarely be identified[19–21]. A meta-analysis found no significant pooled effects on mortality, depression, or anxiety, with reduced ICU length of stay only among patients who died[22]. An integrative review reported varied formats and positive effects on comfort, satisfaction, and communication, yet some families experienced increased distress[23]. What remains unclear is how these interventions operationalize each SDM phase and which nursing roles they specify.

A process-oriented framework is therefore needed to establish what ICU EOL SDM interventions actually do. The Three-Talk Model supplies one, separating SDM into Team Talk, Option Talk, and Decision Talk[11,24]. We accordingly conducted a systematic review with three aims:(1) to describe the characteristics and implementation strategies of SDM interventions for adult ICU EOL decision-making; (2) to appraise methodological quality with established tools; and (3) to map intervention components onto the Three-Talk Model to evaluate phase coverage and operational patterns. The resulting evidence map is intended to inform the development of culturally appropriate SDM strategies in ICU practice.

Methods

Protocol and registration

The review was conducted and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement[25] and prospectively registered in PROSPERO (CRD42026140400001, version 2.0).

Search strategy

Nine electronic databases were searched from inception to May 2026: PubMed, Embase, Web of Science, the Cochrane Library, CINAHL, CNKI, Wanfang Data, VIP, and SinoMed. Search strings combined controlled vocabulary with free-text terms for intensive care, end-of-life care, and shared decision-making. Reference lists of included studies were hand-searched, and thesis databases and trial registries were screened for Additional file eligible records. Full search strategies are provided in Additional file 1. Studies published in English or Chinese were eligible. Where an eligible study had an English abstract but a non-English full text, the text was translated with Google Translate and the translation was verified by a bilingual colleague.

Eligibility criteria

Studies were included if they: (a) were randomized controlled trials (RCTs), quasi-experimental studies, quality improvement projects with pre-post outcome evaluation, or detailed protocol descriptions; (b) involve adult ICU patients (aged ≥ 18 years) facing EOL decisions and/or their surrogates; (c) evaluated or described a structured SDM protocol with defined communication steps, decision aids, or structured family meeting frameworks; and (d) reported at least one of the following outcomes: protocol components, decisional conflict, communication quality, family satisfaction, ICU length of stay, or treatment intensity.

We excluded pediatric or neonatal ICU studies, general communication-skills training not linked to a defined SDM protocol, pure qualitative studies without a linked intervention, and surveys, case reports, commentaries, and reviews. Prespecified eligibility criteria covering population, intervention, comparator, and study design are detailed in Additional file 2.

Study selection and data collection

Study selection proceeded in two stages: title and abstract screening, followed by full-text assessment. Two reviewers independently screened records against the eligibility criteria (Additional file 2). Disagreements were resolved through discussion with a third reviewer. The same reviewers then independently assessed potentially eligible full texts for inclusion. The selection process and the reasons for exclusion are presented in Fig. 1.

A structured extraction form was developed from preliminary scoping and aligned with the review objectives (Additional file 3). Two reviewers extracted data independently and resolved discrepancies by discussion. Extraction covered four domains: (1) study characteristics, including design, country or region, ICU setting, and sample size; (2) intervention characteristics informed by the TIDieR

framework[26], including components, materials or decision aids, providers, delivery mode, and timing or dose; (3) components mapped to the Team Talk, Option Talk, and Decision Talk phases; and (4) outcomes and direction of effect, with effect estimates where reported.

Data synthesis

Given the heterogeneity in designs, intervention characteristics, delivery approaches, and outcome measures, meta-analysis was not appropriate. We therefore used narrative synthesis guided by the Synthesis Without Meta-analysis (SWiM) guideline[27]. Operational components were mapped to the three phases with the prespecified coding approach described in Additional file 6. For each phase, we distinguished full coverage, partial or implicit coverage, and no explicit coverage. Full coverage meant that a phase was described without a limiting qualifier. Partial or implicit coverage was assigned when the description was qualified as partial, implicit, indirect, minimal, limited, not explicit, or not protocolized. A phase was coded as not addressed only when the report explicitly indicated that it was not addressed. Overall coverage of all three phases was classified as full only when all three phases met the full-coverage definition; as partial or implicit when at least one phase was partially or implicitly described and none was explicitly omitted; and as not addressed when any phase was explicitly reported as not addressed.

Outcome findings were grouped by domain and direction of effect, categorized as favorable, no difference, unfavorable, or mixed, and anchored to the primary outcome where one was specified. Key effect estimates are reported where available; results were not pooled.

Methodological Quality Appraisal

Because the included designs were diverse, methodological quality was appraised with the Mixed Methods Appraisal Tool (MMAT, version 2018)[28], which offers two screening questions and five methodological quality criteria for each of five design categories: qualitative, randomized controlled, nonrandomized, quantitative descriptive, and mixed methods. For mixed-methods studies, the relevant qualitative, quantitative, and mixed-methods criteria were applied as recommended[28]. Two reviewers assessed each study independently and resolved discrepancies by consensus; the appraisal form is provided in Additional file 4. Results are reported at the criterion level, with recurring limitations summarized narratively. Although the number of criteria met was recorded for internal consistency checks, no aggregate score was calculated or used to rank studies, in line with MMAT guidance.

Results

Search Results

The initial search identified 3,385 records. After removal of 936 duplicates, 2,449 records proceeded to title and abstract screening; 68 reports were sought for retrieval, one could not be retrieved, and 67 full texts were assessed for eligibility. Thirty-six reports were excluded, most often because they described no eligible SDM intervention (11/36, 31%), were conducted in an ineligible ICU setting (7/36, 19%), or did not address an eligible EOL or LST context (7/36, 19%). Thirty-one studies met the inclusion criteria (Fig. 1). Citation searching and screening of grey literature identified no further studies.

Study characteristics

The included studies were published between 2000 and 2026 (4 in 2000–2009, 14 in 2010–2019, and 13 in 2020–2026; Fig. 2). The evidence base is concentrated in the United States (23/31, 74%), with the remainder from France (4/31), China (2/31, including one from Taiwan, China), Switzerland (1/31), and Australia (1/31). Twelve studies were randomized controlled trials (39%), 16 were nonrandomized quantitative studies (52%), and 3 used mixed methods (10%). Settings ranged from medical and surgical ICUs to trauma, neurocritical, and respiratory care units and mixed ICU environments. The interventions varied widely in design and delivery, spanning structured family conferences and multidisciplinary communication pathways, nurse- or facilitator-led support, decision aids, communication training, and electronic or documentation-based tools (Table 1, Additional file 5).

Table 1
Characteristics of the 31 included studies

Study	Country	Design	Setting	Participants	SDM intervention	Comparator	Direction of effect
Lilly et al., 2000[31]	USA	Before-after study	Medical ICU	530 patients (134 pre, 396 intervention)	Proactive multidisciplinary meeting within 72 h with clinical milestones	Pre-implementation period	Favorable
Schneiderman et al., 2003[33]	USA	RCT	ICUs in 7 hospitals	551 patients (278 intervention, 273 control)	Eight-step ethics consultation for value-related treatment conflicts	Usual care	Favorable
Lautrette et al., 2007[13]	France	RCT	22 ICUs	126 family members	VALUE-based proactive EOL family conference plus bereavement brochure	Customary EOL conference	Favorable
Mosenthal et al., 2008[32]	USA	Prospective pre-post study	Trauma ICU	633 admissions (266 baseline, 367 intervention)	Structured palliative care program with early bereavement support and family meeting	Baseline period	Favorable
Daly et al., 2010[34]	USA	Before-after effectiveness trial	5 ICUs	481 patients (135 control, 346 intervention)	Intensive communication structure: scheduled weekly meetings away from bedside with a standardized agenda	Usual care	No difference
Lamba et al., 2012[29]	USA	Prospective pre-post observational study	Surgical ICU	183 patients (79 baseline, 104 intervention)	Structured palliative care program: assessment within 24 h plus interdisciplinary family meeting within 72 h	Baseline period	Favorable
Huffines et al., 2013[30]	USA	Uncontrolled pre-post study	Surgical ICU	72 patients	Family Supportive Care Algorithm: bundles at 24, 72, and 96 hours with clinical triggers	Pre-implementation period	Favorable
Braus et al., 2016[37]	USA	Before-after study	Medical ICU	203 patients (100 control, 103 intervention)	Palliative care clinician on morning rounds for patients meeting trigger criteria	Usual care phase	Favorable
Carson et al., 2016[17]	USA	Randomized trial	4 medical ICUs	365 surrogates of 256 patients	At least 2 palliative care-led structured support and information meetings plus brochure	Same brochure plus routine ICU-led meetings	No difference

Abbreviations: ICU, intensive care unit; RCT, randomized controlled trial; EOL, end-of-life; SDM, shared decision making; EMR, electronic medical record; IPAL-ICU, Improving Palliative Care in the ICU; VALUE, Value family statements, Acknowledge emotions, Listen, Understand the patient as a person, Elicit questions; COMFORT, communication model (Connect, Options, Family caregivers).

Study	Country	Design	Setting	Participants	SDM intervention	Comparator	Direction of effect
Curtis et al., 2016[15]	USA	Randomized trial	5 ICUs	168 patients; 268 family members	ICU communication facilitator (nurse or social worker): attachment-style support, clinician briefing, mediation	Usual care	Favorable
Garrouste-Orgeas et al., 2016[38]	France	Mixed-methods study	1 ICUs	100 family members	Planned proactive nurse participation in scheduled physician-led family conferences	Identical conferences without a nurse	Mixed
Torke et al., 2016[39]	USA	RCT	ICU	26 surrogates (13 per arm)	Family Navigator nurse: daily structured contact, 13 support modules, family meeting support, follow-up calls	Usual care	No difference
Allen et al., 2017[40]	USA	Nonrandomized before-after study	Surgical ICU	1,733 patients	Family point of contact invited to join daily multidisciplinary rounds	Preceding 6 months without structured invitation	Favorable
Awdish et al., 2017[41]	USA	Prospective cohort pilot study	Medical ICU	31 patients (15 intervention, 16 control)	VitalTalk simulation training plus 4-step communication bundle (72-h meeting, pre- and post-meeting huddles, EMR documentation)	Usual care	Favorable
Loeslie et al., 2017[42]	USA	Single-center pre-post study	9-bed respiratory care unit	33 patients (16 pre, 17 post)	Scheduled semistructured family meetings using a structured guide (modified IPAL-ICU bundle)	Pre-implementation period	Favorable
White et al., 2018[16]	USA	RCT	5 ICUs	1420 patients (547 intervention, 873 control)	PARTNER: nurse-led daily contact, question prompt list, scheduled interdisciplinary family meetings	Usual care	Mixed
Cox et al., 2019[18]	USA	RCT	13 ICUs	277 patients, 416 surrogates, 427 clinicians	Personalized web-based decision aid (ProVent prognosis graphic, values clarification) followed by a family meeting	Usual care with a family meeting	Mixed

Abbreviations: ICU, intensive care unit; RCT, randomized controlled trial; EOL, end-of-life; SDM, shared decision making; EMR, electronic medical record; IPAL-ICU, Improving Palliative Care in the ICU; VALUE, Value family statements, Acknowledge emotions, Listen, Understand the patient as a person, Elicit questions; COMFORT, communication model (Connect, Options, Family caregivers).

Study	Country	Design	Setting	Participants	SDM intervention	Comparator	Direction of effect
Wu et al., 2019[43]	China	Before-after study	ICU	178 patients (89 per group)	Five-step family-clinician SDM communication method plus up to 3 family meetings	Routine doctor-patient communication	Favorable
Pasricha et al., 2020[44]	USA	Mixed-methods study	Medical ICU	36 patients	Serious Illness Conversation Guide delivered by non-palliative-care hospitalists	Pre-pilot usual care	Not applicable
Chang et al., 2021[45]	USA	Prospective before-after study	3 medical ICUs	209 patients (113 pre, 96 post)	Time-limited trial as the default communication and care-planning approach in family meetings	Pre-implementation period	Favorable
Naef et al., 2021[35]	Switzerland	Mixed-methods study	ICU	116 patients; 137 family members	Advanced practice family nurse delivering an interprofessional family support pathway	Before-implementation period (propensity matched)	Mixed
Suen et al., 2021[46]	USA	RCT	2 ICU	52 patients (27 intervention, 25 control)	Family Support Tool web modules plus one-page summary for clinicians and 2 proactive family meetings	Enhanced usual care	No difference
Zimmermann et al., 2021[47]	USA	Pre-post pilot study	Trauma ICUs, 2 centers	86 patients (38 intervention, 48 control)	Best Case/Worst Case graphic aid used daily on rounds to convey scenarios and uncertainty	Pre-implementation period	Favorable
Chen et al., 2022[48]	USA	Quasi-experimental study	4 ICUs	41 surrogates (20 intervention, 21 control)	Nurse-led daily 20-minute telephone calls based on 3 COMFORT principles	Routine ICU communication	No difference
Kentish-Barnes et al., 2022[14]	France	RCT	34 ICUs	875 relatives (484 intervention, 391 control)	Three-step support strategy for relatives of dying patients (conference, room visit during dying, post-death meeting)	Standard care	Favorable
Waseem et al., 2023[36]	USA	Single-center pre-post study	Neurocritical care unit	24 patients	SDM bundle: pre- and post-conversation huddles, social worker-led conversation, EHR	Baseline records	Favorable

Abbreviations: ICU, intensive care unit; RCT, randomized controlled trial; EOL, end-of-life; SDM, shared decision making; EMR, electronic medical record; IPAL-ICU, Improving Palliative Care in the ICU; VALUE, Value family statements, Acknowledge emotions, Listen, Understand the patient as a person, Elicit questions; COMFORT, communication model (Connect, Options, Family caregivers).

Study	Country	Design	Setting	Participants	SDM intervention	Comparator	Direction of effect
					documentation template		
Kentish-Barnes et al., 2024[49]	France	RCT	5 ICUs	404 family members (202 per arm)	Nurse facilitator: prepare families, accompany them in meetings, debrief with family and staff	Standard communication	No difference
Butler et al., 2025[50]	USA	Randomized trial	6 ICUs	444 surrogates of 291 patients	Four Supports intervention: protocolized emotional, communication, decisional, and anticipatory grief support	Education control	No difference
Cox et al., 2025[51]	USA	Randomized trial	6 ICUs	151 patients; 151 family members	Palliative care planner app: family-reported needs shown to physicians, question coaching, prompted consultation	Usual care	No difference
Peters et al., 2025[52]	Australia	Prospective longitudinal cohort study	ICU	1,178 patients	iValidate communication skills training plus institutional goals-of-care form with electronic alerts	No control population	Favorable
Cheng et al., 2026[53]	Taiwan, China	Quasi-experimental pre-post study	ICU	60 family members (30 per group)	Two-day program built explicitly on the Three-Talk Model (team and option talk day 1, decision talk day 2) plus take-home SDM sheet	Usual care (explanations when families asked)	Mixed
Abbreviations: ICU, intensive care unit; RCT, randomized controlled trial; EOL, end-of-life; SDM, shared decision making; EMR, electronic medical record; IPAL-ICU, Improving Palliative Care in the ICU; VALUE, Value family statements, Acknowledge emotions, Listen, Understand the patient as a person, Elicit questions; COMFORT, communication model (Connect, Options, Family caregivers).							

Operational components of SDM across the Three-Talk Model

Team Talk was the most frequently operationalized phase, described explicitly in 29 of the 31 studies (93.5%). Decision Talk followed at 24 (77.4%), whereas Option Talk was explicit in only 20 (64.5%), partial or implicit in a further 10 (32.3%), and absent in one (3.2%) (Table 2, Additional file 6). The operational components identified for each phase are summarized in Fig. 3.

Team Talk focused on identifying surrogate decision-makers, clarifying decision-making roles, reviewing advance directives, and initiating proactive clinician-family communication[29,30]. Early communication was frequently initiated through proactive family meetings and multidisciplinary engagement, including meetings within 72 hours of ICU admission and early psychosocial support[31,32]. Other protocols extended Team Talk throughout the ICU course through repeated family conferences, ongoing ethics or nursing support, and structured communication approaches[16,33,34]. Nurses and facilitators primarily contributed by preparing families, coordinating discussions, assessing support needs, and maintaining communication continuity rather than directing treatment decisions[34–36].

Table 2
Operationalization of SDM Across the Three-Talk Model

Three-Talk phase	Full, n (%)	Partial/implicit, n (%)	Not addressed, n (%)	Key operational elements
Team Talk	29 (93.5%)	2 (6.5%)	0 (0.0%)	Trust and rapport; family concerns, emotions, questions, and patient perspectives; emotional support and active listening; surrogate identification and advance directives; family/clinician preparation; structured meetings or daily contact; team alignment.
Option Talk	20 (64.5%)	10 (32.3%)	1 (3.2%)	Clinical condition, prognosis, likely outcomes, and treatment options; benefits, risks, uncertainty, and alternatives; brochures, decision aids, question prompts, and prognostic tools; checking understanding; care pathways including time-limited trials, palliative, and comfort-focused care.
Decision Talk	24 (77.4%)	7 (22.6%)	0 (0.0%)	Values, goals, preferences, fears, and acceptable burden; deliberation and negotiation; consensus on the care plan and review points; documentation of preferences, consensus, and treatment-limitation decisions; follow-up and reassessment.
All three phases	18 (58.1%)	12 (38.7%)	1 (3.2%)	Integrated coverage of patient/family engagement, option communication, and preference-based decision making.

Option Talk centred on discussion of treatment options, expected outcomes, and uncertainty surrounding different management strategies[31,32]. Several protocols also addressed treatment limitations and family understanding during option discussions[29]. More comprehensive approaches incorporated explicit option comparison using treatment-goal frameworks, prognostic tools, or structured decision-support approaches[18,46]. These approaches facilitated discussion of benefits, harms, and trade-offs between alternative strategies[43,44]. However, Option Talk remained less consistently operationalized than Team Talk, with some protocols describing prognosis or treatment planning without clearly specifying how alternative strategies were compared or weighed in relation to their potential benefits, burdens, and uncertainties[34,36]. Decision Talk involved eliciting patient or surrogate preferences, clarifying goals of care, negotiating treatment plans, and reaching agreement on subsequent management[29,31,33]. More explicitly operationalized approaches incorporated values clarification, treatment-goal discussions, and decision-support tools to address treatment preferences, expected outcomes, and acceptable burdens[18,44].

Integration of the three phases across the Three-Talk Model

Eighteen protocols (58.1%) operationalized all three phases explicitly, 12 (38.7%) covered all phases with at least one only partially or implicitly described, and one (3.2%) did not explicitly address Option Talk (Table 2, Additional file 6). Multidisciplinary models folded family engagement, goal clarification, option discussion, and an agreed care plan into coordinated encounters[31]. Serious-illness conversation models gathered prognostic information, treatment trade-offs, and patient priorities, including fears and acceptable burdens, before closing with a summary, a recommendation, and an affirmation of commitment[44]. Integration was not confined to a single encounter: Cheng et al.[53] distributed the process across two sessions, providing treatment information and a paper-based SDM tool initially and addressing preference-based decisions during a subsequent Decision Talk session. Partially integrated protocols commonly provided detailed descriptions of communication processes and goal clarification, whereas the comparison and appraisal of treatment alternatives were less consistently specified. The advanced practice nurse (APN) model incorporated family meetings and discussions of patient values and goals but did not explicitly describe treatment-option comparison[35]. Waseem et al.[36] linked pre- and post-SDM huddles, a standardised social worker-led family conversation, and electronic health record documentation, while explicit comparison of treatment options remained unspecified. Conversely, White et al.[16] emphasised treatment-option discussion and question prompting but provided less detail regarding how preferences were elicited and translated into final decisions.

Outcome patterns of SDM interventions

Communication and process outcomes were assessed most often (26 studies, 83.9%), followed by decision-making or goal concordance, psychological, and clinical or resource outcomes (17 each, 54.8%). Direction of effect was favorable in 17 studies (54.8%), showed no difference in 8 (25.8%), and was mixed in 5 (16.1%) (Fig. 4, Additional file 7).

Family knowledge of the clinical course and care plan rose from 35.4% to 87.6% once families joined round[40], and documentation followed suit: standardized meeting-note use increased from 26.9% to 83.3%[36], documented SDM discussions from 22% to 68%, and unidentified deterioration plans fell from 47.4% to 0%[52]. Improved understanding, however, did not reliably become goal-concordant care. Surrogates overestimated one-year survival (86.0-92.5% against a model estimate of 56.0%) and 43% favored treatment more

aggressive than reported patient preferences, even though they judged physicians' prognostic beliefs more accurately[18]; and although goals of care were discussed in 89% of contacts, goal-concordant care remained low and unchanged[49].

Reductions in post-traumatic stress disorder (PTSD), anxiety, and depression symptoms were observed at 3 months following structured family communication approaches[13], and a three-step support strategy for dying patients' relatives lowered prolonged grief and PTSD symptoms[14]. In others, enhanced communication or knowledge did not translate into less distress, anxiety, depression, or decisional conflict[16,17,48,53]. Clinical and resource outcomes moved in both directions. ICU bed-days fell from 8.0 to 5.9 per patient[31], and nonbeneficial interventions from a median of 3 to 2[13], lower ICU costs and shorter stays were reported without a difference in 90-day mortality[43], but shorter ICU stay also accompanied higher in-hospital mortality (36.0% versus 28.5%) with no difference at 6 months[16].

Methodological quality of included studies (MMAT)

We assessed methodological quality using MMAT[28] (Additional file 4), and summarised criterion-level ratings for each study (Additional file 8). Across the 31 included studies, the median number of MMAT criteria met was 4/5 (range 2–5). Overall, 5/31 (16.1%) studies met ≤ 2 criteria, while 18/31 (58.1%) met ≥ 4 criteria. Across study designs, several recurring limitations emerged at the criterion level: (1) Confounding and comparability: Nonrandomized before–after and quality improvement studies frequently lacked control groups or sufficient adjustment for baseline differences, limiting attribution of observed changes to SDM interventions. (2) Sampling and outcome completeness: Several studies involved single-centre or small samples, with limitations related to sample representativeness, low survey response rates, or incomplete follow-up, particularly for family-reported outcomes, and (3) Intervention implementation reporting: Although most studies described structured SDM components, including family meetings, communication approaches, or decision aids, some studies provided limited assessment of intervention fidelity or consistency of delivery.

Given the heterogeneity of study designs, MMAT findings were interpreted at the criterion level, with detailed ratings and methodological justifications presented in Additional file 8.

Discussion

Main findings

This review mapped 31 ICU EOL SDM studies using Three-Talk Model and identified how communication processes were translated into decision-making activities. Team Talk was the most frequently described phase, whereas Option Talk was less consistently reported. Most interventions provided mechanisms for initiating conversations, engaging families, and supporting information exchange; however, fewer studies described how clinicians and families compared treatment alternatives, addressed uncertainty, and incorporated patient values into subsequent decisions. These findings indicate that current ICU EOL SDM interventions have developed more mature communication structures than deliberative decision processes. This discrepancy may partly reflect the emphasis of previous research on intervention outcomes rather than on the mechanisms through which SDM is enacted. Outcome-focused syntheses have demonstrated the potential benefits of surrogate decision-making support but provide limited information about whether interventions explicitly address the sequential functions required for SDM. Bibas et al.[21] examined associations between surrogate decision-making interventions and patient, family, and resource outcomes, while Wang et al.[12] evaluated pooled effects of SDM interventions on clinical and psychosocial outcomes. Similarly, Kim et al.[23] explored family-involvement interventions across hospital EOL care using a family-involvement framework. Building on this evidence, the present review focused on whether adult ICU EOL SDM interventions explicitly operationalized Team Talk, Option Talk, and Decision Talk as components of the decision process.

Strengthening deliberation in ICU EOL decision-making

The predominance of Team Talk in reported interventions may reflect the relative feasibility of implementing communication-focused strategies within ICU workflows. Family meetings, surrogate identification, emotional preparation, and information exchange are observable activities that can be incorporated into structured protocols and evaluated through process indicators. Reifarth et al.[54] similarly identified family meetings, communication facilitators, and nurse–family interactions as commonly described approaches for supporting families during critical illness. However, establishing opportunities for discussion does not necessarily indicate that deliberation has occurred. The lower frequency and less detailed reporting of Option Talk identified in this review suggest a gap between providing information and supporting value-based comparisons among treatment choices. ICU EOL decisions often involve uncertain prognostic information, competing interpretations of acceptable outcomes, and potential burdens of LST. Under these circumstances, SDM requires clinicians and families to consider not only what treatments are available, but also how those treatments correspond with the patient's priorities and previously expressed values. Elwyn et al.[24] described Option Talk as the stage in which available choices are explored in relation to patient goals, rather than a process limited to presenting medical information. Similarly, Elwyn et al.[55] emphasized

that SDM involves deliberation among reasonable options and the integration of individual preferences into clinical decisions. The Observer OPTION5 framework developed further distinguishes between informing individuals about options and actively supporting their involvement in evaluating alternatives[56]. Therefore, the limited reporting of Option Talk should not be interpreted simply as an absence of discussion. Rather, it indicates that current intervention reports provide insufficient detail regarding how clinicians facilitate trade-off discussions, manage uncertainty, and connect treatment options with patient-defined goals.

From documented preferences to value-concordant decisions

Although Decision Talk was explicitly reported in many interventions, descriptions of how preferences influenced treatment decisions remained limited. Recording goals of care or documenting family preferences does not necessarily demonstrate that treatment choices reflect the patient's values. The critical step is the translation of preferences into decisions when clinicians and surrogates must weigh uncertain outcomes and competing priorities. Cox et al.[18]evaluated a personalized web-based decision aid for surrogate decision-makers of patients receiving prolonged mechanical ventilation. Although the intervention provided prognostic information and incorporated patient preferences, it did not eliminate differences between surrogate and clinician expectations regarding treatment outcomes. These findings suggest that decision-support tools may improve access to information but cannot replace interactive discussions that clarify values and treatment trade-offs. Kentish-Barnes et al.[14] evaluated a structured three-step support strategy for relatives of patients dying in the ICU and demonstrated that enhanced family support does not automatically translate into improved downstream decision outcomes. Curtis et al.[15] reported comparable complexity, showing that communication-facilitator interventions may improve aspects of EOL communication while producing variable effects on family psychological outcomes. Together, these findings highlight a distinction between documenting that a conversation occurred and demonstrating that care reflects patient priorities. Future ICU SDM research should therefore examine not only whether discussions take place, but also how preferences are elicited, interpreted, negotiated, and revisited throughout changing clinical circumstances.

Implications for ICU nursing practice and intervention design

ICU nurses remain engaged with patients and families throughout critical illness and contribute to SDM chiefly by enabling informed participation, sustaining communication continuity, and keeping patient priorities visible in interdisciplinary discussions. The FICUS trial showing that a nurse-led, interprofessional intervention for families improved family-rated communication, perceived cognitive and emotional support, and satisfaction with decision-making involvement[57]. However, because FICUS evaluated a broader support pathway rather than isolated Three-Talk components, its findings support the contribution of nursing involvement without demonstrating the effect of a specific SDM phase. During Team Talk, nurses may help families prepare for discussions and identify concerns that require attention. In Option Talk, they may facilitate questions, recognize misunderstandings, and support communication of treatment-related concerns to the interdisciplinary team. Through Decision Talk, they maintain continuity, documenting priorities, and ensure that agreed plans are communicated across providers and care transitions.

Strengths and limitations

This review provides a theory-informed analysis of ICU EOL SDM interventions by examining how reported intervention components correspond to the Three-Talk Model. Unlike previous reviews that primarily focused on intervention effectiveness or family outcomes, this approach identifies which decision-making functions are explicitly described and where reporting remains incomplete. And several limitations should be considered. The mapping was based on published descriptions of ICU EOL SDM processes; therefore, incompletely reported components may reflect limitations in reporting rather than the absence of these activities in clinical practice. Although a comprehensive search strategy was applied, the heterogeneity of study designs, intervention structures, and outcome measures limited direct comparison across studies. In addition, many included studies used non-randomized designs, small samples, or single-center settings, which may restrict interpretation of intervention effects. Variation in reporting of intervention delivery and fidelity also limited assessment of how consistently SDM processes were implemented. This review followed established systematic review methods and the PRISMA 2020 statement[25]. The Three-Talk Model provided an analytical framework for examining SDM processes but may not fully capture the iterative nature of ICU decision making.

Future ICU SDM studies should provide more detailed descriptions of how decision-making processes unfold over time. Intervention reports should specify: (1) how treatment alternatives are introduced and compared; (2) how uncertainty is communicated; (3) how patient values influence recommendations; (4) how different professionals contribute to each SDM phase; and (5) how implementation fidelity is assessed. Rather than treating SDM as a single communication event, future research should evaluate it as an evolving process involving patients' values, surrogate interpretation, clinician judgment, and interdisciplinary coordination.

Conclusion

The synthesis identified that ICU EOL SDM approaches have primarily focused on establishing communication with families and supporting surrogate involvement, whereas the processes through which treatment options are weighed and patient values are incorporated into decisions remain less clearly described. Applying the Three-Talk Model highlights that family communication alone does not constitute SDM; effective decision making requires structured discussions that connect clinical information, treatment choices, and individual preferences. Future research should evaluate not only whether SDM conversations occur, but also how options are compared, preferences are elicited, and decisions are aligned with patient values. More detailed reporting of intervention delivery and fidelity is needed to clarify how SDM approaches can be integrated into routine ICU practice.

Abbreviations

APN

Advanced practice nurse

EOL

End-of-life

ESICM

European Society of Intensive Care Medicine

ICU

Intensive care unit

LST

Life-sustaining treatment

MMAT

Mixed Methods Appraisal Tool

PRISMA

Preferred Reporting Items for Systematic Reviews and Meta-Analyses

PROSPERO

International Prospective Register of Systematic Reviews

PTSD

Post-traumatic stress disorder

RCT

Randomized controlled trial

SCCM

Society of Critical Care Medicine

SDM

Shared decision-making

SWiM

Synthesis Without Meta-analysis

TIDieR

Template for Intervention Description and Replication.

Declarations

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Not applicable.

Consent for publication:

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Author Contribution

M B: Conceptualization, Methodology, Investigation, Data curation, Writing-original draft, Writing-review & editing. Lj R: Investigation, Data curation, Validation, review & editing. Rc J: Investigation, Data curation, Validation, review & editing. Tt Y: Investigation, Validation, review. Lb Z: Investigation, Data curation. J Y: Investigation, Data curation. Mj L: Supervision, Project administration, Writing-review & editing. All authors read and approved the final manuscript.

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Availability of data and materials:

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

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The authors declare no competing interests.

References

1. Sprung CL, Ricou B, Hartog CS, Maia P, Mentzelopoulos SD, Weiss M, et al. Changes in End-of-Life Practices in European Intensive Care Units From 1999 to 2016. *JAMA* 2019;322:1692. <https://doi.org/10.1001/jama.2019.14608>.
2. Feldman C, Sprung CL, Mentzelopoulos SD, Pohrt A, Hartog CS, Danbury C, et al. Global Comparison of Communication of End-of-Life Decisions in the ICU. *CHEST* 2022;162:1074–85. <https://doi.org/10.1016/j.chest.2022.05.007>.
3. Scheunemann LP, Ernecoff NC, Buddadhumaruk P, Carson SS, Hough CL, Curtis JR, et al. Clinician-family communication about patients' values and preferences in intensive care units. *JAMA Intern Med* 2019;179:676. <https://doi.org/10.1001/jamainternmed.2019.0027>.
4. Sui W, Gong X, Qiao X, Zhang L, Cheng J, Dong J, et al. Family members' perceptions of surrogate decision-making in the intensive care unit: A systematic review. *Int J Nurs Stud* 2023;137. <https://doi.org/10.1016/j.ijnurstu.2022.104391>.
5. Li JR, Walker S, Nie JB. "Because this is my body": patients', families' and health professionals' perspectives on family-oriented informed consent in China. *BMC Med Ethics* 2026;27. <https://doi.org/10.1186/s12910-026-01422-6>.
6. Wu X, Tang Y, Chen J. The association of filial piety and financial toxicity with surrogate decisional conflict among adult children of ICU patients with cancer. *J Pain Symptom Manage* 2025;70. <https://doi.org/10.1016/j.jpainsymman.2025.07.023>.
7. Yan Y, Su T, Huang Q, Zhou Y. Reconstructing the boundary of family involvement in shared decision-making: a confucian benevolence model for the Chinese context. *BMC Med Ethics* 2026;27. <https://doi.org/10.1186/s12910-026-01520-5>.
8. Charles C, Gafni A, Whelan T. Shared decision-making in the medical encounter: What does it mean? (or it takes at least two to tango). *Soc Sci Med* 1997;44:681–92. [https://doi.org/10.1016/S0277-9536\(96\)00221-3](https://doi.org/10.1016/S0277-9536(96)00221-3).
9. Marshall MF, Davis FD, Fogelman PA, Oczkowski S, Reid JC, Arellano D, et al. Society of critical care medicine clinical practice guidelines on adult end-of-life care in the ICU. *Crit Care Med* 2025;53:e2734–46. <https://doi.org/10.1097/CCM.0000000000006856>.

10. Kesecioglu J, Rusinova K, Alampi D, Arabi YM, Benbenishty J, Benoit D, et al. European society of intensive care medicine guidelines on end of life and palliative care in the intensive care unit. *Intensive Care Med* 2024;50:1740. <https://doi.org/10.1007/s00134-024-07579-1>.
11. Development Panel of Expert Consensus on Shared Decision-Making in Clinical Practice (2026). Expert consensus on shared decision-making in clinical practice (2026). *Chinese Journal of General Practitioners*. 2026;25(5):512-9. <https://doi.org/10.3760/cma.j.cn116031.2026.1000202>.
12. Yin W, Wang Y, Lu J, Chen H, Zou S. Barriers and facilitators to intensive care unit nurses' participation in end-of-life decision-making: a scoping review. *J Vis Exp*. 2026;(234):e71900. doi:10.3791/71900.
13. Lautrette A, Darmon M, Megarbane B, Joly LM, Chevret S, Adrie C, et al. A communication strategy and brochure for relatives of patients dying in the ICU. *N Engl J Med*. 2007;356(5):469-478.
14. Kentish-Barnes N, Chevret S, Valade S, Jaber S, Kerhuel L, Guisset O, et al. A three-step support strategy for relatives of patients dying in the intensive care unit: a cluster randomised trial. *Lancet* 2022;399:656–64. [https://doi.org/10.1016/S0140-6736\(21\)02176-0](https://doi.org/10.1016/S0140-6736(21)02176-0).
15. Curtis JR, Treece PD, Nielsen EL, Gold J, Ciechanowski PS, Shannon SE, et al. Randomized trial of communication facilitators to reduce family distress and intensity of end-of-life care. *Am J Respir Crit Care Med*. 2016;193:154–62. <https://doi.org/10.1164/rccm.201505-0900OC>.
16. White DB, Angus DC, Shields AM, Buddadhumaruk P, Pidro C, Paner C, et al. A randomized trial of a family-support intervention in intensive care units. *N Engl J Med* 2018;378:2365–75. <https://doi.org/10.1056/NEJMoa1802637>.
17. Carson SS, Cox CE, Wallenstein S, Hanson LC, Danis M, Tulskey JA, et al. Effect of palliative care-led meetings for families of patients with chronic critical illness: a randomized clinical trial *JAMA* 2016;316:51. <https://doi.org/10.1001/jama.2016.8474>.
18. Cox CE, White DB, Hough CL, Jones DM, Kahn JM, Olsen MK, et al. Effects of a personalized web-based decision aid for surrogate decision makers of patients with prolonged mechanical ventilation: a randomized clinical trial. *Ann Intern Med* 2019;170:285–97. <https://doi.org/10.7326/M18-2335>.
19. Kryworuchko J, Hill E, Murray MA, Stacey D, Fergusson DA. Interventions for shared decision-making about life support in the intensive care unit: a systematic review. *Worldviews Evid Based Nurs*. 2013;10(1):3-16. doi:10.1111/j.1741-6787.2012.00247.x.
20. Pignatiello G, Hickman RL Jr, Hetland B. End-of-life decision support in the ICU: where are we now? *West J Nurs Res*. 2018;40(1):84-120. doi:10.1177/0193945916676542.
21. Bibas L, Peretz-Larochelle M, Adhikari NK, Goldfarb MJ, Luk A, Englesakis M, et al. Association of surrogate decision-making interventions for critically ill adults with patient, family, and resource use outcomes: a systematic review and meta-analysis. *JAMA Netw Open* 2019;2:e197229. <https://doi.org/10.1001/jamanetworkopen.2019.7229>.
22. Wang Y, Li J, Yin N, Huang B, Shen K, He S, et al. The effect of shared decision-making for critically ill patients: a systematic review and meta-analysis. *Front Med (Lausanne)* 2026;13. <https://doi.org/10.3389/fmed.2026.1726976>.
23. Kim Y, Kim DH. Interventions for family involvement enhance end-of-life care for hospitalized patients: an integrative review. *BMC Nurs* 2024;23:917. <https://doi.org/10.1186/s12912-024-02538-z>.
24. Elwyn G, Durand MA, Song J, Aarts J, Barr PJ, Berger Z, et al. A three-talk model for shared decision making: multistage consultation process. *BMJ* 2017;359. <https://doi.org/10.1136/bmj.j4891>.
25. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372. <https://doi.org/10.1136/bmj.n71>.
26. Hoffmann TC, Glasziou PP, Boutron I, Milne R, Perera R, Moher D, et al. Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. *BMJ* 2014;348. <https://doi.org/10.1136/bmj.g1687>.
27. Campbell M, McKenzie JE, Sowden A, Katikireddi SV, Brennan SE, Ellis S, et al. Synthesis without meta-analysis (SWiM) in systematic reviews: reporting guideline. *BMJ* 2020;368:l6890. <https://doi.org/10.1136/bmj.l6890>.
28. Hong QN, Gonzalez-Reyes A, Pluye P. Improving the usefulness of a tool for appraising the quality of qualitative, quantitative and mixed methods studies, the Mixed Methods Appraisal Tool (MMAT). *J Eval Clin Pract* 2018;24(3):459-467. doi:10.1111/jep.12884.
29. Lamba S, Murphy P, McVicker S, Harris Smith J, Mosenthal AC. Changing end-of-life care practice for liver transplant service patients: structured palliative care intervention in the surgical intensive care unit. *J Pain Symptom Manage* 2012;44:508–19. <https://doi.org/10.1016/j.jpainsymman.2011.10.018>.
30. Huffines M, Johnson KL, Smitz Naranjo LL, Lissauer ME, Fishel MA-M, D'Angelo Howes SM, et al. Improving family satisfaction and participation in decision making in an intensive care unit. *Crit Care Nurse* 2013;33:56–69. <https://doi.org/10.4037/ccn2013354>.

31. Lilly CM, De Meo DL, Sonna LA, Haley KJ, Massaro AF, Wallace RF, et al. An intensive communication intervention for the critically ill. *Am J Med* 2000;109:469–75. [https://doi.org/10.1016/S0002-9343\(00\)00524-6](https://doi.org/10.1016/S0002-9343(00)00524-6).
32. Mosenthal AC, Murphy PA, Barker LK, Lavery R, Retano A, Livingston DH. Changing the culture around end-of-life care in the trauma intensive care unit. *J Trauma* 2008;64:1587–93. <https://doi.org/10.1097/TA.0b013e318174f112>.
33. Schneiderman LJ, Gilmer T, Teetzel HD, Dugan DO, Blustein J, Cranford R, et al. Effect of ethics consultations on nonbeneficial life-sustaining treatments in the intensive care setting: a randomized controlled trial. *JAMA* 2003;290:1166. <https://doi.org/10.1001/jama.290.9.1166>.
34. Daly BJ, Douglas SL, O'Toole E, Gordon NH, Hejal R, Peerless J, et al. Effectiveness trial of an intensive communication structure for families of long-stay ICU patients. *Chest* 2010;138:1340–8. <https://doi.org/10.1378/chest.10-0292>.
35. Naef R, Von Felten S, Petry H, Ernst J, Massarotto P. Impact of a nurse-led family support intervention on family members' satisfaction with intensive care and psychological wellbeing: A mixed-methods evaluation. *Aust Crit Care* 2021;34:594–603. <https://doi.org/10.1016/j.aucc.2020.10.014>.
36. Waseem H, Keegan J, Farrell K, Hwang DY, Oliver B, Olm-Shipman C, et al. Implementation of a standardized shared decision-making bundle to improve communication practices in the neurocritical care unit. *Neurol Clin Pract* 2023;13:e200120. <https://doi.org/10.1212/CPJ.000000000000200120>.
37. Braus N, Campbell TC, Kwekkeboom KL, Ferguson S, Harvey C, Krupp AE, et al. Prospective study of a proactive palliative care rounding intervention in a medical ICU. *Intensive Care Med* 2016;42:54–62. <https://doi.org/10.1007/s00134-015-4098-1>.
38. Garrouste-Orgeas M, Max A, Lerin T, Grégoire C, Ruckly S, Kloeckner M, et al. Impact of proactive nurse participation in ICU family conferences: a mixed-method study. *Crit Care Med* 2016;44:1116–28. <https://doi.org/10.1097/CCM.0000000000001632>.
39. Torke AM, Wocial LD, Johns SA, Sachs GA, Callahan CM, Bosslet GT, et al. The Family Navigator: a pilot intervention to support intensive care unit family surrogates. *Am J Crit Care* 2016;25:498–507. <https://doi.org/10.4037/ajcc2016730>.
40. Allen SR, Pascual J, Martin N, Reilly P, Luckianow G, Datner E, et al. A novel method of optimizing patient- and family-centered care in the ICU. *J Trauma Acute Care Surg* 2017;82:582–6. <https://doi.org/10.1097/TA.0000000000001332>.
41. Awdish RL, Buick D, Kokas M, Berlin H, Jackman C, Williamson C, et al. A communications bundle to improve satisfaction for critically ill patients and their families: a prospective, cohort pilot study. *J Pain Symptom Managet* 2017;53:644–9. <https://doi.org/10.1016/j.jpainsymman.2016.08.024>.
42. Loeslie V, Abcejo MS, Anderson C, Leibenguth E, Mielke C, Rabatin J. Implementing family meetings into a respiratory care unit: a care and communication quality improvement project. *Dimens Crit Care Nurs* 2017;36:157–63. <https://doi.org/10.1097/DCC.0000000000000241>.
43. Wu SB, Lü AL. The application value of “shared decision-making model” in doctor-patient communication in ICU. *Medicine and Philosophy*. 2019;40(6):25-7,77.
44. Pasricha V, Gorman D, Laothamatas K, Bhardwaj A, Ganta N, Mikkelsen ME. Use of the Serious Illness Conversation Guide to improve communication with surrogates of critically ill patients: a pilot study. *ATS Sch* 2020;1:119–33. <https://doi.org/10.34197/ats-scholar.2019-00060C>.
45. Chang DW, Neville TH, Parrish J, Ewing L, Rico C, Jara L, et al. Evaluation of time-limited trials among critically ill patients with advanced medical illnesses and reduction of nonbeneficial ICU treatments. *JAMA Intern Med* 2021;181:786. <https://doi.org/10.1001/jamainternmed.2021.1000>.
46. Suen AO, Butler RA, Arnold RM, Myers B, Witteman HO, Cox CE, et al. A pilot randomized trial of an interactive web-based tool to support surrogate decision makers in the intensive care unit. *Ann Am Thorac Soc* 2021;18:1191–201. <https://doi.org/10.1513/AnnalsATS.202006-5850C>.
47. Zimmermann CJ, Zelenski AB, Buffington A, Baggett ND, Tucholka JL, Weis HB, et al. Best case/worst case for the trauma ICU: development and pilot testing of a communication tool for older adults with traumatic injury. *J Trauma Acute Care Surg* 2021;91:542–51. <https://doi.org/10.1097/TA.0000000000003281>.
48. Chen C, Sullivan SS, Lorenz RA, Wittenberg E, Li C, Chang Y. COMFORT communication in the ICU: pilot test of a nurse-led communication intervention for surrogates. *J Clin Nurs* 2022;31:3076–88. <https://doi.org/10.1111/jocn.16132>.
49. Kentish-Barnes N, Azoulay E, Reignier J, Cariou A, Lafarge A, Huet O, et al. A randomised controlled trial of a nurse facilitator to promote communication for family members of critically ill patients. *Intensive Care Med* 2024;50:712–24. <https://doi.org/10.1007/s00134-024-07390-y>.
50. Butler RA, Seaman JB, Felman K, Stonehouse W, San Pedro R, Morse JQ, et al. Randomized clinical trial of the Four Supports intervention for surrogate decision-makers in intensive care units. *Am J Respir Crit Care Med* 2025;211:370–80.

<https://doi.org/10.1164/rccm.202405-0931OC>.

51. Cox CE, Ashana DC, Dempsey K, Olsen MK, Parish A, Casarett D, et al. Mobile app-facilitated collaborative palliative care intervention for critically ill older adults: a randomized clinical trial. *JAMA Intern Med* 2025;185:173. <https://doi.org/10.1001/jamainternmed.2024.6838>.
52. Peters G, Milnes S, Simpson N, Gedye O, Kakho N, Corke C, et al. Six years of a clinical communication intervention in shared decision-making to promote documentation of goals of care for critically ill patients with a life-limiting illness. *Crit Care Resusc* 2025;27:100117. <https://doi.org/10.1016/j.ccrj.2025.100117>.
53. Cheng HY, Chao SY, Chen HH. The effect of shared decision-making on emergency management knowledge, anxiety, and mental health among family members of terminally ill patients in the ICU: a quasiexperimental study. *Nurs Res Pract* 2026;2026:8910437. <https://doi.org/10.1155/nrp/8910437>.
54. Reifarth E, Garcia Borrega J, Kochanek M. How to communicate with family members of the critically ill in the intensive care unit: a scoping review. *Intensive Crit Care Nurs* 2023;74:103328. <https://doi.org/10.1016/j.iccn.2022.103328>.
55. Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med* 2012;27. <https://doi.org/10.1007/s11606-012-2077-6>.
56. Barr PJ, O'Malley AJ, Tsulukidze M, Gionfriddo MR, Montori V, Elwyn G. The psychometric properties of Observer OPTION(5), an observer measure of shared decision making. *Patient Educ Couns* 2015;98:970–6. <https://doi.org/10.1016/j.pec.2015.04.010>.
57. Naef R, Jeitziner MM, Riguzzi M, Von Felten S, Verweij L, Rufer M, et al. Nurse- led family support intervention for families of critically ill patients: the FICUS cluster randomized clinical trial. *JAMA Intern Med*. 2025;185(9):1138-1149. doi:10.1001/jamainternmed.2025.3406.

Figures

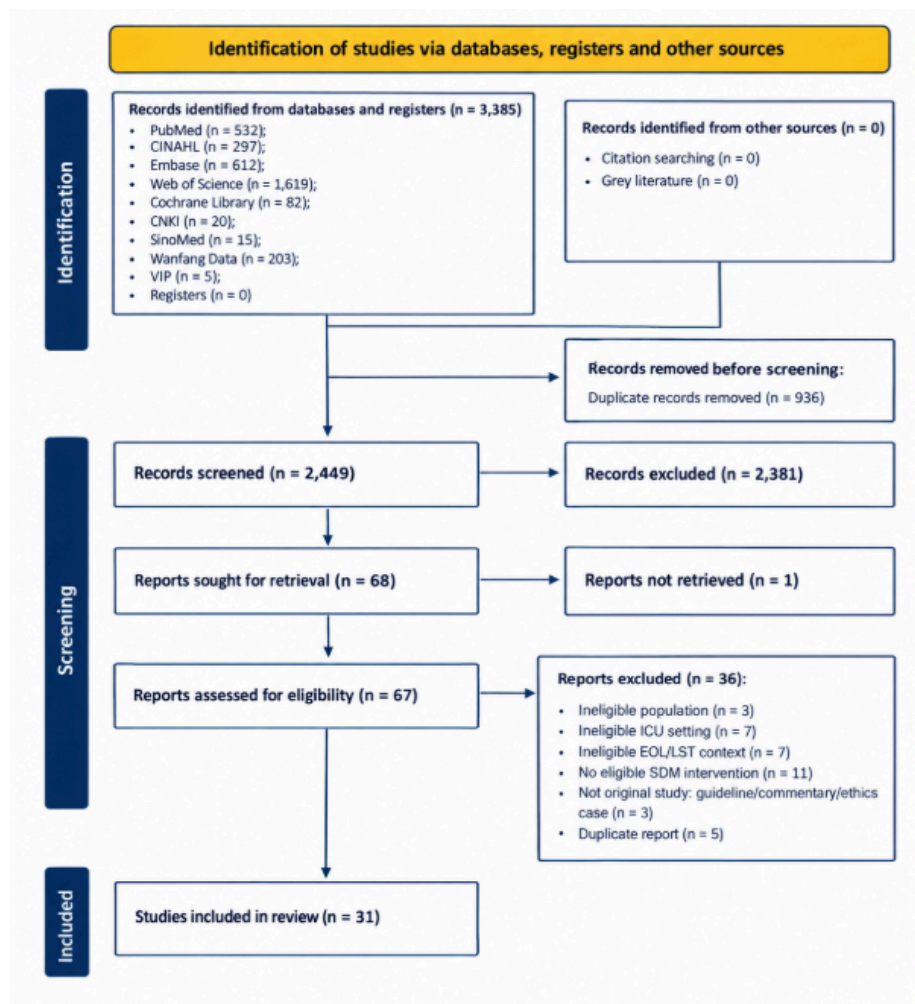


Figure 1

PRISMA flow diagram illustrating the study selection process

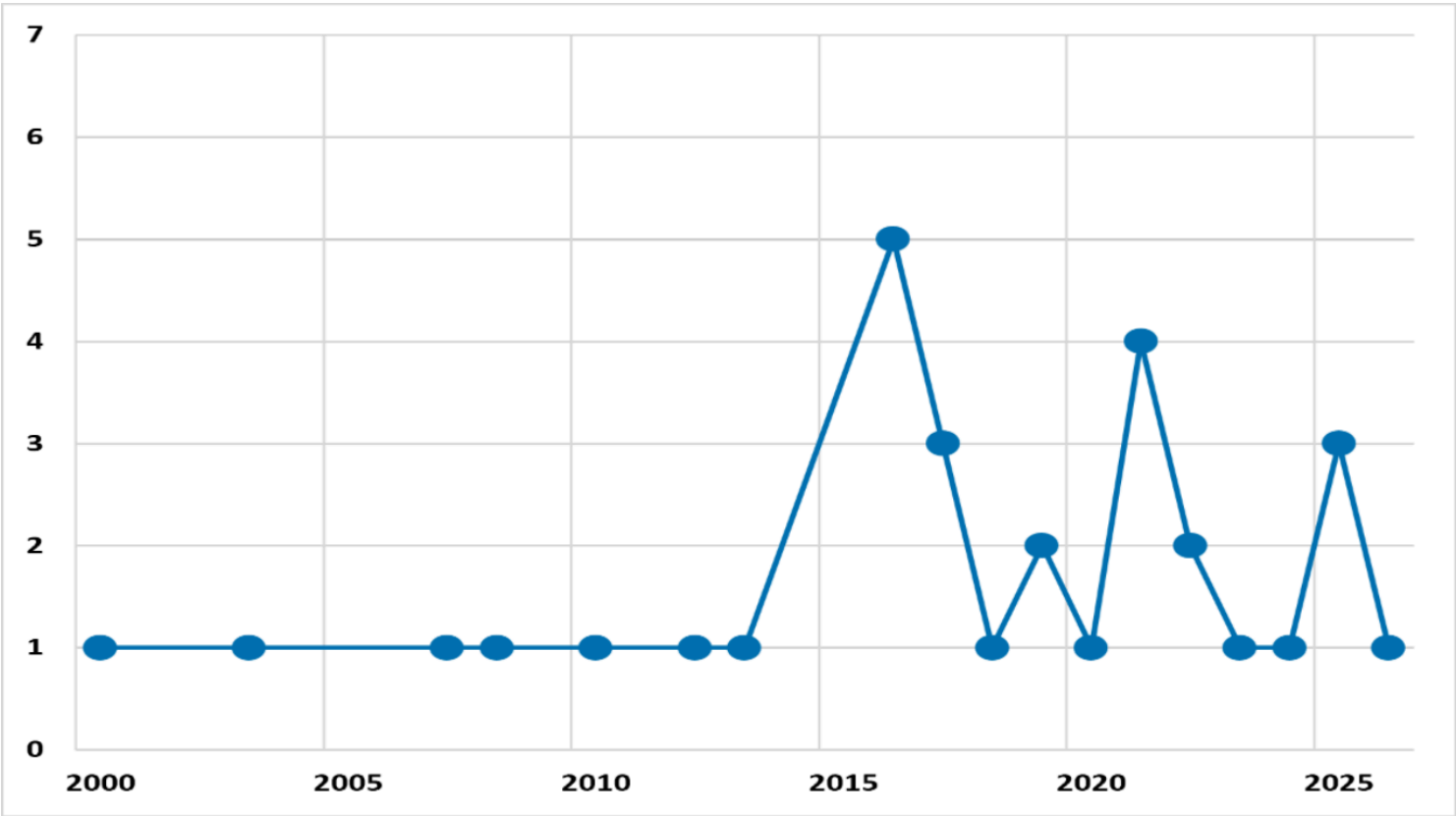


Figure 2
Number of published studies per year

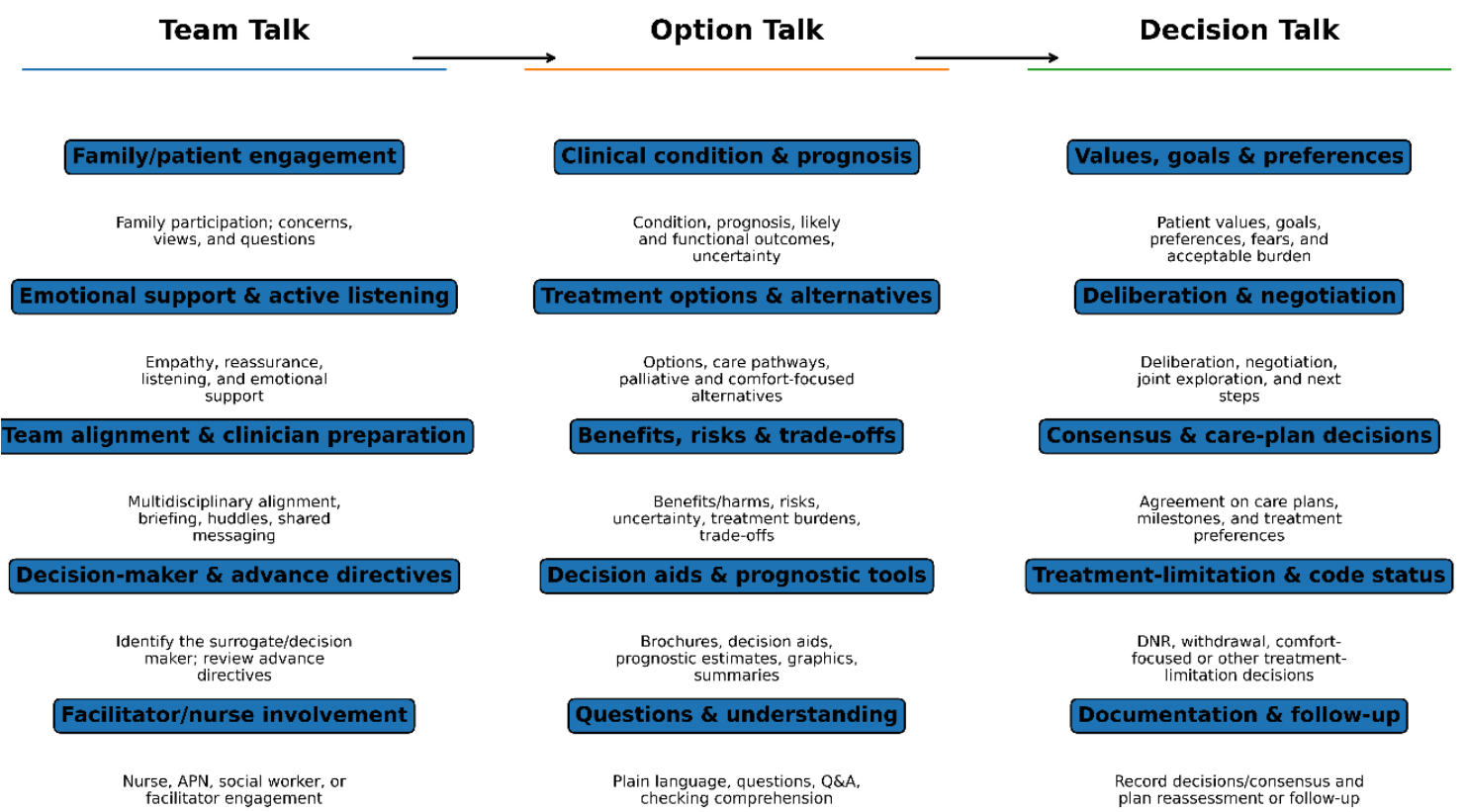


Figure 3

Operational components of SDM across the Three-Talk phases

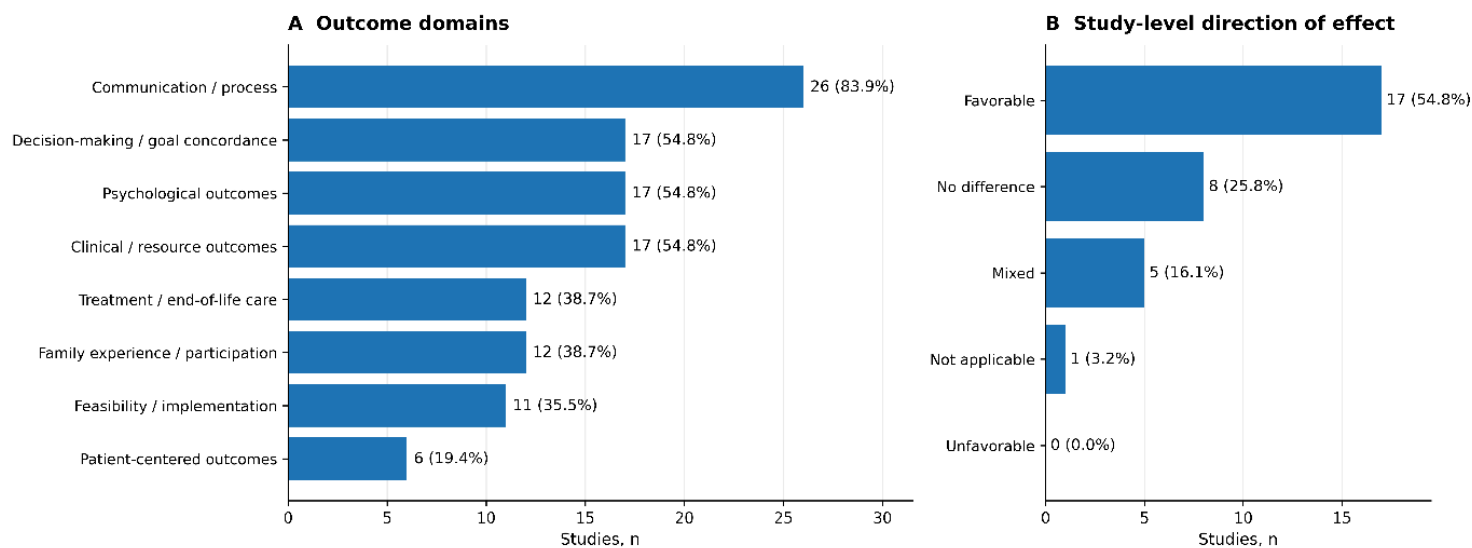


Figure 4
Outcomes asseeed and direction of effect across included studies

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