Supplementary Materials - Table of Contents

1. Methods Overview

The guideline was conducted in accordance with SCCM's standard operating procedures for Guideline Development, and in accordance with Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) Approach. [1]

Panel Selection

A call for interested panel members was submitted to the SCCM membership and through the SCCM Ethics Committee membership in 2021. Selection criteria included: diversity of professional expertise in clinical care and/or research in topic areas associated with end of life care in the ICU and/or ethics; diversity of practice environment to include urban, suburban and rural health care system representation; diversity of stage in career to include early, mid and advanced career clinicians; and, diversity in personal demographics with the intent that our panel represent the diverse communities to which our ICU patients belong. Two methodologists from the GUIDE group provided support in screening retrieved references from electronic databases, extracting and analyzing retrieved data, constructing evidence summaries, facilitating discussion of recommendations.

Conflict of Interest

All members of the panel were reviewed for conflict of interest at empanelment and again in the final writing process of the guidelines. Any panelist with a conflict of interest abstained from voting on PICO question recommendations.

Question selection and outcome prioritization

Working from an initial list of questions from the leadership team, panel members had an opportunity to submit additional PICO questions for consideration of inclusion in the guideline. The list of potential guideline topics was condensed by the leadership team into questions using a structured PICO (population, intervention, comparison, outcome) format. The entire panel met virtually and developed consensus on the 10 included PICO question. Panelists were assigned to the working group for each PICO question on the basis of clinical expertise, academic interest, and to avoid potential conflicts of interest, identified in accordance with SCCM policy. Each PICO working

group met virtually to develop a list of outcomes which were prioritized as “critical,” “important,” or “not important” to decision-making, in accordance with GRADE approach.[2]

Search strategy and study selection

A medical librarian conducted systematic searches of databases from 2000 (or more recently, if an existing systematic review was available) until January 2023; the search was updated October 8 2024.[3] The literature search was performed by an information specialist following PRISMA-S guidance [4] and using a peer-reviewed search strategy (see below) The search strategy was reviewed according to the methods described in McGowan, 2016[5]. Published literature was identified by searching the following bibliographic databases: MEDLINE with in-process records and daily updates via Ovid; Embase via Ovid; CINAHL and the Cochrane Clinical Trials Register. The search strategy consisted of both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were: end of life care, ICU/critical care, decision making, advance care planning, consultation services, policy, protocolized approaches, cultural traditions, discrimination, training, and education.

A methodological filter was applied to all but one question, to limit the retrieval to reports of randomized controlled trials and/or observational studies, excluding case series. Retrieval was limited to the human population where possible. The MEDLINE and Embase strategies were run simultaneously as a multi-file search in Ovid and the results de-duplicated using the Ovid de-duplication tool. Any additional duplicates were identified and removed in EndNote and Covidence.

Each title and abstract was screened in duplicate by two separate reviewers, with reference assessed as relevant by either screener advanced to full-text screening. Full text screening was done in duplicate, with a third reviewer making a final decision of study eligibility in the event of disagreement. (See PRISMA flow diagrams, below)

Data abstraction, analysis, and evidence summaries

The methodology team conducted data abstraction using a standardized spreadsheet, assessing risk of bias using the modified Cochrane Risk of Bias tool for RCTs and Newcastle-Ottawa for non-randomized interventional studies.

1. Methods Overview

[6, 7] Extraction was done in duplicate to ensure accuracy of data. Where feasible, meta-analyses of evidence for each PICO were conducted using RevMan 5.4. [8] For dichotomous variables, we reported relative risk (RR) and absolute risk difference (RD). For continuous variables mean difference (MD), or standardized mean difference (SMD), as appropriate, each with a corresponding 95% confidence interval (95% CI). For each outcome for which there was data available, we rating the certainty of evidence as "high," "moderate," "low," or "very low" in accordance with standard GRADE practice.[9-15] Qualitative evidence, or data otherwise not amenable to meta-analysis was extracted by a single methodologist and summarized narratively in tables.

Development and voting upon recommendations

Each PICO working group provided feedback on the evidence summaries and worked through an Evidence-to-Decision (EtD) framework to develop a draft recommendation for each PICO using GRADEPRO GDT Software.[16, 17] The ETDs considered the balance of desirable and undesirable effects, the certainty of evidence, resource implications, equity, feasibility, and acceptability of each intervention. If appropriate, the panel made a Best Practice Statement (BPS) in accordance with GRADE guidance.[18] The entire panel voted on each recommendation, its justification, implementation issues, and research considerations using GRADEPRO's PanelVoice software. Following SCCM practice, >80% agreement of 80% of eligible panel voters was considered consensus for a recommendation. If agreement was not obtained, the leadership team reviewed the recommendation, to address concerns raised by dissenting panel members, and conducted a re-vote.

References

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3. Covidence, Covidence Systematic Review Software [Computer Software]. 2017.
4. Rethlefsen ML, et al. PRISMA-S: an extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews. Syst Rev. 2021 Jan 26;10(1):39. https://doi.org/10.1186/s13643-020-01542-z

5. McGowan J, et al. PRESS Peer Review of Electronic Search Strategies: 2015 Guideline Statement. J Clin Epi. 2016(75):40-46. https://doi.org/10.1016/j.jclinepi.2016.01.021).

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7. Peterson, J., Welch V, Losos, M, Tugwell P. The Newcastle-Ottawa scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses. 2011; Available from: https://ca/programs/clinical_epidemiology/oxford.asp.2001.
8. Manager, R., Version 5.4. Copenhagen: The Nordic Cochrane Centre, The Cochrane Collaboration. 2014.
9. Guyatt, G.H., et al., GRADE guidelines 6. Rating the quality of evidence--imprecision. J Clin Epidemiol, 2011. 64(12): p. 1283-93.
10. Guyatt, G.H., et al., GRADE guidelines: 7. Rating the quality of evidence--inconsistency. J Clin Epidemiol, 2011. 64(12): p. 1294-302.
11. Guyatt, G.H., et al., GRADE guidelines: 5. Rating the quality of evidence--publication bias. J Clin Epidemiol, 2011. 64(12): p. 1277-82.
12. Guyatt, G.H., et al., GRADE guidelines: 8. Rating the quality of evidence--indirectness. J Clin Epidemiol, 2011. 64(12): p. 1303-10.
13. Guyatt, G.H., et al., GRADE guidelines: 9. Rating up the quality of evidence. J Clin Epidemiol, 2011. 64(12): p. 1311-6.
14. Guyatt, G.H., et al., GRADE guidelines: 4. Rating the quality of evidence--study limitations (risk of bias). J Clin Epidemiol, 2011. 64(4): p. 407-15.
15. Balshem, H., et al., GRADE guidelines: 3. Rating the quality of evidence. J Clin Epidemiol, 2011. 64(4): p. 401-6.
16. Alonso-Coello, P., et al., GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction. BMJ, 2016. 353: p. i2016.
17. GRADEpro guideline development tool [software]. McMaster University, 2015. 435.

18. Dewidar O, Lotfi T, Langendam MW, Parmelli E, Parkinson ZS, Solo K, Chu DK, Mathew JL, Akl EA, Brignardello Petersen R, Mustafa RA. Good or best practice statements: proposal for the operationalisation and implementation of GRADE guidance. BMJ evidence-based medicine. 2023 Jun 1;28(3):189-96.

2. Table of PICO questions

Clinical question		Structured PICO question
Theme 1: Improving communication about end of life care in the ICU		
1.1	Should we recommend specific interventions to enhance shared-decision making between patients, family members/surrogates, and the clinical team? (clinical team can include ICU, but also other specialty services, such as palliative medicine, surgery, oncology)	For adult patients in ICU for whom there is a need for EOL decisions, do interventions to enhance shared decision-making between patient, surrogate decision makers/family and the multidisciplinary-multi-professional health care team improve patient, family, clinician, and institutional outcomes?
1.2	Should we recommend specific interventions to ensure procedural due process for substitute decision-making on behalf of decisionally incapable patients?	For adult patients in ICU for whom there is a need for EOL decisions and who are decisionally incapable, do interventions to ensure procedural due process for identifying and educating substitute decision-makers improve patient, family, clinician, and instititional outcomes?
1.3	Should we recommend consultation with such services as clinical ethics, moral distress, palliative medicine, ICU psychology and/or pastoral/ spiritual care to prevent or mitigate conflicts over treatment decisions at end of life?	For adult patients in ICU for whom there are potential or actual conflicts over treatment decisions at EOL, does consultation with services with relevant expertise, including clinical ethics, moral distress, palliative medicine, ICU psychology, and/or pastoral/ spiritual care, improve patient, family, clinician, and instutional outcomes?
1.4	Should we recommend specific institutional policies to reduce futile and potentially inappropriate treatments when there are conflicts during end of life decision-making?	For adult patients in ICU for whom there are actual conflicts over treatment decisions at EOL, do institutional policies/practices with due process elements improve patient, family, clinician, and instutitional outcomes?
Theme 2: Improving provision of end of life care/symptom management for patients in the ICU		
2.1	Should we recommend specific treatments to ensure delivery of effective symptom management for dying ICU patients?	For adult patients in the ICU who are expected to die following withdrawal of life-sustaining therapies or due to disease progression, do protocolized/standardized approaches for symptom management (including pharmacological and non-pharmacological treatments) improve patient, family, clinician, and institutional outcomes?
2.2	Should we recommend specific interventions to address the cultural, spiritual and family traditions and needs of patients and families in the ICU at the end of life?	For adult patients in the ICU at end of life, do specific interventions to address cultural, spiritual, and family traditions and needs improve patient, family, clinician, and institutional outcomes?
2.3	Should we recommend specific interventions such as collaboration with Palliative Medicine, mental health specialists , Spiritual Care or other care process strategies such as care protocols to address, prevent, or mitigate suffering for ICU patients who are at risk of dying in the ICU.	For adult patients in the ICU at end of life, does collaboration with palliative medicine, mental health, spiritual care improve quality patient, family, clinician, and instutitional outcomes?

2. Table of PICO questions

Theme 3: Addressing educational needs of clinicians, patients, families, and surrogate decision-makers in ICU end of life care		
3.1	Should we recommend strategies and policies to identify, prevent, and mitigate inequities based upon gender, gender identity, sexual orientation, race, ethnicity, faith traditions, country of origin or socioeconomic status at the end of life?	For adult ICU patients at risk of dying, do specific interventions to identify and address discrimination and inequities in end of life care driven by gender, gender identity, sexual identity, race, ethnicity, faith traditions, country of origin or socioeconomic status improve patient, family, clinician, or institutional outcomes?
3.2	Should we recommend specific interventions or strategies, such as palliative care education, to increase the capacity of ICU team members to deliver high quality end of life care in the ICU?	For clinicians working in adult ICUs, do interventions to incrase capacity of ICU team members to provide palliative care (eg. education) improve patient, family, clinician, and institutional outcomes?
3.3	Should we recommend specific interventions or strategies, such as education efforts, to improve the understanding and expectations of patients at risk of ICU admission, their families, and non-ICU clinicians about end of life care in the ICU?	For adults patients and their families, do interventions and strategies to improve understanding and expectations for end of life care in the ICU improve understanding of EOL treatment options, advance directive completion, and decision-making at end of life?

3. Electronic Search Strategies

Research Question(s): For adult ICU patients at risk of death, what interventions aid with decision making/conflict resolution, address suffering and enhance capacity for end of life care.

- **Patient population:** Adults, at/nearing end of life in intensive care units
- **Intervention group:** enhanced shared decision making, substitute decision makers, consultation services, institutional practices/policies for decision making, protocolized approach to symptom management, addressing cultural/spiritual needs, mitigating discrimination, palliative care training for ICU staff, educational interventions

Search by: Karin Dearness (kdearnes@stjosham.on.ca)
Requestor: Simon Oczkowski, Julie Reid
Date(s): January 31, 2023

Limits: Human, adults (≥18 years), publication year ≥2000 (or more recent, depending on PICO and existing review):

PICO	Year
1.1	≥ 2013
1.2	≥ 2018
1.3	≥ 2020
1.4	≥ 2000
2.1	≥ 2013
2.2	≥ 2019
2.3	≥ 2020
3.1	≥ 2000
3.2	≥ 2000
3.3	≥ 2014

Databases: Ovid Medline [ppez], Embase [oemezd], Cochrane Clinical Trials Register [CCTR], AHMED [amed], CINAHL, PsycInfo [psyh], ClinicalTrials.gov

Filters: RCTs OR observational studies (depending on question):

PICO	RCT	Observational
1.1	X	
1.2	X	X
1.3	X	X
1.4	X	X
2.1	X	X
2.2	X	X
2.3	X	X
3.1		
3.2	X	
3.3	X	

Format: RIS output, duplicates removed (for importing into Covidence)
Alerts: Not automated, clients will reach out as and when update(s) needed
Additional Searching: none

Concept #1: End of Life
Palliative care/
Terminal care/
Terminally ill/
(terminal* or palliative or dying or hospice* or ((advanced or late or last or end or final) adj (stage* or phase*))).ti,ab,kw.

("terminal* ill*" or "terminal disease").ti,ab,kw.
(advanced adj6 (disease* or cancer or illness)).ti,ab,kw.
(("end stage" or "end-stage" or endstage or "late stage" or "late-stage") and (disease* or illness)).ti,ab,kw.
("end-of-life" or "End of life" or (life adj limit*) or eol).ti,ab,kw.
(near-death or death or dies or die or dying or palliati*).ti,ab,kw.
Exp hospices/
exp Hospice Care/
((hospice adj care) or (hospice adj caring)).ti,ab,kw.

Concept #2: ICU/Critical care
exp *Critical Care/ use ppez
*Critical Care Nursing/ use ppez
exp *Critical Illness/ use ppez
exp *Intensive Care Units/ use ppez
exp *Intensive Care/ use oemezd
exp *Intensive Care Unit/ use oemezd
(((acute* OR intensive* OR critical* OR neurointensive* OR neuro-intensive* OR neurocritical* OR neuro-critical*) ADJ (care OR therap* OR treatment* OR unit?)) OR healthcare facilit* OR health-care facilit*).ti,kf,kw.
(ICU OR MICU OR CICU OR CVICU OR CCU OR SICU OR POCCU OR ITU OR HDU OR ICUs OR MICUs OR CICUs OR CVICUs OR CCUs OR SICUs OR POCCUs OR ITUs OR HDUs).ti.
((ICU OR MICU OR CICU OR CVICU OR CCU OR SICU OR POCCU OR ITU OR HDU OR ICUs OR MICUs OR CICUs OR CVICUs OR CCUs OR SICUs OR POCCUs OR ITUs OR HDUs) AND ((acute* OR intensive* OR critical* OR neurointensive* OR neuro-intensive* OR neurocritical* OR neuro-critical*) ADJ (care OR therap* OR treatment* OR unit?))).tw,kf,kw.
(intensive care unit? OR intensive therapy unit? OR burn unit? OR coronary care unit? OR high dependency unit? OR recovery room? OR respiratory care unit? OR "acute hospital setting" OR "acute hospital settings").tw,kf,kw.

Concept #3: Shared decision making (PICO 1.1)

exp Decision Making/
exp Decision support techniques/
(decide or deciding or decision or decisionmak*).tw.
Communication/
communicates.tw.
cooperative behavior/
(collaborate? or cooperate?).ti,ab,kw,kf.
Interdisciplinary Communication/ or interprofessional relations/ or patient care team/
(interdisciplinary or multidisciplinary).ti,ab,kw,kf.
Patient participation/ or consumer participation/ or Physician-nurse relations/ or doctor nurse relation/ or patient compliance/ or patient care planning/ or Physician-patient relations/
Profession-Family Relations/ or Family Nursing/
(family adj (centered or focused or meetings or conferences)).ti,ab,kw. or family/px
Exp Advance care planning/ or Advance? Care planning.ti,ab,kf,kw.
Exp Advance Directives/ or Advance? Care Directive?.ti,ab,kf,kw.

Concept #4: Substitute decision making (PICO 1.2)
exp advance Directives/ and Decision Making/
Advance Care Planning/
Advance Directive Adherence/
Living Wills/
Proxy/
Exp Third-Party Consent/
Presumed Consent/
Patient Preference/ and Decision Making/
(exp Family/ or Critically ill/ or Terminally ill/ or Caregivers/ or Legal Guardians/ or Moral Obligation/ or Personal Satisfaction/) and Decision Making/
Advance? Care planning.mp.
((Advance? or adherence?) ADJ2 Directive?).mp.
(alternate? adj3 (decision-mak* or decisionmak* or consent*)).mp.

(alternative?? adj3 (decision-mak* or decisionmak* or consent*)).mp.
((carer? or caregiver? or care-giver?) adj3 (decision-mak* or decisionmak* or consent*)).mp.
((family or families) adj3 (decision-mak* or decisionmak* or consent*)).mp.
(guardian* adj3 (decision-mak* or decisionmak* or consent*)).mp.
((proxy or proxies) adj3 (decision-mak* or decisionmak* or consent*)).mp.
((presumed or presume) adj (decision-mak* or decisionmak* or consent*)).mp.
(relative? adj3 (decision-mak* or decisionmak* or consent*)).mp.
(spous??? adj3 (decision-mak* or decisionmak* or consent*)).mp.
(surrogate? adj3 (decision-mak* or decisionmak* or consent*)).mp.
((community or third party??) adj2 (decision-mak* or decisionmak* or consent*)).mp.
((family or families or carer? or caregiver? or care-giver? or guardian* or proxy or proxies or representatite? or spous???) adj3 (share or shares or shared or sharing) adj2 (decision-mak* or decisionmak* or consent?)).mp.
(consent adj2 board?).mp.
decisional surrogate?.mp.
((decision-mak* or or decisionmak*) adj2 representative?).mp.
((health* or legal) adj2 (proxy or proxies)).mp.
("living will" or "living wills").mp.
substitute health-care decision*.mp.
substitute healthcare decision*.mp.
(surrogacy and (decision* adj3 authorit*)).mp.
surrogate consenter?.mp.
(surrogate and (decision* adj3 authorit*)).mp.
third party decision*.mp.
"power? of attorney".mp.
(patient?? adj1 agent?).mp.
(patient? adj2 (proxy or proxies)).mp.
(patient?? adj2 (surrogate? or surrogacy)).mp.
attorney for personal.mp.
attorney-in-fact.mp.

public guardian?.mp.
public trustee?.mp.

Concept #5: Consultation services/ collaboration with palliative medicine, mental health services or spiritual care services (PICOs 1.3 and 2.3)

Palliative Medicine/ use ppez or Palliative Therapy/ use oemezd
((palliative medicine) or (palliative care medicine)).ti,ab,kw,kf.
"Hospice and Palliative Care Nursing"/ use ppez or exp Palliative Nursing/ use oemezd
((hospice ADJ nursing) or (palliative care nursing)).ti,ab,kw,kf.
Hospice Care/
((hospice or bereavement or comfort or supportive) adj (care or program? or counseling or treatment or therapy)).ti,ab,kw,kf.
exp "Referral and Consultation"/
(consultation or referral?).ti,ab,kw,kf.
Exp Spiritual Therapies/ or (Spiritual adj (care or healing? or therapy or therapies)).ti,ab,kw,kf. OR Pastoral Care/ or (Pastoral ADJ (care or psychology)).ti,ab,kw,kf.
Exp Religious Personnel/ or (Minister? or priest? or bishop? or pastor? or rabbi? or clergy or monk? or nun?).ti,ab,kw,kf.
Exp Mental Health Services/ or ((Mental ADJ (health or hygiene) ADJ service?)).ti,ab,kw,kf. Or (psychologist? or psychiatrist?).ti,ab,kf,kw.
Ethicists/ or (bioethicist? or ethicist?).ti,ab,kw,kf.
Health Educators/ or (health educator?).ti,ab,kw.
Hospital Volunteers/ or (hospital volunteer?).ti,ab,kw,kf.
Social workers/ or (social worker? or "case worker" or "social case worker").ti,ab,kw,kf.

Concept #6: Policies/practice on conflict resolution (PICO 1.4)
Organizational Policy/
Exp Policy/ use ppez
organi?ational polic*.ti,ab,kw,kf.

(policy or policies).ti,ab,kw,kf.
((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf.

AND

Family conflict/
Conflict/ use oemezd
Conflict, Psychological/
Conflict*.ti,ab,kw,kf.
Medical Futility/ use ppez
((Futile or futility) ADJ (treatment* or medical)).ti,ab,kw,kf.

Concept #7 : Protocolized approaches for symptom management (withdrawl of life support) (PICO 2.1)
Resuscitation Orders/ use ppez
(resuscitation ADJ (decision* or order* or policy or policies)) .ti,ab,kw,kf.
Cardiopulmonary Resuscitation/
(cpr or (("cardio pulmonary" or "cardio-pulmonary" or cardiopulmonary or "mouth to mouth" or "mouth-to-mouth") ADJ resuscitation*)).ti,ab,kw,kf.
((Passive or negative) ADJ euthanasia) .ti,ab,kw,kf.
((withdrawl or withdrawal or withhold or withholding) ADJ ("life-prolonging treatment" or "allowing to die")).ti,ab,kw,kf.
Advance directive adherence/ use ppez or (living will/ or "advance care planning"/) use oemezd
Advance directive*.ti,ab,kw,kf.
((Directive or guideline) ADJ (adherence* or compliance)) .ti,ab,kw,kf.
((dnr or "do not resuscitate" or resuscitation) ADJ order*).ti,ab,kw,kf.
Life Support Care/

("life support care" or "life prolongation" or "prolongation of life" or (extraordinary ADJ treatment*)).ti,ab,kw,kf.
Withholding treatment/ use ppez or treatment withdrawal/ use oemezd
((Treatment* or care) ADJ (cessation* or withdrawl or withdrawal or withhold or withholding)) .ti,ab,kw,kf.
TU.FS.
Ventilator Weaning/
((Ventilator or ventilation or "life support" or "life-sustaining" or respirator) ADJ2 (weaning or withdraw or withdrawl or withdrawal or withdrawing)).ti,ab,kw,kf.
("Terminal weaning" or "Immediate extubation" or "Treatment limitation").ti,ab,kw,kf.
Pain management/ use ppez or analgesia/ use oemezd
(Symptom* ADJ (manage or management)).ti,ab,kw,kf.

AND

Documentation/st
"Forms and Records Control"/st
Practice Guidelines as Topic/
Medical Records/st
Organizational Policy/
Exp Policy/ use ppez
organi?ational polic*.ti,ab,kw,kf.
(policy or policies).ti,ab,kw,kf.
((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf.

Concept #8: Cultural, spiritual and family traditions (PICO 2.2)
Pastoral Care/

((Spiritual or pastoral) ADJ (care or comfort or distress or well-being or support or psychology)).ti,ab,kw,kf.
Exp Culture/
(cultural or customs or belief* or "family tradition" or "family traditions" or ceremonial or ritual or rituals).ti,ab,kw,kf.

(searching the free text term “culture” yields too many spurious results related to petrie culture and was omitted from the search)

Concept #9: Policies/strategies to prevent or address discrimination/inequity (PICO 3.1)
Exp Social Discrimination/
(discrimination* or ableism or able-ism or disableism or homophobia* or racism or ethnicism or sexism or xenophobia or ageism or fatphobia* or prejudice*).ti,ab,kw,kf.
(("anti gay" or homosexual or anti-homosexual or anti-gay or "sexual orientation") ADJ (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf.
((racist or racial or "racially motivated" or "racially-based" or ethnic or ethnicity-based or ethnicity-related) ADJ (bias or prejudice* or behavior or behaviour)).ti,ab,kw,kf.
((hidden or implicit or subconscious or unconscious) ADJ (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf.
((gender or sex) ADJ (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf.
Exp Prejudice/
(("anti fat" or anti-fat or fat or obesity or weight) ADJ (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf.
((gender) ADJ (equality or equity or equalities or equities)).ti,ab,kw,kf.
("anti semitism" or anti-semitism* or islamophobia*).ti,ab,kw,kf.
Health Equity/
((health) ADJ (equality or equity or equalities or equities)).ti,ab,kw,kf.

And

Organizational Policy/

Exp Policy/ use ppez
organi?ational polic*.ti,ab,kw,kf.
(policy or policies).ti,ab,kw,kf.
((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf.

Concept #10: Palliative care training for ICU staff (PICO 3.2)
Exp Inservice training/
Interprofessional education/
Medical education/
Exp Education, Continuing/
Exp Teaching/
((interprofessional or Inservice or "in service" or "in-service" or "on the job" or "on-the-job" or orientation or academic) ADJ (training or program* or education)).ti,ab,kw,kf.
(training or education or educational).ti,ab,kw,kf.

and Concept #1 (Palliative care)

Concept #11: Educational interventions for patients in hospital (PICO 3.3)
Exp Education/
((patient or family or consumer) ADJ2 (education or information)).ti,ab,kw,kf.
("educational interventions" or "educational intervention").ti,ab,kw,kf.

AND

Exp Patient Care Planning/
((Care) ADJ2 (goal* or plan*)).ti,ab,kw,kf.
(advance ADJ2 planning).ti,ab,kw,kf.
("expectations of care" or GOCD).ti,ab,kw,kf.

AND

Exp Hospitals/ or exp Hospital Units/ use ppez or exp *Hospital/ use oemezd
exp *Ward/ use oemezd
Hospitalization/ use ppez or *Hospitalization/ use oemezd
*Hospital care/ or *Intensive care/ use oemezd
*Hospital service/ use oemezd
exp HOSPITAL DEPARTMENTS/ or HOSPITAL SHARED SERVICES/ use ppez
MEDICAL STAFF, HOSPITAL/ or HOSPITALISTS/ use ppez or *Hospital personnel/ or *Hospital physician/ or *Medical staff/ or *Resident/ use oemezd
Inpatients/ use ppez or *hospital patient/ use oemezd
Patient transfer/ use ppez
*"length of stay"/ or *hospital admission/ or *Hospital discharge/ or *Hospital readmission/ or *Patient transport/ use oemezd
hospital$.ab.
(hospital$ or WARD or WARDS).ti.
"length of stay"/ or Patient admission/ or Patient discharge/ or Patient readmission/ or ((patient? or hospital$).ti,hw. and (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?).ti.) or "length of stay".ti.
(((patient? or hospital?) adj2 (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) or "length of stay").ab.
(inpatient? or in?patient?).ti.

Filter: RCTs
Randomized Controlled Trial or Controlled Clinical Trial or Pragmatic Clinical Trial or Equivalence Trial or Clinical Trial, Phase III).pt.
Randomized Controlled Trial/
exp Randomized Controlled Trials as Topic/

"Randomized Controlled Trial (topic)"/
Controlled Clinical Trial/
exp Controlled Clinical Trials as Topic/
"Controlled Clinical Trial (topic)"/
Randomization/
Random Allocation/
Double-Blind Method/
Double Blind Procedure/
Double-Blind Studies/
Single-Blind Method/
Single Blind Procedure/
Single-Blind Studies/
Placebos/
Placebo/
Control Groups/
Control Group/
(random* or sham or placebo*).ti,ab,hw,kf,kw.
((singl* or doubl*) adj (blind* or dumm* or mask*)).ti,ab,hw,kf,kw.
((tripl* or trebl*) adj (blind* or dumm* or mask*)).ti,ab,hw,kf,kw.
(control* adj3 (study or studies or trial* or group*)).ti,ab,kf,kw.
(Nonrandom* or non random* or non-random* or quasi-random* or quasirandom*).ti,ab,hw,kf,kw.
allocated.ti,ab,hw.
((open label or open-label) adj5 (study or studies or trial*)).ti,ab,hw,kf,kw.
((equivalence or superiority or non-inferiority or noninferiority) adj3 (study or studies or trial*)).ti,ab,hw,kf,kw.
(pragmatic study or pragmatic studies).ti,ab,hw,kf,kw.
((pragmatic or practical) adj3 trial*).ti,ab,hw,kf,kw.
((quasiexperimental or quasi-experimental) adj3 (study or studies or trial*)).ti,ab,hw,kf,kw.
(phase adj3 (III or "3") adj3 (study or studies or trial*)).ti,hw,kf,kw.

Filter: Observational Studies (excluding case studies)
epidemiologic methods/
epidemiologic studies/
observational study/
observational studies as topic/
clinical studies as topic/
controlled before-after studies/
cross-sectional studies/
historically controlled study/
interrupted time series analysis/
exp seroepidemiologic studies/
national longitudinal study of adolescent health/
cohort studies/
cohort analysis/
longitudinal studies/
longitudinal study/
prospective studies/
prospective study/
follow-up studies/
follow up/
followup studies/
retrospective studies/
retrospective study/
case-control studies/
exp case control study/
cross-sectional study/
observational study/
quasi experimental methods/
quasi experimental study/
(observational study OR validation studies OR clinical study).pt.

(observational adj3 (study OR studies OR design OR analysis OR analyses)).ti,ab,kf,kw.
cohort*.ti,ab,kf,kw.
(prospective adj7 (study OR studies OR design OR analysis OR analyses)).ti,ab,kf,kw.
((follow up OR followup) adj7 (study OR studies OR design OR analysis OR analyses)).ti,ab,kf,kw.
((longitudinal OR longterm OR (long adj term)) adj7 (study OR studies OR design OR analysis OR analyses OR data)).ti,ab,kf,kw.
(retrospective adj7 (study OR studies OR design OR analysis OR analyses OR data OR review)).ti,ab,kf,kw.
((case adj control) OR (case adj comparison) OR (case adj controlled)).ti,ab,kf,kw.
(case-referent adj3 (study OR studies OR design OR analysis OR analyses)).ti,ab,kf,kw.
(population adj3 (study OR studies OR analysis OR analyses)).ti,ab,kf,kw.
(descriptive adj3 (study OR studies OR design OR analysis OR analyses)).ti,ab,kf,kw.
((multidimensional OR (multi adj dimensional)) adj3 (study OR studies OR design OR analysis OR analyses)).ti,ab,kf,kw.
(cross adj sectional adj7 (study OR studies OR design OR research OR analysis OR analyses OR survey OR findings)).ti,ab,kf,kw.
((natural adj experiment) OR (natural adj experiments)).ti,ab,kf,kw.
(quasi adj (experiment OR experiments OR experimental)).ti,ab,kf,kw.
((non experiment OR nonexperiment OR non experimental OR nonexperimental) adj3 (study OR studies OR design OR analysis OR analyses)).ti,ab,kf,kw.
(prevalence adj3 (study OR studies OR analysis OR analyses)).ti,ab,kf,kw.

Limit: Human

Limit: Adults (≥18 years old)
limit XX to "all adult (19 plus years)"
limit XX to (adult <18 to 64 years> or aged <65+ years>)
(("18" ADJ2 (age? OR year?)) OR adult* OR middle aged OR man OR men OR wom#n*).tw,kf,kw.

NOT

(child* or stepchild* or step-child* or kid or kids or girl or girls or boy or boys or teen* or youth* or youngster* or adolescent* or adolescence or preschool* or pre-school* or kindergarten* or school* or juvenile* or minors or p?ediatric* or PICU or NICU).ti,ab. or exp child/

(perinatal* or antepartum or ante-partum or intrapartum or intra-partum or neonatal* or neo-natal* or postnatal* or post-natal* or pregnan* or fetus* or foetus* or fetal* or foetal* or baby or babies or neonate* or neo-nate* or newborn* or new-born* or infant*).ti,ab. or infant/ or infant, newborn/ or infant, low birth weight/ or infant, small for gestational age/ or infant, very low birth weight/ or infant, extremely low birth weight/ or infant, postmature/ or infant, premature/ or infant, extremely premature/

Limit: Publication Year ≥ 2000

Search results

Medline & EMBase
Embase <1974 to 2023 January 30>
OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present

1 palliative care/ 154057
2 Terminal care/ 72492
3 Terminally ill/ 15388
4 (terminal* or palliative or dying or hospice* or ((advanced or late or last or end or final) adj (stage* or phase*))).ti,ab,kw. 1807847
5 ("terminal* ill*" or "terminal disease").ti,ab,kw. 19759
6 (advanced adj6 (disease* or cancer or illness)).ti,ab,kw. 403566
7 (("end stage" or "end-stage" or endstage or "late stage" or "late-stage") and (disease* or illness)).ti,ab,kw. 195354

8 ("end-of-life" or "End of life" or (life adj limit*) or eol).ti,ab,kw. 80609
9 (near-death or death or dies or die or dying or palliati*).ti,ab,kw. 2407402
10 exp hospices/ 23088
11 exp Hospice Care/ 20533
12 ((hospice adj care) or (hospice adj caring)).ti,ab,kw. 9837
13 or/1-12 4212966
14 exp *Critical Care/ use ppez 38084
15 *Critical Care Nursing/ use ppez 2039
16 exp *Critical Illness/ use ppez 19185
17 exp *Intensive Care Units/ use ppez 43931
18 exp *Intensive Care/ use oemezd 278681
19 exp *Intensive Care Unit/ use oemezd 58266
20 (((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?)) or healthcare facilit* or health-care facilit*).ti,kf,kw. 242525
21 (ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs).ti. 38600
22 ((ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs) and ((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?))).tw,kf,kw. 156989
23 (intensive care unit? or intensive therapy unit? or burn unit? or coronary care unit? or high dependency unit? or recovery room? or respiratory care unit? or "acute hospital setting" or "acute hospital settings").tw,kf,kw. 394943
24 or/14-23 785456
25 (Randomized Controlled Trial or Controlled Clinical Trial or Pragmatic Clinical Trial or Equivalence Trial or Clinical Trial, Phase III).pt. 680577
26 Randomized Controlled Trial/ 1344662
27 exp Randomized Controlled Trials as Topic/ 410813
28 "Randomized Controlled Trial (topic)"/ 246738

29 Controlled Clinical Trial/ 562993
30 exp Controlled Clinical Trials as Topic/ 425973
31 "Controlled Clinical Trial (topic)"/ 13270
32 Randomization/ 204533
33 Random Allocation/ 200662
34 Double-Blind Method/ 353978
35 Double Blind Procedure/ 204739
36 Double-Blind Studies/ 336412
37 Single-Blind Method/ 80155
38 Single Blind Procedure/ 49778
39 Single-Blind Studies/ 82222
40 Placebos/ 374669
41 Placebo/ 395521
42 Control Groups/ 112689
43 Control Group/ 112689
44 (random* or sham or placebo*).ti,ab,hw,kf,kw. 4238808
45 ((singl* or doubl*) adj (blind* or dumm* or mask*)).ti,ab,hw,kf,kw. 617009
46 ((tripl* or trebl*) adj (blind* or dumm* or mask*)).ti,ab,hw,kf,kw. 3537
47 (control* adj3 (study or studies or trial* or group*)).ti,ab,kf,kw. 2863349
48 (Nonrandom* or non random* or non-random* or quasi-random* or quasirandom*).ti,ab,hw,kf,kw. 120983
49 allocated.ti,ab,hw. 186952
50 ((open label or open-label) adj5 (study or studies or trial*)).ti,ab,hw,kf,kw. 127133
51 ((equivalence or superiority or non-inferiority or noninferiority) adj3 (study or studies or trial*)).ti,ab,hw,kf,kw. 29014
52 (pragmatic study or pragmatic studies).ti,ab,hw,kf,kw. 1428
53 ((pragmatic or practical) adj3 trial*).ti,ab,hw,kf,kw. 15617
54 ((quasiexperimental or quasi-experimental) adj3 (study or studies or trial*)).ti,ab,hw,kf,kw. 29839
55 (phase adj3 (III or "3") adj3 (study or studies or trial*)).ti,hw,kf,kw. 156217

56 or/25-55 6194059
57 epidemiologic methods/ 246269
58 epidemiologic studies/ 245180
59 observational study/ 441927
60 observational studies as topic/ 312912
61 clinical studies as topic/ 161972
62 controlled before-after studies/ 225748
63 cross-sectional studies/ 852693
64 historically controlled study/ 236158
65 interrupted time series analysis/ 219064
66 exp seroepidemiologic studies/ 32763
67 national longitudinal study of adolescent health/ 382
68 cohort studies/ 1145603
69 cohort analysis/ 1283952
70 longitudinal studies/ 326262
71 longitudinal study/ 346658
72 prospective studies/ 1376323
73 prospective study/ 1483627
74 follow-up studies/ 2188395
75 follow up/ 1964482
76 followup studies/ 689519
77 retrospective studies/ 2183677
78 retrospective study/ 2464943
79 case-control studies/ 485057
80 exp case control study/ 1602784
81 cross-sectional study/ 981565
82 observational study/ 441927
83 quasi experimental methods/ 0
84 quasi experimental study/ 11605
85 (observational study or validation studies or clinical study).pt. 142889

86 (observational adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw. 539981
87 cohort*.ti,ab,kf,kw. 2224090
88 (prospective adj7 (study or studies or design or analysis or analyses)).ti,ab,kf,kw. 1305064
89 ((follow up or followup) adj7 (study or studies or design or analysis or analyses)).ti,ab,kf,kw. 427366
90 ((longitudinal or longterm or (long adj term)) adj7 (study or studies or design or analysis or analyses or data)).ti,ab,kf,kw. 812408
91 (retrospective adj7 (study or studies or design or analysis or analyses or data or review)).ti,ab,kf,kw. 1749451
92 ((case adj control) or (case adj comparison) or (case adj controlled)).ti,ab,kf,kw. 363147
93 (case-referent adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw. 1336
94 (population adj3 (study or studies or analysis or analyses)).ti,ab,kf,kw. 574208
95 (descriptive adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw. 263050
96 ((multidimensional or (multi adj dimensional)) adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw. 10353
97 (cross adj sectional adj7 (study or studies or design or research or analysis or analyses or survey or findings)).ti,ab,kf,kw. 961391
98 ((natural adj experiment) or (natural adj experiments)).ti,ab,kf,kw. 6537
99 (quasi adj (experiment or experiments or experimental)).ti,ab,kf,kw. 43524
100 ((non experiment or nonexperiment or non experimental or nonexperimental) adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw. 3947
101 (prevalence adj3 (study or studies or analysis or analyses)).ti,ab,kf,kw. 117826
102 or/57-101 10662930
103 exp Decision Making/ 676874
104 exp Decision support techniques/ 114840
105 (decide or deciding or decision or decisionmak*).tw. 930330
106 Communication/ 229566
107 communicates.tw. 5722
108 cooperative behavior/ 85593
109 (collaborate? or cooperate?).ti,ab,kw,kf. 85952

110 Interdisciplinary Communication/ or interprofessional relations/ or patient care team/ 445122
111 (interdisciplinary or multidisciplinary).ti,ab,kf,kw. 399531
112 Patient participation/ or consumer participation/ or Physician-nurse relations/ or doctor nurse relation/ or patient compliance/ or patient care planning/ or Physician-patient relations/ 493210
113 Profession-Family Relations/ or Family Nursing/ 3057
114 (family adj (centered or focused or meetings or conferences)).ti,ab,kw. or family/px 29238
115 exp Advance care planning/ or Advance? Care planning.ti,ab,kf,kw. 22873
116 exp Advance Directives/ or Advance? Care Directive?.ti,ab,kf,kw. 18038
117 or/103-116 2887424
118 13 and 24 and 56 and 117 1418
119 limit 118 to yr="2013-2023" 976
120 remove duplicates from 119 755
121 exp advance Directives/ and Decision Making/ 4493
122 Advance Care Planning/ 9944
123 Advance Directive Adherence/ 10488
124 Living Wills/ 11643
125 Proxy/ 3053
126 exp Third-Party Consent/ 133757
127 Presumed Consent/ 128223
128 Patient Preference/ and Decision Making/ 3860
129 (exp Family/ or Critically ill/ or Terminally ill/ or Caregivers/ or Legal Guardians/ or Moral Obligation/ or Personal Satisfaction/) and Decision Making/ 38210
130 Advance? Care planning.mp. 16283
131 ((Advance? or adherence?) adj2 Directive?).mp. 16648
132 (alternate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 60
133 (alternative?? adj3 (decision-mak* or decisionmak* or consent*)).mp. 1069
134 ((carer? or caregiver? or care-giver?) adj3 (decision-mak* or decisionmak* or consent*)).mp. 1651
135 ((family or families) adj3 (decision-mak* or decisionmak* or consent*)).mp. 7819
136 (guardian* adj3 (decision-mak* or decisionmak* or consent*)).mp. 905

137 ((proxy or proxies) adj3 (decision-mak* or decisionmak* or consent*)).mp. 1168
138 ((presumed or presume) adj (decision-mak* or decisionmak* or consent*)).mp. 1267
139 (relative? adj3 (decision-mak* or decisionmak* or consent*)).mp. 1308
140 (spous??? adj3 (decision-mak* or decisionmak* or consent*)).mp. 323
141 (surrogate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 3900
142 ((community or third party??) adj2 (decision-mak* or decisionmak* or consent*)).mp. 4916
143 ((family or families or carer? or caregiver? or care-giver? or guardian* or proxy or proxies or representatite? or spous???) adj3 (share or shares or shared or sharing) adj2 (decision-mak* or decisionmak* or consent?)).mp. 370
144 (consent adj2 board?).mp. 494
145 decisional surrogate?.mp. 5
146 ((decision-making or decisionmak*) adj2 representative?).mp. 50
147 ((health* or legal) adj2 (proxy or proxies)).mp. 1785
148 ("living will" or "living wills").mp. 12973
149 substitute health-care decision*.mp. 6
150 substitute healthcare decision*.mp. 0
151 (surrogacy and (decision* adj3 authorit*)).mp. 13
152 surrogate consenter?.mp. 3
153 (surrogate and (decision* adj3 authorit*)).mp. 88
154 third party decision*.mp. 34
155 "power? of attorney".mp. 1819
156 (patient?? adj1 agent?).mp. 2825
157 (patient? adj2 (proxy or proxies)).mp. 1826
158 (patient?? adj2 (surrogate? or surrogacy)).mp. 2313
159 attorney for personal.mp. 3
160 attorney-in-fact.mp. 7
161 public guardian?.mp. 80
162 public trustee?.mp. 20
163 or/121-162 224664
164 13 and 24 and (56 or 102) and 163 1988

165 limit 164 to yr="2018-2023" 860
166 remove duplicates from 165 624
167 Palliative Medicine/ use ppez or Palliative Therapy/ use oemezd 108975
168 (palliative medicine or palliative care medicine).ti,ab,kw,kf. 7328
169 "Hospice and Palliative Care Nursing"/ use ppez or exp Palliative Nursing/ use oemezd 3621
170 ((hospice adj nursing) or palliative care nursing).ti,ab,kw,kf. 990
171 Hospice Care/ 20533
172 ((hospice or bereavement or comfort or supportive) adj (care or program? or counseling or treatment or therapy)).ti,ab,kw,kf. 95526
173 exp "Referral and Consultation"/ 234066
174 (consultation or referral?).ti,ab,kw,kf. 546165
175 exp Spiritual Therapies/ or (Spiritual adj (care or healing? or therapy or therapies)).ti,ab,kw,kf. or Pastoral Care/ or (Pastoral adj (care or psychology)).ti,ab,kw,kf. 26672
176 exp Religious Personnel/ or (Minister? or priest? or bishop? or pastor? or rabbi? or clergy or monk? or nun?).ti,ab,kw,kf. 406048
177 exp Mental Health Services/ or (Mental adj (health or hygiene) adj service?).ti,ab,kw,kf. or (psychologist? or psychiatrist?).ti,ab,kf,kw. 294683
178 Ethicists/ or (bioethicist? or ethicist?).ti,ab,kw,kf. 9581
179 Health Educators/ or health educator?.ti,ab,kw. 7130
180 Hospital Volunteers/ or hospital volunteer?.ti,ab,kw,kf. 1666
181 Social workers/ or (social worker? or "case worker" or "social case worker").ti,ab,kw,kf. 34925
182 or/167-181 1580874
183 13 and 24 and (56 or 102) and 182 6135
184 limit 183 to yr="2020-2023" 2030
185 remove duplicates from 184 1501
186 Organizational Policy/ 16570
187 exp Policy/ use ppez 174051
188 organi?ational polic*.ti,ab,kw,kf. 1590
189 (policy or policies).ti,ab,kw,kf. 742828

190 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf. 27327
191 or/186-190 859318
192 Family conflict/ 7342
193 Conflict/ use oemezd 25977
194 Conflict, Psychological/ 42745
195 Conflict*.ti,ab,kw,kf. 360647
196 Medical futility/ use ppez 3201
197 ((Futile or futility) adj (treatment* or medical)).ti,ab,kw,kf. 950
198 or/192-197 385886
199 191 and 198 19056
200 13 and 24 and (56 or 102) and 199 33
201 limit 200 to yr="2020-2023" 7
202 remove duplicates from 201 5
203 Resuscitation Orders/ use ppez 4167
204 (resuscitation adj (decision* or order* or policy or policies)).ti,ab,kw,kf. 1648
205 Cardiopulmonary Resuscitation/ 148864
206 (cpr or (("cardio pulmonary" or "cardio-pulmonary" or cardiopulmonary or "mouth to mouth" or "mouth-to-mouth") adj resuscitation*)).ti,ab,kw,kf. 69129
207 ((Passive or negative) adj euthanasia).ti,ab,kw,kf. 579
208 ((withdrawl or withdrawal or withhold or withholding) adj ("life-prolonging treatment" or "allowing to die")).ti,ab,kw,kf. 38
209 Advance directive adherence/ use ppez or ((living will/ or "advance care planning"/) use oemezd) 0
210 Advance directive*.ti,ab,kw,kf. 10778
211 ((Directive or guideline) adj (adherence* or compliance)).ti,ab,kw,kf. 8710
212 ((dnr or "do not resuscitate" or resuscitation) adj order*).ti,ab,kw,kf. 5082
213 Life Support Care/ 143783

214 ("life support care" or "life prolongation" or "prolongation of life" or (extraordinary adj treatment*)).ti,ab,kw,kf. 3231
215 Withholding treatment/ use ppez or treatment withdrawal/ use oemezd 35681
216 ((Treatment* or care) adj (cessation* or withdrawl or withdrawal or withhold or withholding)).ti,ab,kw,kf. 8998
217 tu.fs. 2479880
218 Ventilator Weaning/ 7853
219 ((Ventilator or ventilation or "life support" or "life-sustaining" or respirator) adj2 (weaning or withdraw or withdrawl or withdrawal or withdrawing)).ti,ab,kw,kf. 8467
220 ("Terminal weaning" or "Immediate extubation" or "Treatment limitation").ti,ab,kw,kf. 1073
221 Pain management/ use ppez or analgesia/ use oemezd 188717
222 (Symptom* adj (manage or management)).ti,ab,kw,kf. 22268
223 or/203-222 3059637
224 Documentation/st 4256
225 "Forms and Records Control"/st 1119
226 Practice Guidelines as Topic/ 551825
227 Medical Records/st 4512
228 Organizational Policy/ 16570
229 exp Policy/ use ppez 174051
230 organi?ational polic*.ti,ab,kw,kf. 1590
231 (policy or policies).ti,ab,kw,kf. 742828
232 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf. 27327
233 or/224-232 1395080
234 223 and 233 78032
235 13 and 24 and (56 or 102) and 234 441
236 limit 235 to yr="2013-2023" 280
237 remove duplicates from 236 252
238 Pastoral care/ 4261

239 ((Spiritual or pastoral) adj (care or comfort or distress or well-being or support or psychology)).ti,ab,kw,kf. 12313
240 exp Culture/ 231538
241 (cultural or customs or belief* or "family tradition" or "family traditions" or ceremonial or ritual or rituals).ti,ab,kw,kf. 497263
242 238 or 239 or 240 or 241 673133
243 13 and 24 and (56 or 102) and 242 658
244 limit 243 to yr="2019-2023" 215
245 remove duplicates from 244 136
246 exp Social Discrimination/ 43449
247 (discrimination* or ableism or able-ism or disableism or homophobia* or racism or ethnicism or sexism or xenophobia or ageism or fatphobia* or prejudice*).ti,ab,kw,kf. 349274
248 (("anti gay" or homosexual or anti-homosexual or anti-gay or "sexual orientation") adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 202
249 ((racist or racial or "racially motivated" or "racially-based" or ethnic or ethnicity-based or ethnicity-related) adj (bias or prejudice* or behavior or behaviour)).ti,ab,kw,kf. 2472
250 ((hidden or implicit or subconscious or unconscious) adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 3363
251 ((gender or sex) adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 8298
252 exp Prejudice/ 40340
253 (("anti fat" or anti-fat or fat or obesity or weight) adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 3185
254 (gender adj (equality or equity or equalities or equities)).ti,ab,kw,kf. 6881
255 ("anti semitism" or anti-semitism* or islamophobia*).ti,ab,kw,kf. 471
256 Health Equity/ 11712
257 (health adj (equality or equity or equalities or equities)).ti,ab,kw,kf. 16768
258 or/246-257 423579
259 organizational Policy/ 16570
260 exp Policy/ use ppez 174051
261 organi?ational polic*.ti,ab,kw,kf. 1590

262 (policy or policies).ti,ab,kw,kf. 742828
263 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf. 27327
264 or/259-263 859318
265 258 and 264 22669
266 13 and 24 and 265 14
267 limit 266 to yr="2000-2023" 13
268 remove duplicates from 267 9
269 exp Inservice training/ 45937
270 Interprofessional education/ 1139
271 Medical Education/ 304794
272 exp Education, Continuing/ 95327
273 exp Teaching/ 197925
274 ((interprofessional or Inservice or "in service" or "in-service" or "on the job" or "on-the-job" or orientation or academic) adj (training or program* or education)).ti,ab,kw,kf. 25115
275 (training or education or educational).ti,ab,kw,kf. 2604860
276 269 or 270 or 271 or 272 or 273 or 274 or 275 2898542
277 13 and 24 and 56 and 276 732
278 limit 277 to yr="2000-2023" 694
279 remove duplicates from 278 522
280 exp Education/ 2515340
281 ((patient or family or consumer) adj2 (education or information)).ti,ab,kw,kf. 135236
282 ("educational interventions" or "educational intervention").ti,ab,kw,kf. 34644
283 280 or 281 or 282 2603379
284 exp Patient Care Planning/ 96368
285 (Care adj2 (goal* or plan*)).ti,ab,kw,kf. 73156
286 (advance adj2 planning).ti,ab,kw,kf. 13525
287 ("expectations of care" or GOCD).ti,ab,kw,kf. 719
288 or/284-287 161467

289 exp Hospitals/ or exp Hospital Units/ use ppez or exp *Hospital/ use oemezd 1792005
290 exp *Ward/ use oemezd 109359
291 Hospitalization/ use ppez or *Hospitalization/ use oemezd 176693
292 *Hospital care/ or *Intensive care/ use oemezd 74700
293 *Hospital service/ use oemezd 7416
294 exp HOSPITAL DEPARTMENTS/ or HOSPITAL SHARED SERVICES/ use ppez 230983
295 MEDICAL STAFF, HOSPITAL/ or HOSPITALISTS/ use ppez or *Hospital personnel/ or *Hospital physician/ or *Medical staff/ or *Resident/ use oemezd 105227
296 Inpatients/ use ppez or *hospital patient/ use oemezd 66579
297 Patient transfer/ use ppez 9557
298 *"length of stay"/ or *hospital admission/ or *Hospital discharge/ or *Hospital readmission/ or *Patient transport/ use oemezd 99615
299 hospital$.ab. 3677727
300 (hospital$ or WARD or WARDS).ti. 861769
301 "length of stay"/ or Patient admission/ or Patient discharge/ or Patient readmission/ or ((patient? or hospital$).ti,hw. and (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?).ti.) or "length of stay".ti. 854023
302 (((patient? or hospital?) adj2 (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) or "length of stay").ab. 837796
303 (inpatient? or in?patient?).ti. 71595
304 or/289-303 5419534
305 283 and 288 and 304 7710
306 13 and 24 and 56 and 305 28
307 limit 306 to yr="2014-2023" 16
308 remove duplicates from 307 12
309 119 or 165 or 184 or 201 or 236 or 244 or 267 or 278 or 307 4315

Cochrane Clinical Trials Registry
EBM Reviews - Cochrane Central Register of Controlled Trials <December 2022>

3. Electronic Search Strategies

1 palliative care/ 1757
2 Terminal care/ 379
3 Terminally ill/ 87
4 (terminal* or palliative or dying or hospice* or ((advanced or late or last or end or final) adj (stage* or phase*))).ti,ab,kw. 32717
5 ("terminal* ill*" or "terminal disease").ti,ab,kw. 560
6 (advanced adj6 (disease* or cancer or illness)).ti,ab,kw. 35091
7 (("end stage" or "end-stage" or endstage or "late stage" or "late-stage") and (disease* or illness)).ti,ab,kw. 7181
8 ("end-of-life" or "End of life" or (life adj limit*) or eol).ti,ab,kw. 1756
9 (near-death or death or dies or die or dying or palliati*).ti,ab,kw. 80507
10 exp hospices/ 45
11 exp Hospice Care/ 116
12 ((hospice adj care) or (hospice adj caring)).ti,ab,kw. 248
13 or/1-12 130026
14 exp *Critical Care/ 0
15 *Critical Care Nursing/ 0
16 exp *Critical Illness/ 0
17 exp *Intensive Care Units/ 265
18 (((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?)) or healthcare facilit* or health-care facilit*).ti,kf,kw. 16353
19 (ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs).ti. 2287
20 ((ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs) and ((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?))).tw,kf,kw. 9185

21 (intensive care unit? or intensive therapy unit? or burn unit? or coronary care unit? or high dependency unit? or recovery room? or respiratory care unit? or "acute hospital setting" or "acute hospital settings").tw,kf,kw. 25140
22 or/14-21 33077
23 exp Decision Making/ 4403
24 exp Decision support techniques/ 2594
25 (decide or deciding or decision or decisionmak*).tw. 29039
26 Communication/ 2580
27 communicates.tw. 166
28 cooperative behavior/ 966
29 (collaborate? or cooperate?).ti,ab,kw,kf. 3425
30 Interdisciplinary Communication/ or interprofessional relations/ or patient care team/ 2134
31 (interdisciplinary or multidisciplinary).ti,ab,kf,kw. 8929
32 Patient participation/ or consumer participation/ or Physician-nurse relations/ or doctor nurse relation/ or patient compliance/ or patient care planning/ or Physician-patient relations/ 13429
33 Profession-Family Relations/ or Family Nursing/ 41
34 (family adj (centered or focused or meetings or conferences)).ti,ab,kw. or family/px 1262
35 exp Advance care planning/ or Advance? Care planning.ti,ab,kf,kw. 959
36 exp Advance Directives/ or Advance? Care Directive?.ti,ab,kf,kw. 148
37 or/23-36 62292
38 13 and 22 and 37 406
39 limit 38 to yr="2013-2023" 321
40 remove duplicates from 39 319
41 exp advance Directives/ and Decision Making/ 33
42 Advance Care Planning/ 230
43 Advance Directive Adherence/ 2
44 Living Wills/ 14
45 Proxy/ 61
46 exp Third-Party Consent/ 52
47 Presumed Consent/ 0

48 Patient Preference/ and Decision Making/ 79
49 (exp Family/ or Critically ill/ or Terminally ill/ or Caregivers/ or Legal Guardians/ or Moral Obligation/ or Personal Satisfaction/) and Decision Making/ 197
50 Advance? Care planning.mp. 887
51 ((Advance? or adherence?) adj2 Directive?).mp. 488
52 (alternate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 9
53 (alternative?? adj3 (decision-mak* or decisionmak* or consent*)).mp. 47
54 ((carer? or caregiver? or care-giver?) adj3 (decision-mak* or decisionmak* or consent*)).mp. 355
55 ((family or families) adj3 (decision-mak* or decisionmak* or consent*)).mp. 543
56 (guardian* adj3 (decision-mak* or decisionmak* or consent*)).mp. 617
57 ((proxy or proxies) adj3 (decision-mak* or decisionmak* or consent*)).mp. 150
58 ((presumed or presume) adj (decision-mak* or decisionmak* or consent*)).mp. 4
59 (relative? adj3 (decision-mak* or decisionmak* or consent*)).mp. 127
60 (spous??? adj3 (decision-mak* or decisionmak* or consent*)).mp. 29
61 (surrogate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 255
62 ((community or third party??) adj2 (decision-mak* or decisionmak* or consent*)).mp. 82
63 ((family or families or carer? or caregiver? or care-giver? or guardian* or proxy or proxies or representatite? or spous???) adj3 (share or shares or shared or sharing) adj2 (decision-mak* or decisionmak* or consent?)).mp. 28
64 (consent adj2 board?).mp. 38
65 decisional surrogate?.mp. 0
66 ((decision-making or decisionmak*) adj2 representative?).mp. 1
67 ((health* or legal) adj2 (proxy or proxies)).mp. 102
68 ("living will" or "living wills").mp. 311
69 substitute health-care decision*.mp. 0
70 substitute healthcare decision*.mp. 0
71 (surrogacy and (decision* adj3 authorit*)).mp. 0
72 surrogate consenter?.mp. 1
73 (surrogate and (decision* adj3 authorit*)).mp. 0

74 third party decision*.mp. 2
75 "power? of attorney".mp. 54
76 (patient?? adj1 agent?).mp. 308
77 (patient? adj2 (proxy or proxies)).mp. 122
78 (patient?? adj2 (surrogate? or surrogacy)).mp. 186
79 attorney for personal.mp. 0
80 attorney-in-fact.mp. 0
81 public guardian?.mp. 2
82 public trustee?.mp. 0
83 or/41-82 3921
84 13 and 22 and 83 153
85 limit 84 to yr="2018-2023" 82
86 remove duplicates from 85 80
87 Palliative Medicine/ 2
88 (palliative medicine or palliative care medicine).ti,ab,kw,kf. 113
89 "Hospice and Palliative Care Nursing"/ 47
90 ((hospice adj nursing) or palliative care nursing).ti,ab,kw,kf. 11
91 Hospice Care/ 116
92 ((hospice or bereavement or comfort or supportive) adj (care or program? or counseling or treatment or therapy)).ti,ab,kw,kf. 5890
93 exp "Referral and Consultation"/ 2546
94 (consultation or referral?).ti,ab,kw,kf. 24971
95 exp Spiritual Therapies/ or (Spiritual adj (care or healing? or therapy or therapies)).ti,ab,kw,kf. or Pastoral Care/ or (Pastoral adj (care or psychology)).ti,ab,kw,kf. 2005
96 exp Religious Personnel/ or (Minister? or priest? or bishop? or pastor? or rabbi? or clergy or monk? or nun?).ti,ab,kw,kf. 2953
97 exp Mental Health Services/ or (Mental adj (health or hygiene) adj service?).ti,ab,kw,kf. or (psychologist? or psychiatrist?).ti,ab,kf,kw. 15237
98 Ethicists/ or (bioethicist? or ethicist?).ti,ab,kw,kf. 49
99 Health Educators/ or health educator?.ti,ab,kw. 499

100 Hospital Volunteers/ or hospital volunteer?.ti,ab,kw,kf. 51
101 Social workers/ or (social worker? or "case worker" or "social case worker").ti,ab,kw,kf. 1352
102 or/87-101 51256
103 13 and 22 and 102 308
104 limit 103 to yr="2020-2023" 100
105 remove duplicates from 104 99
106 Organizational Policy/ 92
107 exp Policy/ 884
108 organi?ational polic*.ti,ab,kw,kf. 38
109 (policy or policies).ti,ab,kw,kf. 10929
110 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf. 783
111 or/106-110 11938
112 Family conflict/ 102
113 Conflict, Psychological/ 317
114 Conflict*.ti,ab,kw,kf. 11016
115 Medical futility/ 53
116 ((Futile or futility) adj (treatment* or medical)).ti,ab,kw,kf. 13
117 or/112-116 11193
118 111 and 117 180
119 13 and 22 and 118 3
120 limit 119 to yr="2020-2023" 0
121 remove duplicates from 120 0
122 Resuscitation Orders/ 36
123 (resuscitation adj (decision* or order* or policy or policies)).ti,ab,kw,kf. 43
124 Cardiopulmonary Resuscitation/ 1201
125 (cpr or (("cardio pulmonary" or "cardio-pulmonary" or cardiopulmonary or "mouth to mouth" or "mouth-to-mouth") adj resuscitation*)).ti,ab,kw,kf. 3229
126 ((Passive or negative) adj euthanasia).ti,ab,kw,kf. 2

127 ((withdrawl or withdrawal or withhold or withholding) adj ("life-prolonging treatment" or "allowing to die")).ti,ab,kw,kf. 0
128 Advance directive adherence/ 2
129 Advance directive*.ti,ab,kw,kf. 413
130 ((Directive or guideline) adj (adherence* or compliance)).ti,ab,kw,kf. 405
131 ((dnr or "do not resuscitate" or resuscitation) adj order*).ti,ab,kw,kf. 124
132 Life Support Care/ 93
133 ("life support care" or "life prolongation" or "prolongation of life" or (extraordinary adj treatment*)).ti,ab,kw,kf. 87
134 Withholding treatment/ 401
135 ((Treatment* or care) adj (cessation* or withdrawl or withdrawal or withhold or withholding)).ti,ab,kw,kf. 1472
136 tu.fs. 215603
137 Ventilator Weaning/ 517
138 ((Ventilator or ventilation or "life support" or "life-sustaining" or respirator) adj2 (weaning or withdraw or withdrawl or withdrawal or withdrawing)).ti,ab,kw,kf. 687
139 ("Terminal weaning" or "Immediate extubation" or "Treatment limitation").ti,ab,kw,kf. 39
140 Pain management/ 4318
141 (Symptom* adj (manage or management)).ti,ab,kw,kf. 1595
142 or/122-141 227151
143 Documentation/st 0
144 "Forms and Records Control"/st 0
145 Practice Guidelines as Topic/ 1670
146 Medical Records/st 0
147 Organizational Policy/ 92
148 exp Policy/ 884
149 organi?ational polic*.ti,ab,kw,kf. 38
150 (policy or policies).ti,ab,kw,kf. 10929

151 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf. 783
152 or/143-151 13535
153 142 and 152 1294
154 13 and 22 and 153 13
155 limit 154 to yr="2013-2023" 9
156 remove duplicates from 155 9
157 Pastoral care/ 15
158 ((Spiritual or pastoral) adj (care or comfort or distress or well-being or support or psychology)).ti,ab,kw,kf. 595
159 exp Culture/ 3050
160 (cultural or customs or belief* or "family tradition" or "family traditions" or ceremonial or ritual or rituals).ti,ab,kw,kf. 13461
161 157 or 158 or 159 or 160 16472
162 13 and 22 and 161 35
163 limit 162 to yr="2019-2023" 14
164 remove duplicates from 163 14
165 exp Social Discrimination/ 119
166 (discrimination* or ableism or able-ism or disableism or homophobia* or racism or ethnicism or sexism or xenophobia or ageism or fatphobia* or prejudice*).ti,ab,kw,kf. 6125
167 (("anti gay" or homosexual or anti-homosexual or anti-gay or "sexual orientation") adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 2
168 ((racist or racial or "racially motivated" or "racially-based" or ethnic or ethnicity-based or ethnicity-related) adj (bias or prejudice* or behavior or behaviour)).ti,ab,kw,kf. 76
169 ((hidden or implicit or subconscious or unconscious) adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 90
170 ((gender or sex) adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 125
171 exp Prejudice/ 416

172 (("anti fat" or anti-fat or fat or obesity or weight) adj (bias or phobia* or shaming or stigma*)).ti,ab,kw,kf. 173
173 (gender adj (equality or equity or equalities or equities)).ti,ab,kw,kf. 114
174 ("anti semitism" or anti-semitism* or islamophobia*).ti,ab,kw,kf. 1
175 Health Equity/ 8
176 (health adj (equality or equity or equalities or equities)).ti,ab,kw,kf. 163
177 or/165-176 6914
178 organizational Policy/ 92
179 exp Policy/ 884
180 organi?ational polic*.ti,ab,kw,kf. 38
181 (policy or policies).ti,ab,kw,kf. 10929
182 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,kw,kf. 783
183 or/178-182 11938
184 177 and 183 143
185 13 and 22 and 184 0
186 limit 185 to yr="2000-2023" 0
187 remove duplicates from 186 0
188 exp Inservice training/ 826
189 Interprofessional education/ 2
190 Medical Education/ 2
191 exp Education, Continuing/ 1176
192 exp Teaching/ 4710
193 ((interprofessional or Inservice or "in service" or "in-service" or "on the job" or "on-the-job" or orientation or academic) adj (training or program* or education)).ti,ab,kw,kf. 495
194 (training or education or educational).ti,ab,kw,kf. 174195
195 188 or 189 or 190 or 191 or 192 or 193 or 194 176051
196 13 and 22 and 195 313
197 limit 196 to yr="2000-2023" 311

198 remove duplicates from 197 308
199 exp Education/ 35637
200 ((patient or family or consumer) adj2 (education or information)).ti,ab,kw,kf. 11130
201 ("educational interventions" or "educational intervention").ti,ab,kw,kf. 5355
202 199 or 200 or 201 48576
203 exp Patient Care Planning/ 1811
204 (Care adj2 (goal* or plan*)).ti,ab,kw,kf. 4244
205 (advance adj2 planning).ti,ab,kw,kf. 817
206 ("expectations of care" or GOCD).ti,ab,kw,kf. 20
207 or/203-206 5726
208 exp Hospitals/ or exp Hospital Units/ 8379
209 Hospitalization/ 5687
210 *Hospital care/ 0
211 exp HOSPITAL DEPARTMENTS/ or HOSPITAL SHARED SERVICES/ 3986
212 MEDICAL STAFF, HOSPITAL/ or HOSPITALISTS/ or *Hospital personnel/ or *Hospital physician/ or *Medical staff/ 305
213 Inpatients/ or *hospital patient/ 1105
214 Patient transfer/ 167
215 *"length of stay"/ or *hospital admission/ or *Hospital discharge/ or *Hospital readmission/ or *Patient transport/ 0
216 hospital$.ab. 190853
217 (hospital$ or WARD or WARDS).ti. 18815
218 "length of stay"/ or Patient admission/ or Patient discharge/ or Patient readmission/ or ((patient? or hospital$).ti,hw. and (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?).ti.) or "length of stay".ti. 15042
219 (((patient? or hospital?) adj2 (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) or "length of stay").ab. 42134
220 (inpatient? or in?patient?).ti. 3304
221 or/208-220 216136
222 202 and 207 and 221 283

223 13 and 22 and 222 4
224 limit 223 to yr="2014-2023" 3
225 remove duplicates from 224 3
226 39 or 85 or 104 or 120 or 155 or 163 or 186 or 197 or 224 643

Allied and Complementary Medicine
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1 palliative care/ 6761
2 Terminal care/ 3720
3 Terminally ill/ 0
4 (terminal* or palliative or dying or hospice* or ((advanced or late or last or end or final) adj (stage* or phase*))).ti,ab,hw. 21059
5 ("terminal* ill*" or "terminal disease").ti,ab,hw. 3784
6 (advanced adj6 (disease* or cancer or illness)).ti,ab,hw. 1933
7 (("end stage" or "end-stage" or endstage or "late stage" or "late-stage") and (disease* or illness)).ti,ab,hw. 502
8 ("end-of-life" or "End of life" or (life adj limit*) or eol).ti,ab,hw. 4267
9 (near-death or death or dies or die or dying or palliati*).ti,ab,hw. 23805
10 exp hospices/ 398
11 exp Hospice Care/ 2211
12 ((hospice adj care) or (hospice adj caring)).ti,ab,hw. 2439
13 or/1-12 29109
14 exp Critical Care/ 786
15 Critical Care Nursing/ 0
16 exp Critical Illness/ 134
17 exp Intensive Care Units/ 0
18 (((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?)) or healthcare facilit* or health-care facilit*).ti,hw. 1262

19 (ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs).ti. 99
20 ((ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs) and ((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?))).tw,hw. 392
21 (intensive care unit? or intensive therapy unit? or burn unit? or coronary care unit? or high dependency unit? or recovery room? or respiratory care unit? or "acute hospital setting" or "acute hospital settings").tw,hw. 1010
22 or/14-21 1830
23 exp Decision Making/ 4750
24 exp Decision support techniques/ 0
25 (decide or deciding or decision or decisionmak*).tw. 6236
26 Communication/ 3339
27 communicates.tw. 28
28 cooperative behavior/ 264
29 (collaborate? or cooperate?).ti,ab,hw. 287
30 Interdisciplinary Communication/ or interprofessional relations/ or patient care team/ 3180
31 (interdisciplinary or multidisciplinary).ti,ab,hw. 3652
32 Patient participation/ or consumer participation/ or Physician-nurse relations/ or doctor nurse relation/ or patient compliance/ or patient care planning/ or Physician-patient relations/ 3705
33 Family Relations/ or Family Nursing/ 1260
34 (family adj (centered or focused or meetings or conferences)).ti,ab,hw. or family/ 3068
35 exp Advance care planning/ or Advance? Care planning.ti,ab,hw. 317
36 exp Advance Directives/ or Advance? Care Directive?.ti,ab,hw. 554
37 or/23-36 22706
38 13 and 22 and 37 244
39 limit 38 to yr="2013-2023" 68
40 remove duplicates from 39 68
41 exp advance Directives/ and Decision Making/ 155

42 Advance Care Planning/ 0
43 Advance Directive Adherence/ 0
44 Living Wills/ 0
45 Proxy/ 0
46 exp Third-Party Consent/ 7
47 Presumed Consent/ 0
48 Patient Preference/ and Decision Making/ 0
49 (exp Family/ or Critically ill/ or Terminally ill/ or Caregivers/ or Legal Guardians/ or Moral Obligation/ or Personal Satisfaction/) and Decision Making/ 293
50 Advance? Care planning.mp. 317
51 ((Advance? or adherence?) adj2 Directive?).mp. 765
52 (alternate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 0
53 (alternative?? adj3 (decision-mak* or decisionmak* or consent*)).mp. 24
54 ((carer? or caregiver? or care-giver?) adj3 (decision-mak* or decisionmak* or consent*)).mp. 48
55 ((family or families) adj3 (decision-mak* or decisionmak* or consent*)).mp. 118
56 (guardian* adj3 (decision-mak* or decisionmak* or consent*)).mp. 2
57 ((proxy or proxies) adj3 (decision-mak* or decisionmak* or consent*)).mp. 23
58 ((presumed or presume) adj (decision-mak* or decisionmak* or consent*)).mp. 2
59 (relative? adj3 (decision-mak* or decisionmak* or consent*)).mp. 19
60 (spous??? adj3 (decision-mak* or decisionmak* or consent*)).mp. 3
61 (surrogate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 76
62 ((community or third party??) adj2 (decision-mak* or decisionmak* or consent*)).mp. 29
63 ((family or families or carer? or caregiver? or care-giver? or guardian* or proxy or proxies or representatite? or spous???) adj3 (share or shares or shared or sharing) adj2 (decision-mak* or decisionmak* or consent?)).mp. 7
64 (consent adj2 board?).mp. 0
65 decisional surrogate?.mp. 1
66 ((decision-making or decisionmak*) adj2 representative?).mp. 0
67 ((health* or legal) adj2 (proxy or proxies)).mp. 53

68 ("living will" or "living wills").mp. 126
69 substitute health-care decision*.mp. 0
70 substitute healthcare decision*.mp. 0
71 (surrogacy and (decision* adj3 authorit*)).mp. 0
72 surrogate consenter?.mp. 0
73 (surrogate and (decision* adj3 authorit*)).mp. 0
74 third party decision*.mp. 0
75 "power? of attorney".mp. 39
76 (patient?? adj1 agent?).mp. 45
77 (patient? adj2 (proxy or proxies)).mp. 76
78 (patient?? adj2 (surrogate? or surrogacy)).mp. 69
79 attorney for personal.mp. 0
80 attorney-in-fact.mp. 0
81 public guardian?.mp. 1
82 public trustee?.mp. 0
83 or/41-82 1612
84 13 and 22 and 83 75
85 limit 84 to yr="2018-2023" 12
86 remove duplicates from 85 12
87 Palliative Medicine/ 267
88 (palliative medicine or palliative care medicine).ti,ab,hw. 816
89 Terminal care/ 3720
90 ((hospice adj nursing) or palliative care nursing).ti,ab,hw. 171
91 Hospice Care/ 2211
92 ((hospice or bereavement or comfort or supportive) adj (care or program? or counseling or treatment or therapy)).ti,ab,hw. 3114
93 exp "Referral and Consultation"/ 938
94 (consultation or referral?).ti,ab,hw. 3996
95 exp Spiritual Therapies/ or (Spiritual adj (care or healing? or therapy or therapies)).ti,ab,kw,kf. or Pastoral Care/ or (Pastoral adj (care or psychology)).ti,ab,hw. 0

96 exp Religious Personnel/ or (Minister? or priest? or bishop? or pastor? or rabbi? or clergy or monk? or nun?).ti,ab,hw. 621
97 exp Mental Health Services/ or (Mental adj (health or hygiene) adj service?).ti,ab,kw,kf. or (psychologist? or psychiatrist?).ti,ab,hw. 0
98 Ethicists/ or (bioethicist? or ethicist?).ti,ab,hw. 37
99 Health Educators/ or health educator?.ti,ab,hw. 33
100 Hospital Volunteers/ or hospital volunteer?.ti,ab,hw. 24
101 Social workers/ or (social worker? or "case worker" or "social case worker").ti,ab,hw. 480
102 or/87-101 11868
103 13 and 22 and 102 290
104 limit 103 to yr="2020-2023" 12
105 remove duplicates from 104 12
106 Health Policy/ 1270
107 exp Policy/ 0
108 organi?ational polic*.ti,ab,hw. 30
109 (policy or policies).ti,ab,hw. 4023
110 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,hw. 214
111 or/106-110 4134
112 Family relations/ 1260
113 Conflict/ 67
114 Conflict*.ti,ab,hw. 1897
115 Medical futility/ 0
116 ((Futile or futility) adj (treatment* or medical)).ti,ab,hw. 20
117 or/112-116 3132
118 111 and 117 106
119 13 and 22 and 118 4
120 limit 119 to yr="2020-2023" 0
121 remove duplicates from 120 0

122 Resuscitation Orders/ 187
123 (resuscitation adj (decision* or order* or policy or policies)).ti,ab,hw. 210
124 Resuscitation/ 186
125 (cpr or (("cardio pulmonary" or "cardio-pulmonary" or cardiopulmonary or "mouth to mouth" or "mouth-to-mouth") adj resuscitation*)).ti,ab,hw. 248
126 ((Passive or negative) adj euthanasia).ti,ab,kw,kf. 0
127 ((withdrawl or withdrawal or withhold or withholding) adj ("life-prolonging treatment" or "allowing to die")).ti,ab,kw,kf. 0
128 Advance directives/ 550
129 Advance directive*.ti,ab,kw,kf. 0
130 ((Directive or guideline) adj (adherence* or compliance)).ti,ab,kw,kf. 0
131 ((dnr or "do not resuscitate" or resuscitation) adj order*).ti,ab,hw. 279
132 Life Support Care/ 100
133 ("life support care" or "life prolongation" or "prolongation of life" or (extraordinary adj treatment*)).ti,ab,hw. 189
134 Withholding treatment/ 72
135 ((Treatment* or care) adj (cessation* or withdrawl or withdrawal or withhold or withholding)).ti,ab,hw. 41
136 tu.fs. 0
137 Ventilator Weaning/ 0
138 ((Ventilator or ventilation or "life support" or "life-sustaining" or respirator) adj2 (weaning or withdraw or withdrawl or withdrawal or withdrawing)).ti,ab,hw. 163
139 ("Terminal weaning" or "Immediate extubation" or "Treatment limitation").ti,ab,hw. 4
140 Pain management/ 0
141 (Symptom* adj (manage or management)).ti,ab,kw,kf. 0
142 or/122-141 1406
143 Documentation/ 263
144 "Forms and Records Control"/ 0
145 Guidelines/ 2304
146 Medical Records/ 395

147 Health Policy/ 1270
148 exp Policy/ 0
149 organi?ational polic*.ti,ab,hw. 30
150 (policy or policies).ti,ab,hw. 4023
151 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,hw. 214
152 or/143-151 6914
153 142 and 152 127
154 13 and 22 and 153 8
155 limit 154 to yr="2013-2023" 2
156 remove duplicates from 155 2
157 Pastoral care/ 49
158 ((Spiritual or pastoral) adj (care or comfort or distress or well-being or support or psychology)).ti,ab,hw. 593
159 exp Culture/ 4002
160 (cultural or customs or belief* or "family tradition" or "family traditions" or ceremonial or ritual or rituals).ti,ab,hw. 5693
161 157 or 158 or 159 or 160 8700
162 13 and 22 and 161 43
163 limit 162 to yr="2019-2023" 2
164 remove duplicates from 163 2
165 exp Discrimination/ 231
166 (discrimination* or ableism or able-ism or disableism or homophobia* or racism or ethnicism or sexism or xenophobia or ageism or fatphobia* or prejudice*).ti,ab,hw. 1761
167 (("anti gay" or homosexual or anti-homosexual or anti-gay or "sexual orientation") adj (bias or phobia* or shaming or stigma*)).ti,ab,hw. 0
168 ((racist or racial or "racially motivated" or "racially-based" or ethnic or ethnicity-based or ethnicity-related) adj (bias or prejudice* or behavior or behaviour)).ti,ab,hw. 7

169 ((hidden or implicit or subconscious or unconscious) adj (bias or phobia* or shaming or stigma*)).ti,ab,hw. 10
170 ((gender or sex) adj (bias or phobia* or shaming or stigma*)).ti,ab,hw. 33
171 exp Prejudice/ 606
172 (("anti fat" or anti-fat or fat or obesity or weight) adj (bias or phobia* or shaming or stigma*)).ti,ab,hw. 13
173 (gender adj (equality or equity or equalities or equities)).ti,ab,hw. 8
174 ("anti semitism" or anti-semitism* or islamophobia*).ti,ab,hw. 0
175 Health Equity/ 0
176 (health adj (equality or equity or equalities or equities)).ti,ab,hw. 21
177 or/165-176 1831
178 Health Policy/ 1270
179 exp Policy/ 0
180 organi?ational polic*.ti,ab,hw. 30
181 (policy or policies).ti,ab,hw. 4023
182 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab,hw. 214
183 or/178-182 4134
184 177 and 183 92
185 13 and 22 and 184 0
186 limit 185 to yr="2000-2023" 0
187 remove duplicates from 186 0
188 exp Inservice training/ 0
189 exp education/ 21706
190 Education medical/ 4905
191 exp Education, Continuing/ 544
192 exp Teaching/ 1624
193 ((interprofessional or Inservice or "in service" or "in-service" or "on the job" or "on-the-job" or orientation or academic) adj (training or program* or education)).ti,ab,hw. 520

194 (training or education or educational).ti,ab,hw. 39672
195 188 or 189 or 190 or 191 or 192 or 193 or 194 42510
196 13 and 22 and 195 94
197 limit 196 to yr="2000-2023" 85
198 remove duplicates from 197 80
199 exp Education/ 21706
200 ((patient or family or consumer) adj2 (education or information)).ti,ab,hw. 3072
201 ("educational interventions" or "educational intervention").ti,ab,hw. 234
202 199 or 200 or 201 22532
203 exp Patient Care Planning/ 665
204 (Care adj2 (goal* or plan*)).ti,ab,hw. 1882
205 (advance adj2 planning).ti,ab,hw. 326
206 ("expectations of care" or GOCD).ti,ab,hw. 11
207 or/203-206 1910
208 exp Hospitals/ or exp Hospital Units/ 1516
209 Hospitalization/ 2130
210 Hospital care/ 0
211 exp HOSPITAL DEPARTMENTS/ or HOSPITAL SHARED SERVICES/ 245
212 MEDICAL STAFF, HOSPITAL/ or HOSPITALISTS/ or *Hospital personnel/ or *Hospital physician/ or *Medical staff/ 0
213 Inpatients/ or *hospital patient/ 636
214 Patient transfer/ 100
215 "length of stay"/ or hospital admission/ or Hospital discharge/ or Hospital readmission/ or Patient transport/ 642
216 hospital$.ab. 13268
217 (hospital$ or WARD or WARDS).ti. 3178
218 "length of stay"/ or Patient admission/ or Patient discharge/ or Patient readmission/ or ((patient? or hospital$).ti,hw. and (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?).ti.) or "length of stay".ti. 1986

219 (((patient? or hospital?) adj2 (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) or "length of stay").ab. 4113
220 (inpatient? or in?patient?).ti. 1270
221 or/208-220 18484
222 202 and 207 and 221 37
223 13 and 22 and 222 1
224 limit 223 to yr="2014-2023" 0
225 remove duplicates from 224 0
226 39 or 85 or 104 or 120 or 155 or 163 or 186 or 197 or 224 149

PsycInfo
APA PsycInfo <1806 to January Week 4 2023>

1 palliative care/ 14390
2 Terminal care/ 0
3 Terminally ill/ 4961
4 (terminal* or palliative or dying or hospice* or ((advanced or late or last or end or final) adj (stage* or phase*))).mp. 94397
5 ("terminal* ill*" or "terminal disease").mp. 7754
6 (advanced adj6 (disease* or cancer or illness)).mp. 6185
7 (("end stage" or "end-stage" or endstage or "late stage" or "late-stage") and (disease* or illness)).mp. 3165
8 ("end-of-life" or "End of life" or (life adj limit*) or eol).mp. 12405
9 (near-death or death or dies or die or dying or palliati*).mp. 155411
10 exp hospices/ 0
11 exp Hospice Care/ 0
12 ((hospice adj care) or (hospice adj caring)).mp. 2628
13 or/1-12 193868
14 exp *Critical Care/ 0
15 *Critical Care Nursing/ 0

16 exp *Critical Illness/ 0
17 exp *Intensive Care Units/ 0
18 exp *Intensive Care/ 5535
19 exp *Intensive Care Unit/ 0
20 (((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?)) or healthcare facilit* or health-care facilit*).ti,ab. 23332
21 (ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs).ti. 560
22 ((ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs) and ((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) adj (care or therap* or treatment* or unit?))).tw. 2664
23 (intensive care unit? or intensive therapy unit? or burn unit? or coronary care unit? or high dependency unit? or recovery room? or respiratory care unit? or "acute hospital setting" or "acute hospital settings").tw. 8666
24 or/14-23 24838
25 (Randomized Controlled Trial or Controlled Clinical Trial or Pragmatic Clinical Trial or Equivalence Trial or Clinical Trial, Phase III).pt. 0
26 Randomized Controlled Trial/ 939
27 exp Randomized Controlled Trials as Topic/ 0
28 "Randomized Controlled Trial (topic)"/ 0
29 Controlled Clinical Trial/ 0
30 exp Controlled Clinical Trials as Topic/ 0
31 "Controlled Clinical Trial (topic)"/ 0
32 Randomization/ 0
33 Random Allocation/ 0
34 Double-Blind Method/ 0
35 Double Blind Procedure/ 0
36 Double-Blind Studies/ 0

37 Single-Blind Method/ 0
38 Single Blind Procedure/ 0
39 Single-Blind Studies/ 0
40 Placebos/ 0
41 Placebo/ 6392
42 Control Groups/ 952
43 Control Group/ 952
44 (random* or sham or placebo*).ti,ab,hw. 266776
45 ((singl* or doubl*) adj (blind* or dumm* or mask*)).ti,ab,hw. 28487
46 ((tripl* or trebl*) adj (blind* or dumm* or mask*)).ti,ab,hw. 113
47 (control* adj3 (study or studies or trial* or group*)).ti,ab. 191744
48 (Nonrandom* or non random* or non-random* or quasi-random* or quasirandom*).ti,ab,hw. 6200
49 allocated.ti,ab,hw. 12546
50 ((open label or open-label) adj5 (study or studies or trial*)).ti,ab,hw. 5110
51 ((equivalence or superiority or non-inferiority or noninferiority) adj3 (study or studies or trial*)).ti,ab,hw. 1149
52 (pragmatic study or pragmatic studies).ti,ab,hw. 134
53 ((pragmatic or practical) adj3 trial*).ti,ab,hw. 1035
54 ((quasiexperimental or quasi-experimental) adj3 (study or studies or trial*)).ti,ab,hw. 6684
55 (phase adj3 (III or "3") adj3 (study or studies or trial*)).ti,hw,ab. 1904
56 or/25-55 390898
57 epidemiologic methods/ 0
58 epidemiologic studies/ 0
59 observational study/ 0
60 observational studies as topic/ 0
61 clinical studies as topic/ 0
62 controlled before-after studies/ 0
63 cross-sectional studies/ 0
64 historically controlled study/ 0

65 interrupted time series analysis/ 0
66 exp seroepidemiologic studies/ 0
67 national longitudinal study of adolescent health/ 0
68 cohort studies/ 0
69 cohort analysis/ 1650
70 longitudinal studies/ 16058
71 longitudinal study/ 0
72 prospective studies/ 1254
73 prospective study/ 0
74 follow-up studies/ 0
75 follow up/ 0
76 followup studies/ 12394
77 retrospective studies/ 868
78 retrospective study/ 0
79 case-control studies/ 0
80 exp case control study/ 0
81 cross-sectional study/ 0
82 observational study/ 0
83 quasi experimental methods/ 473
84 quasi experimental study/ 0
85 (observational study or validation studies or clinical study).pt. 0
86 (observational adj3 (study or studies or design or analysis or analyses)).ti,ab. 18196
87 cohort*.ti,ab. 94434
88 (prospective adj7 (study or studies or design or analysis or analyses)).ti,ab. 45219
89 ((follow up or followup) adj7 (study or studies or design or analysis or analyses)).ti,ab. 32374
90 ((longitudinal or longterm or (long adj term)) adj7 (study or studies or design or analysis or analyses or data)).ti,ab. 120938
91 (retrospective adj7 (study or studies or design or analysis or analyses or data or review)).ti,ab. 30198
92 ((case adj control) or (case adj comparison) or (case adj controlled)).ti,ab. 13017

93 (case-referent adj3 (study or studies or design or analysis or analyses)).ti,ab. 20
94 (population adj3 (study or studies or analysis or analyses)).ti,ab. 32890
95 (descriptive adj3 (study or studies or design or analysis or analyses)).ti,ab. 32109
96 ((multidimensional or (multi adj dimensional)) adj3 (study or studies or design or analysis or analyses)).ti,ab. 3128
97 (cross adj sectional adj7 (study or studies or design or research or analysis or analyses or survey or findings)).ti,ab. 86232
98 ((natural adj experiment) or (natural adj experiments)).ti,ab. 1521
99 (quasi adj (experiment or experiments or experimental)).ti,ab. 15249
100 ((non experiment or nonexperiment or non experimental or nonexperimental) adj3 (study or studies or design or analysis or analyses)).ti,ab. 3027
101 (prevalence adj3 (study or studies or analysis or analyses)).ti,ab. 9624
102 or/57-101 443682
103 exp Decision Making/ 139752
104 exp Decision support techniques/ 0
105 (decide or deciding or decision or decisionmak*).tw. 194310
106 Communication/ 33313
107 communicates.tw. 1541
108 cooperative behavior/ 0
109 (collaborate? or cooperate?).ti,ab. 13590
110 Interdisciplinary Communication/ or interprofessional relations/ or patient care team/ 0
111 (interdisciplinary or multidisciplinary).ti,ab. 46449
112 Patient participation/ or consumer participation/ or Physician-nurse relations/ or doctor nurse relation/ or patient compliance/ or patient care planning/ or Physician-patient relations/ 9902
113 Profession-Family Relations/ or Family Nursing/ 0
114 (family adj (centered or focused or meetings or conferences)).ti,ab. 4393
115 exp Advance care planning/ or Advance? Care planning.ti,ab. 1515
116 exp Advance Directives/ or Advance? Care Directive?.ti,ab. 2039
117 or/103-116 347597
118 13 and 24 and 56 and 117 52

119 limit 118 to yr="2013-2023" 37
120 remove duplicates from 119 37
121 exp advance Directives/ and Decision Making/ 544
122 Advance Care Planning/ 0
123 Advance Directive Adherence/ 0
124 Living Wills/ 2008
125 Proxy/ 0
126 exp Third-Party Consent/ 0
127 Presumed Consent/ 0
128 Patient Preference/ and Decision Making/ 0
129 (exp Family/ or Critically ill/ or Terminally ill/ or Caregivers/ or Legal Guardians/ or Moral Obligation/ or Personal Satisfaction/) and Decision Making/ 5620
130 Advance? Care planning.mp. 1926
131 ((Advance? or adherence?) adj2 Directive?).mp. 3118
132 (alternate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 20
133 (alternative?? adj3 (decision-mak* or decisionmak* or consent*)).mp. 438
134 ((carer? or caregiver? or care-giver?) adj3 (decision-mak* or decisionmak* or consent*)).mp. 296
135 ((family or families) adj3 (decision-mak* or decisionmak* or consent*)).mp. 1599
136 (guardian* adj3 (decision-mak* or decisionmak* or consent*)).mp. 146
137 ((proxy or proxies) adj3 (decision-mak* or decisionmak* or consent*)).mp. 241
138 ((presumed or presume) adj (decision-mak* or decisionmak* or consent*)).mp. 85
139 (relative? adj3 (decision-mak* or decisionmak* or consent*)).mp. 262
140 (spous??? adj3 (decision-mak* or decisionmak* or consent*)).mp. 92
141 (surrogate? adj3 (decision-mak* or decisionmak* or consent*)).mp. 681
142 ((community or third party??) adj2 (decision-mak* or decisionmak* or consent*)).mp. 671
143 ((family or families or carer? or caregiver? or care-giver? or guardian* or proxy or proxies or representatite? or spous???) adj3 (share or shares or shared or sharing) adj2 (decision-mak* or decisionmak* or consent?)).mp. 65
144 (consent adj2 board?).mp. 17

145 decisional surrogate?.mp. 1
146 ((decision-making or decisionmak*) adj2 representative?).mp. 24
147 ((health* or legal) adj2 (proxy or proxies)).mp. 291
148 ("living will" or "living wills").mp. 477
149 substitute health-care decision*.mp. 1
150 substitute healthcare decision*.mp. 0
151 (surrogacy and (decision* adj3 authorit*)).mp. 0
152 surrogate consenter?.mp. 1
153 (surrogate and (decision* adj3 authorit*)).mp. 14
154 third party decision*.mp. 20
155 "power? of attorney".mp. 298
156 (patient?? adj1 agent?).mp. 153
157 (patient? adj2 (proxy or proxies)).mp. 246
158 (patient?? adj2 (surrogate? or surrogacy)).mp. 196
159 attorney for personal.mp. 3
160 attorney-in-fact.mp. 2
161 public guardian?.mp. 28
162 public trustee?.mp. 3
163 or/121-162 13043
164 13 and 24 and (56 or 102) and 163 124
165 limit 164 to yr="2018-2023" 51
166 remove duplicates from 165 51
167 Palliative Medicine/ or Palliative Therapy/ 0
168 (palliative medicine or palliative care medicine).ti,ab. 879
169 "Hospice and Palliative Care Nursing"/ or exp Palliative Nursing/ 0
170 ((hospice adj nursing) or palliative care nursing).ti,ab. 95
171 Hospice Care/ 0
172 ((hospice or bereavement or comfort or supportive) adj (care or program? or counseling or treatment or therapy)).ti,ab. 5288
173 exp "Referral and Consultation"/ 0

174 (consultation or referral?).ti,ab. 55072
175 exp Spiritual Therapies/ or (Spiritual adj (care or healing? or therapy or therapies)).ti,ab. or Pastoral Care/ or (Pastoral adj (care or psychology)).ti,ab. 2582
176 exp Religious Personnel/ or (Minister? or priest? or bishop? or pastor? or rabbi? or clergy or monk? or nun?).ti,ab. 17369
177 exp Mental Health Services/ or (Mental adj (health or hygiene) adj service?).ti,ab. or (psychologist? or psychiatrist?).ti,ab. 179289
178 Ethicists/ or (bioethicist? or ethicist?).ti,ab. 1210
179 Health Educators/ or health educator?.ti,ab. 1439
180 Hospital Volunteers/ or hospital volunteer?.ti,ab. 44
181 Social workers/ or (social worker? or "case worker" or "social case worker").ti,ab. 30881
182 or/167-181 272978
183 13 and 24 and (56 or 102) and 182 183
184 limit 183 to yr="2020-2023" 47
185 remove duplicates from 184 46
186 Organizational Policy/ 28731
187 exp Policy/ 0
188 organi?ational polic*.ti,ab. 1041
189 (policy or policies).ti,ab. 187800
190 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab. 7110
191 or/186-190 194376
192 Family conflict/ 3318
193 Conflict/ 24745
194 Conflict, Psychological/ 0
195 Conflict*.ti,ab. 138038
196 Medical futility/ 0
197 ((Futile or futility) adj (treatment* or medical)).ti,ab. 67
198 or/192-197 140608

199 191 and 198 7650
200 13 and 24 and (56 or 102) and 199 0
201 limit 200 to yr="2020-2023" 0
202 remove duplicates from 201 0
203 Resuscitation Orders/ 0
204 (resuscitation adj (decision* or order* or policy or policies)).ti,ab. 82
205 Cardiopulmonary Resuscitation/ 443
206 (cpr or (("cardio pulmonary" or "cardio-pulmonary" or cardiopulmonary or "mouth to mouth" or "mouth-to-mouth") adj resuscitation*)).ti,ab. 1019
207 ((Passive or negative) adj euthanasia).ti,ab. 64
208 ((withdrawl or withdrawal or withhold or withholding) adj ("life-prolonging treatment" or "allowing to die")).ti,ab. 4
209 Advance directive adherence/ or (living will/ or "advance care planning"/) 2008
210 Advance directive*.ti,ab. 1543
211 ((Directive or guideline) adj (adherence* or compliance)).ti,ab. 309
212 ((dnr or "do not resuscitate" or resuscitation) adj order*).ti,ab. 343
213 Life Support Care/ 0
214 ("life support care" or "life prolongation" or "prolongation of life" or (extraordinary adj treatment*)).ti,ab. 132
215 Withholding treatment/ or treatment withdrawal/ 0
216 ((Treatment* or care) adj (cessation* or withdrawl or withdrawal or withhold or withholding)).ti,ab. 381
217 Ventilator Weaning/ 0
218 ((Ventilator or ventilation or "life support" or "life-sustaining" or respirator) adj2 (weaning or withdraw or withdrawl or withdrawal or withdrawing)).ti,ab. 346
219 ("Terminal weaning" or "Immediate extubation" or "Treatment limitation").ti,ab. 20
220 Pain management/ or analgesia/ 15143
221 (Symptom* adj (manage or management)).ti,ab. 2258
222 or/203-221 22178
223 Documentation/ 0

224 "Forms and Records Control"/ 0
225 Practice Guidelines as Topic/ 0
226 Medical Records/ 3307
227 Organizational Policy/ 28731
228 exp Policy/ 0
229 organi?ational polic*.ti,ab. 1041
230 (policy or policies).ti,ab. 187800
231 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab. 7110
232 or/223-231 197482
233 222 and 232 787
234 13 and 24 and (56 or 102) and 233 3
235 limit 234 to yr="2013-2023" 0
236 remove duplicates from 235 0
237 Pastoral care/ 0
238 ((Spiritual or pastoral) adj (care or comfort or distress or well-being or support or psychology)).ti,ab. 4598
239 exp Culture/ 0
240 (cultural or customs or belief* or "family tradition" or "family traditions" or ceremonial or ritual or rituals).ti,ab. 340925
241 237 or 238 or 239 or 240 344701
242 13 and 24 and (56 or 102) and 241 55
243 limit 242 to yr="2019-2023" 19
244 remove duplicates from 243 19
245 exp Social Discrimination/ 16317
246 (discrimination* or ableism or able-ism or disableism or homophobia* or racism or ethnicism or sexism or xenophobia or ageism or fatphobia* or prejudice*).ti,ab. 112391
247 (("anti gay" or homosexual or anti-homosexual or anti-gay or "sexual orientation") adj (bias or phobia* or shaming or stigma*)).ti,ab. 96

248 ((racist or racial or "racially motivated" or "racially-based" or ethnic or ethnicity-based or ethnicity-related) adj (bias or prejudice* or behavior or behaviour)).ti,ab. 2541
249 ((hidden or implicit or subconscious or unconscious) adj (bias or phobia* or shaming or stigma*)).ti,ab. 1047
250 ((gender or sex) adj (bias or phobia* or shaming or stigma*)).ti,ab. 2357
251 exp Prejudice/ 9173
252 (("anti fat" or anti-fat or fat or obesity or weight) adj (bias or phobia* or shaming or stigma*)).ti,ab. 1040
253 (gender adj (equality or equity or equalities or equities)).ti,ab. 3706
254 ("anti semitism" or anti-semitism* or islamophobia*).ti,ab. 1168
255 Health Equity/ 0
256 (health adj (equality or equity or equalities or equities)).ti,ab. 1364
257 or/245-256 129693
258 organizational Policy/ 28731
259 exp Policy/ 0
260 organi?ational polic*.ti,ab. 1041
261 (policy or policies).ti,ab. 187800
262 ((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) adj (strategy or strategies or policy or policies or measure or measures or practice)).ti,ab. 7110
263 or/258-262 194376
264 257 and 263 9269
265 13 and 24 and 264 5
266 limit 265 to yr="2000-2023" 5
267 remove duplicates from 266 5
268 exp Inservice training/ 3317
269 Interprofessional education/ 0
270 Medical Education/ 19577
271 exp Education, Continuing/ 0
272 exp Teaching/ 134882

273 ((interprofessional or Inservice or "in service" or "in-service" or "on the job" or "on-the-job" or orientation or academic) adj (training or program* or education)).ti,ab. 7920
274 (training or education or educational).ti,ab. 726036
275 268 or 269 or 270 or 271 or 272 or 273 or 274 806000
276 13 and 24 and 56 and 275 33
277 limit 276 to yr="2000-2023" 32
278 remove duplicates from 277 31
279 exp Education/ 477612
280 ((patient or family or consumer) adj2 (education or information)).ti,ab. 11888
281 ("educational interventions" or "educational intervention").ti,ab. 6186
282 279 or 280 or 281 488680
283 exp Patient Care Planning/ 10854
284 (Care adj2 (goal* or plan*)).ti,ab. 7573
285 (advance adj2 planning).ti,ab. 1654
286 ("expectations of care" or GOCD).ti,ab. 145
287 or/283-286 17746
288 exp Hospitals/ or exp Hospital Units/ or exp *Hospital/ 27534
289 exp *Ward/ 0
290 Hospitalization/ or *Hospitalization/ 8466
291 *Hospital care/ or *Intensive care/ 4145
292 *Hospital service/ 0
293 exp HOSPITAL DEPARTMENTS/ or HOSPITAL SHARED SERVICES/ 0
294 MEDICAL STAFF, HOSPITAL/ or HOSPITALISTS/ or *Hospital personnel/ or *Hospital physician/ or *Medical staff/ or *Resident/ 0
295 Inpatients/ or *hospital patient/ 0
296 Patient transfer/ 291
297 *"length of stay"/ or *hospital admission/ or *Hospital discharge/ or *Hospital readmission/ or *Patient transport/ 7390
298 hospital$.ab. 167165
299 (hospital$ or WARD or WARDS).ti. 38052

300 "length of stay"/ or Patient admission/ or Patient discharge/ or Patient readmission/ or ((patient? or hospital$).ti,hw. and (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?).ti.) or "length of stay".ti. 11953
301 (((patient? or hospital?) adj2 (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) or "length of stay").ab. 28098
302 (inpatient? or in?patient?).ti. 12560
303 or/288-302 198133
304 282 and 287 and 303 259
305 13 and 24 and 56 and 304 0
306 limit 305 to yr="2014-2023" 0
307 remove duplicates from 306 0
308 119 or 165 or 184 or 201 or 235 or 243 or 266 or 277 or 306 161

CINAHL

Tuesday, January 31, 2023 6:43:43 PM

#	Query	Limiters/Expanders	Last Run Via
S197	(MH "Prospective Studies")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S196	S195 not S194	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S195	S174 OR S175 OR S176 OR S177 OR S178 OR S179 OR S180 OR S181 OR S182 OR S183 OR S184 OR S185 OR S186 OR S187 OR S188	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S194	S192 not S193	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S193	MH human	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S192	S189 OR S190 OR S191	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S191	TI animal model*	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S190	MH animal studies	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S189	MH animals+	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S188	AB cluster W3 RCT	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S187	MH crossover design OR MH comparative studies	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S186	AB control W5 RCT	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S185	PT ransomized controlled trial	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S184	MH placebos	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S183	MH sample size AND AB (assigned OR allocated OR control)	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S182	TI trial	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S181	AB random*	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S180	TI (randomised or randomized)	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S179	(MH "Cluster Sample")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S178	(MH "Pretest-Posttest Design")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S177	(MH "Random Assignment")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S176	(MH "Single-Blind Studies")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S175	(MH "Double-Blind Studies")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S174	(MH "Randomized Controlled Trials")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S173	S172	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S172	S171	Limiters - Published Date: 20140101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S171	S13 and S22 and S170	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S170	S159 AND S162 AND S169	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S169	S163 OR S164 OR S165 OR S166 OR S167 OR S168	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S168	AB hospital$ OR TI ((hospital$ or WARD or WARDS)) OR TI (((patient? or hospital$) and (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) OR TI "length of stay" OR TI ((inpatient? or in?patient?)) OR AB ((((patient? or hospital?) N22 (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) or "length of stay"))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S167	AB hospital$ OR TI ((hospital$ or WARD or WARDS)) OR TI (((patient? or hospital$) and (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) OR TI "length of stay" OR TI ((inpatient? or in?patient?)) OR ((((patient? or hospital?) N22 (discharg$ or admission? or admitted or admitting or readmission? or readmit$ or re-admission? or re-admit? or transfer?)) or "length of stay"))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S166	(MH "Length of Stay")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S165	(MH "Transfer, Discharge")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S164	(MH "Inpatients")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S163	(MH "Hospitals") OR (MH "Medical Staff, Hospital") OR (MH "Hospitalists") OR (MH "Hospitalization")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S162	S160 OR S161	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S161	TX ((Care N2 (goal* or plan*))) OR TX (advance N2 planning) OR TX (("expectations of care" or GOCD))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S160	(MH "Patient Care Plans+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S159	S157 OR S158	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S158	TX (((patient or family or consumer) N2 (education or information))) OR TX (("educational interventions" or "educational intervention"))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S157	(MH "Education+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S156	S155	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S155	S154	Limiters - Published Date: 20000101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S154	S13 and S22 and S153	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S153	S149 OR S150 OR S151 OR S152	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S152	TX (((interprofessional or Inservice or "in service" or "in-service" or "on the job" or "on-the-job" or orientation or academic) N1 (training or program* or education))) OR TX ((training or education or educational))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S151	(MH "Teaching")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S150	(MH "Education, Interdisciplinary")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S149	(MH "Education, Continuing")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S148	S147	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S147	S146	Limiters - Published Date: 20000101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S146	S13 AND S22 AND S145	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S145	S141 AND S144	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S144	S142 OR S143	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S143	TX organi?ational polic* OR TX ((policy or policies)) OR TX (((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) N1 (strategy or strategies or policy or policies or measure or measures or practice)))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S142	(MH "Policy and Procedure Manuals")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S141	S139 OR S140	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S140	(MH "Prejudice") OR (MH "Weight Bias") OR (MH "Racism") OR (MH "Implicit Bias") OR (MH "Gender Bias") OR (MH "Cultural Bias")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S139	TX ((discrimination* or ableism or able-ism or disableism or homophobia* or racism or ethnicism or sexism or xenophobia or ageism or fatphobia* or prejudice*)) OR TX ((("anti gay" or homosexual or anti-homosexual or anti-gay or "sexual orientation") N1 (bias or phobia* or shaming or stigma*))) OR TX (((racist or racial or "racially motivated" or "racially-based" or ethnic or ethnicity-based or ethnicity-related) N1 (bias or prejudice* or behavior or behaviour))) OR TX (((hidden or implicit or subconscious or unconscious) N1 (bias or phobia* or shaming or stigma*))) OR TX (((gender or sex) N1 (bias or phobia* or shaming or stigma*))) OR TX ((("anti fat" or anti-fat or fat or obesity or weight) N1 (bias or phobia* or shaming or stigma*))) OR TX ((gender N1 (equality or equity or equalities or equities))) OR TX (("anti semitism" or anti-semitism* or islamophobia*)) OR TX ((health N1 (equality or equity or equalities or equities)))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S138	S137	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S137	S136	Limiters - Published Date: 20190101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S136	S13 AND S22 AND S135	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S135	S133 OR S134	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S134	TX (((Spiritual or pastoral) adj (care or comfort or distress or well-being or support or psychology))) OR TX ((cultural or customs or belief* or "family tradition" or "family traditions" or ceremonial or ritual or rituals))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S133	(MH "Spiritual Care") OR (MH "Culture")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S132	S131	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S131	S130	Limiters - Published Date: 20130101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S130	S13 AND S22 AND S129	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S129	S122 AND S128	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S128	S123 OR S124 OR S125 OR S126 OR S127	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S127	TX ((policy or policies)) OR TX (((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or instituion*) N1 (strategy or strategies or policy or policies or measure or measures or practice)))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S126	TX organi?ational polic*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S125	(MH "Organizational Policies") OR (MH "Policy and Procedure Manuals")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S124	(MH "Practice Guidelines")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S123	(MH "Documentation/ST") OR (MH "Electronic Health Records/ST") OR (MH "Patient Record Systems/ST") OR (MH "Medical Records/ST")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S122	S109 OR S110 OR S111 OR S112 OR S113 OR S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120 OR S121	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S121	TX (Symptom* N1 (manage or management))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S120	(MH "Ventilator Weaning")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S119	TX (((Treatment* or care) adj (cessation* or withdrawl or withdrawal or withhold or withholding))) OR TX (((Ventilator or ventilation or "life support" or "life-sustaining" or respirator) adj2 (weaning or withdraw or withdrawl or withdrawal or withdrawing))) OR TX (("Terminal weaning" or "Immediate extubation" or "Treatment limitation"))	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S118	(MH "Treatment Withdrawal") OR (MH "Euthanasia, Passive")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S117	TX (((Directive or guideline) N1 (adherence* or compliance))) OR TX (((dnr or "do not resuscitate" or resuscitation) N1 order*)) OR TX (("life support care" or "life prolongation" or "prolongation of life" or (extraordinary N1 treatment*)))	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S116	TX Advance directive*	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S115	(MH "Advance Directives")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S114	TX ((withdrawl or withdrawal or withhold or withholding) N1 ("life-prolonging treatment" or "allowing to die"))	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S113	TX ((Passive or negative) N1 euthanasia)	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S112	TX (cpr or (("cardio pulmonary" or "cardio-pulmonary" or cardiopulmonary or "mouth to mouth" or "mouth-to-mouth") N1 resuscitation*)).	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S111	(MH "Resuscitation, Cardiopulmonary")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S110	TX (resuscitation N1 (decision* or order* or policy or policies))	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S109	(MH "Resuscitation Orders")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S108	S107	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S107	S106	Limiters - Published Date: 20200101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S106	S13 AND S22 AND S105	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S105	S99 AND S104	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S104	S100 OR S101 OR S102 OR S103	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S103	TX ((Futile or futility) N1 (treatment* or medical))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S102	(MH "Medical Futility")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S101	TX conflict*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S100	(MH "Family Conflict") OR (MH "Conflict (Psychology)")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S99	S97 OR S98	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S98	TX (organi?ational polic* or (policy or policies)) OR TX (((Organi?ation* or organisation* or corporate or company or workplace or "work place" or hospital or office* or institution*) N1 (strategy or strategies or policy or policies or measure or measures or practice)))	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S97	(MH "Organizational Policies+") OR (MH "Hospital Policies+") OR (MH "Policy and Procedure Manuals")	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S96	S95	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S95	S94	Limiters - Published Date: 20200101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S94	S13 AND S22 AND S93	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S93	S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S92	TX (social worker? or "case worker" or "social case worker")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S91	(MH "Social Workers")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S90	TX hospital volunteer?	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S89	(MH "Volunteer Workers")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S88	TX health educator?	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S87	(MH "Health Educators")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S86	TX (bioethicist? or ethicist?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S85	(MH "Ethicists")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S84	TX Mental N1 (health or hygiene) N1 service?) or (psychologist? or psychiatrist?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S83	(MH "Mental Health Services+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S82	TX (Minister? or priest? or bishop? or pastor? or rabbi? or clergy or monk? or nun?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S81	(MH "Religious Personnel+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S80	TX (Spiritual N1 (care or healing? or therapy or therapies))) OR TX ((Pastoral N1 (care or psychology)))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S79	(MH "Spiritual Care")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S78	TX (consultation or referral?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S77	(MH "Referral and Consultation")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S76	TX ((hospice or bereavement or comfort or supportive) N1 (care or program? or counseling or treatment or therapy))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S75	(MH "Hospice Care")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S74	TX ((hospice N1 nursing) or palliative care nursing)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S73	(MH "Hospice and Palliative Nursing")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S72	TX ("palliative medicine" or "palliative care medicine")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S71	(MH "Palliative Medicine")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S70	S69	Limiters - Exclude MEDLINE records Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S69	S68	Limiters - Published Date: 20180101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S68	S13 AND S22 AND S67	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S67	S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S66	TX third party decision* OR TX "power? of attorney" OR TX (patient?? adj1 agent?) OR TX ((patient? adj2 (proxy or proxies))) OR TX ((patient?? adj2 (surrogate? or surrogacy))) OR TX attorney for personal OR TX attorney-in-fact OR TX public guardian? OR TX public trustee?	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S65	TX ((surrogacy and (decision* N3 authorit*))) OR TX surrogate consenter? OR TX ((surrogate and (decision* N3 authorit*)))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S64	TX substitute health-care decision* OR TX substitute healthcare decision*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S63	TX ("living will" or "living wills")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S62	TX ((health* or legal) N2 (proxy or proxies))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S61	TX ((decision-making or decisionmak*) N2 representative?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S60	TX decisional surrogate?	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S59	TX (consent N2 board?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S58	TX ((family or families or carer? or caregiver? or care-giver? or guardian* or proxy or proxies or representatite? or spous???) N3 (share or shares or shared or sharing) N2 (decision-mak* or decisionmak* or consent?)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S57	TX ((community or third party??) N2 (decision-mak* or decisionmak* or consent*))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S56	TX (surrogate? N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S55	TX (spous??? N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S54	TX (relative? N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S53	TX ((presumed or presume) N1 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S52	TX ((proxy or proxies) N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S51	TX (guardian* N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S50	TX ((family or families) N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S49	TX ((carer? or caregiver? or care-giver?) N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S48	TX (alternative?? N3 (decision-mak* or decisionmak* or consent*)).	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S47	TX (alternate? N3 (decision-mak* or decisionmak* or consent*))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S46	TX ((Advance? or adherence?) N2 Directive?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S45	TX Advance? Care planning	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S44	(MH "Family+") OR (MH "Critically Ill Patients") OR (MH "Critical Illness") OR (MH "Terminally Ill Patients") OR (MH "Caregivers") OR (MH "Guardianship, Legal") OR (MH "Personal Satisfaction") OR (MH "Decision Making") OR (MH "Decision Making, Family")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S43	MH patient preference AND MH decision making	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S42	(MH "Proxy")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S41	(MH "Living Wills")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S40	(MH "Advance Care Planning")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S39	MH advance directives AND MH decision making	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S38	S13 AND S22 AND S37	Limiters - Published Date: 20130101-20231231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S37	S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S36	TX (Advance? Care planning) OR (Advance? Care Directive?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S35	(MH "Advance Care Planning") OR (MH "Advance Directives+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S34	TX (family N1 (centered or focused or meetings or conferences))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S33	(MH "Professional-Family Relations") OR (MH "Family Nursing")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S32	(MH "Consumer Participation") OR (MH "Nurse-Physician Relations") OR (MH "Physician-Patient Relations") OR (MH "Nurse-Patient Relations") OR (MH "Professional-Family Relations") OR (MH "Patient Compliance") OR (MH "Patient Care Plans")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S31	TX (interdisciplinary or multidisciplinary)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S30	(MH "Interprofessional Relations") OR (MH "Multidisciplinary Care Team+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S29	TX (collaborate? or cooperate?)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S28	(MH "Cooperative Behavior")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S27	TX communicates	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S26	(MH "Communication")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S25	TX (decide or deciding or decision or decisionmak*)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S24	(MH "Decision Support Techniques+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S23	(MH "Decision Making+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S22	S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S21	TX (intensive care unit? or intensive therapy unit? or burn unit? or coronary care unit? or high dependency unit? or recovery room? or respiratory care unit? or "acute hospital setting" or "acute hospital settings")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S20	TX ((ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs) and ((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) N1 (care or therap* or treatment* or unit?)))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S19	TI ICU or MICU or CICU or CVICU or CCU or SICU or POCCU or ITU or HDU or ICUs or MICUs or CICUs or CVICUs or CCUs or SICUs or POCCUs or ITUs or HDUs)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S18	TX (((acute* or intensive* or critical* or neurointensive* or neuro-intensive* or neurocritical* or neuro-critical*) N1 (care or therap* or treatment* or unit?)) or healthcare facilit* or health-care facilit*)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S17	(MM "Intensive Care Units+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S16	(MM "Critical Illness")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S15	(MM "Critical Care Nursing")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S14	(MM "Critical Care+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S13	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S12	TX ((hospice N1 care) or (hospice N1 caring))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S11	(MH "Hospice Care") OR (MH "Hospice and Palliative Nursing")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S10	(MH "Hospices") OR (MH "Hospice Patients")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

S9	TX (near-death or death or dies or die or dying or palliati*)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S8	TX (("end-of-life" or "End of life" or (life N1 limit*) or eol)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S7	TX (("end stage" or "end-stage" or endstage or "late stage" or "late-stage") and (disease* or illness))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S6	TX (advanced N6 (disease* or cancer or illness))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S5	TX ("terminal* ill*" or "terminal disease")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S4	TX (terminal* or palliative or dying or hospice* or ((advanced or late or last or end or final) N1 (stage* or phase*)))	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S3	(MH "Terminally Ill Patients")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S2	(MH "Terminal Care")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL
S1	(MH "Palliative Care")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL

ClinicalTrials.gov

3. Electronic Search Strategies

Condition/disease: ("end of life" OR palliative OR terminal OR terminally OR hospice OR dying OR endstage) AND ("critical care" OR "intensive care" OR "critical illness" OR neurointensive OR neuro-intensive OR neurocritical OR ICU OR CCU OR MICU OR CICU)

AND

Other terms (per PICO(s))

PICO 1.1: decide OR deciding OR decision OR communicates OR communication OR Collaborate OR cooperate OR Interdisciplinary OR multidisciplinary

PICO 1.2: directives OR directive OR proxy OR consent OR decision-making OR "decision making" OR "advance care" OR guardian OR surrogate OR attorney

PICO 1.3 and 2.3: supportive OR referral OR consultation OR spiritual OR pastoral OR mental OR ethicist OR educator OR volunteers OR "social worker"

PICO 1.4: (policy OR policies OR strategy OR strategies) AND (conflict OR futile OR futility OR disagreement OR disagree)

PICO 2.1: (resuscitation OR cpr OR cardiopulmonary OR directive OR dnr OR prolongation OR prolong OR withhold OR withdrawal OR withholding OR cessation OR support OR weaning) AND (policy OR policies OR strategy OR strategies OR measure OR measures OR practice)

PICO 2.2: pastoral OR spiritual OR cultural OR custom OR customs OR belief OR beliefs OR tradition OR traditions OR ceremonial OR ceremony OR ritual OR rituals OR culture

PICO 3.1: discrimination OR bias OR stigma OR shaming OR phobia OR prejudice OR equality OR equity OR racism OR sexism OR xenophobia OR ageism OR fatphobia OR ableism OR racist OR racially OR semitism OR islamaphobia

PICO 3.2: inservice OR education OR teaching OR "in service" OR "in-service" OR "on the job" OR "on-the-job" OR orientation

PICO 3.3: (education OR educational OR information) AND (family OR patient OR consumer OR carer)

End of Life Care in ICU – Guidelines for SCCN – Literature Search (update)

Search by: Kaitryn Campbell (campbell.information.consulting@gmail.com)
Requestor: Simon Oczkowski
Date(s): 2023-2024 Sep 27,29
2023* OR 2024*).ed,dt. use medall OR (2023* OR 2024*).yr. use cctr OR (2023* OR 2024*).dc,dd. use oemezd [2023-current entry date in databases]
Limits: ~~Human, adults (≥18 years),~~ [KC1] publication year/database entry date 2023-2024 Sep 27
Databases: Ovid Medline [medall], Embase [oemezd], Cochrane Clinical Trials Register [cctr], AHMED [amed], CINAHL, PsycInfo [psyh], ClinicalTrials.gov
Filters: RCTs OR observational studies (depending on question):

PICO	RCT	Observational
1.1	X	
1.2	X	X
1.3	X	X
1.4	X	X
2.1	X	X
2.2	X	X
2.3	X	X

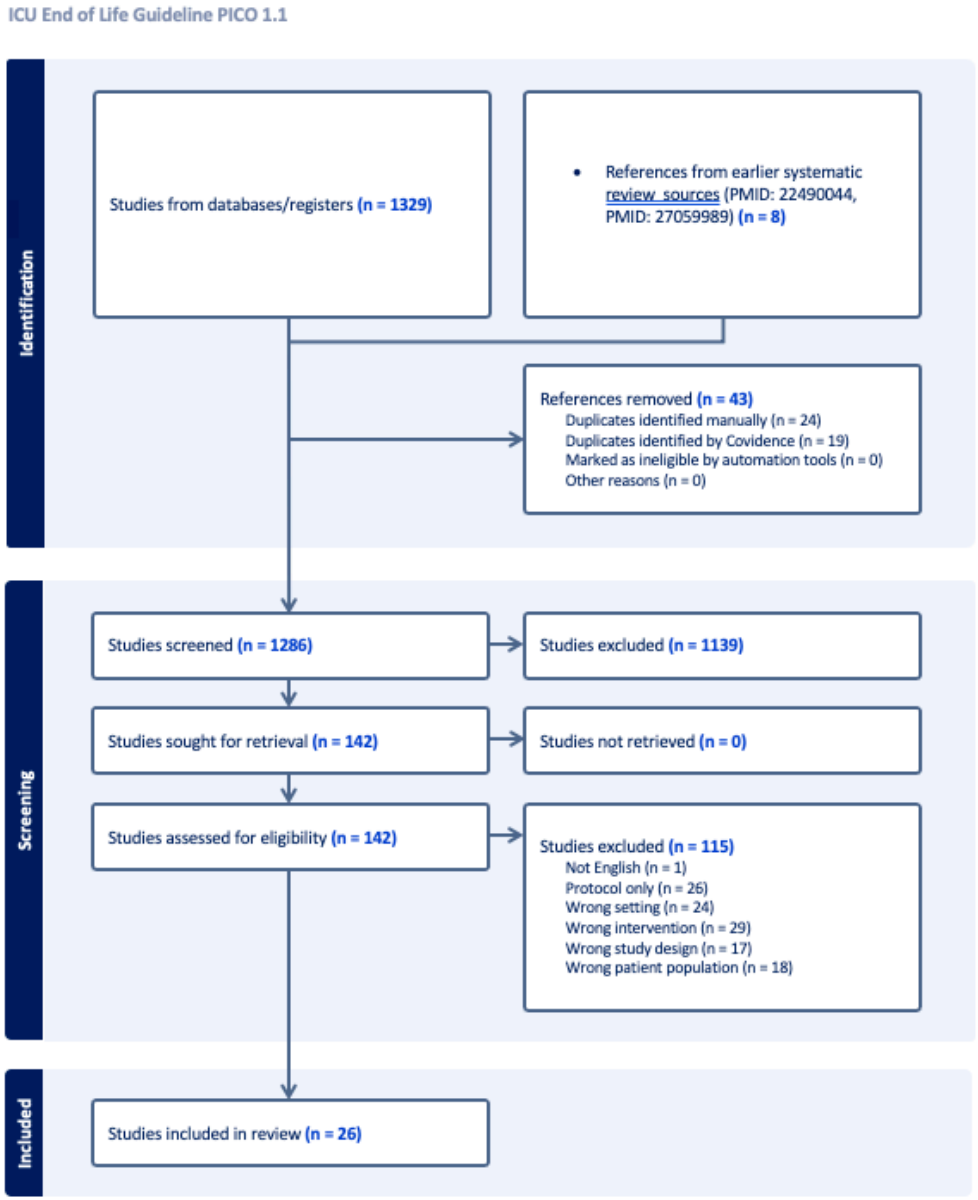
3. Electronic Search Strategies

3.1		
3.2	X	
3.3	X	

Format: RIS output, duplicates removed where possible (for importing into Covidence)
Alerts: Not automated, clients will reach out as and when update(s) needed
Additional Searching: none

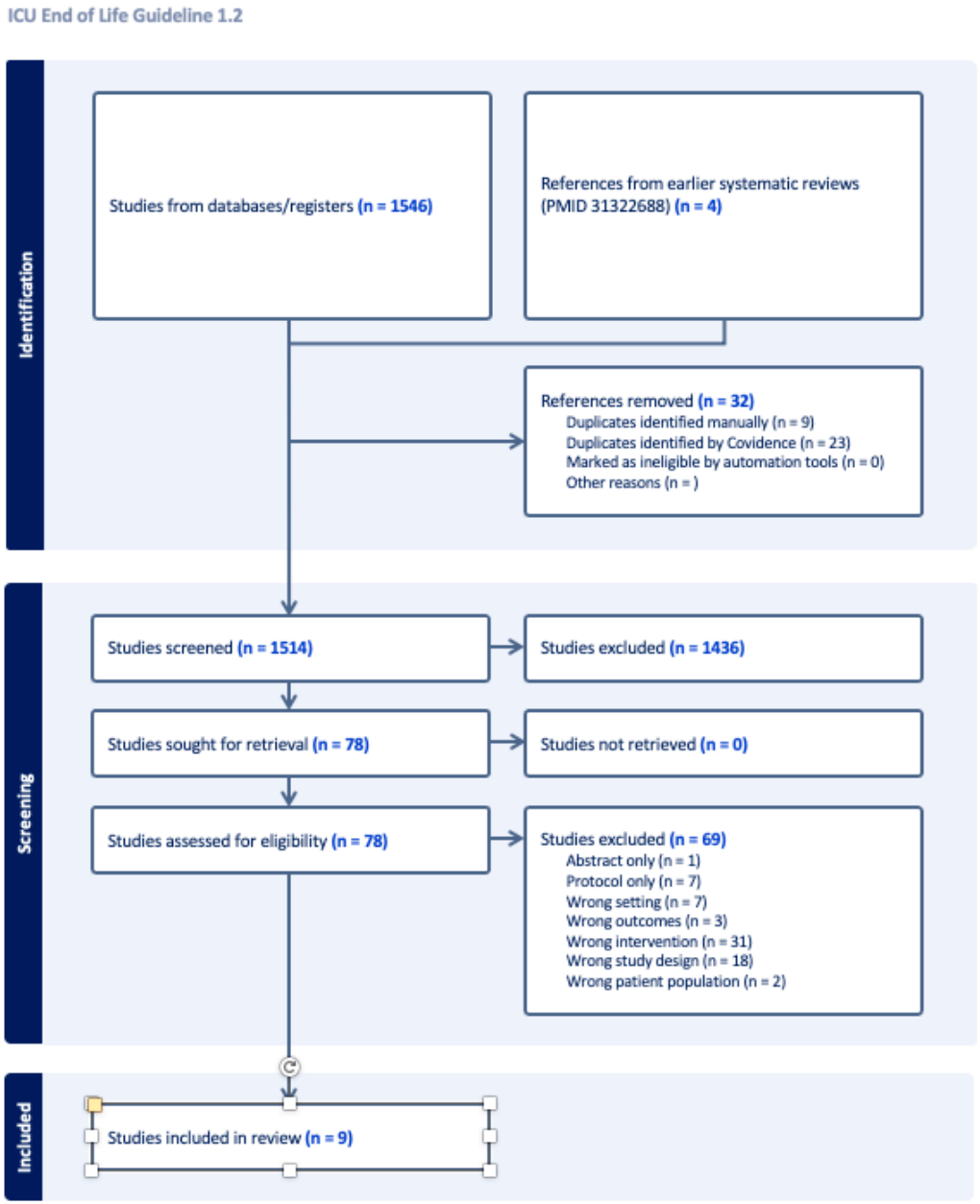
4. PRISMA Flow Diagrams

1. PICO 1.1 - interventions to enhance shared decision-making



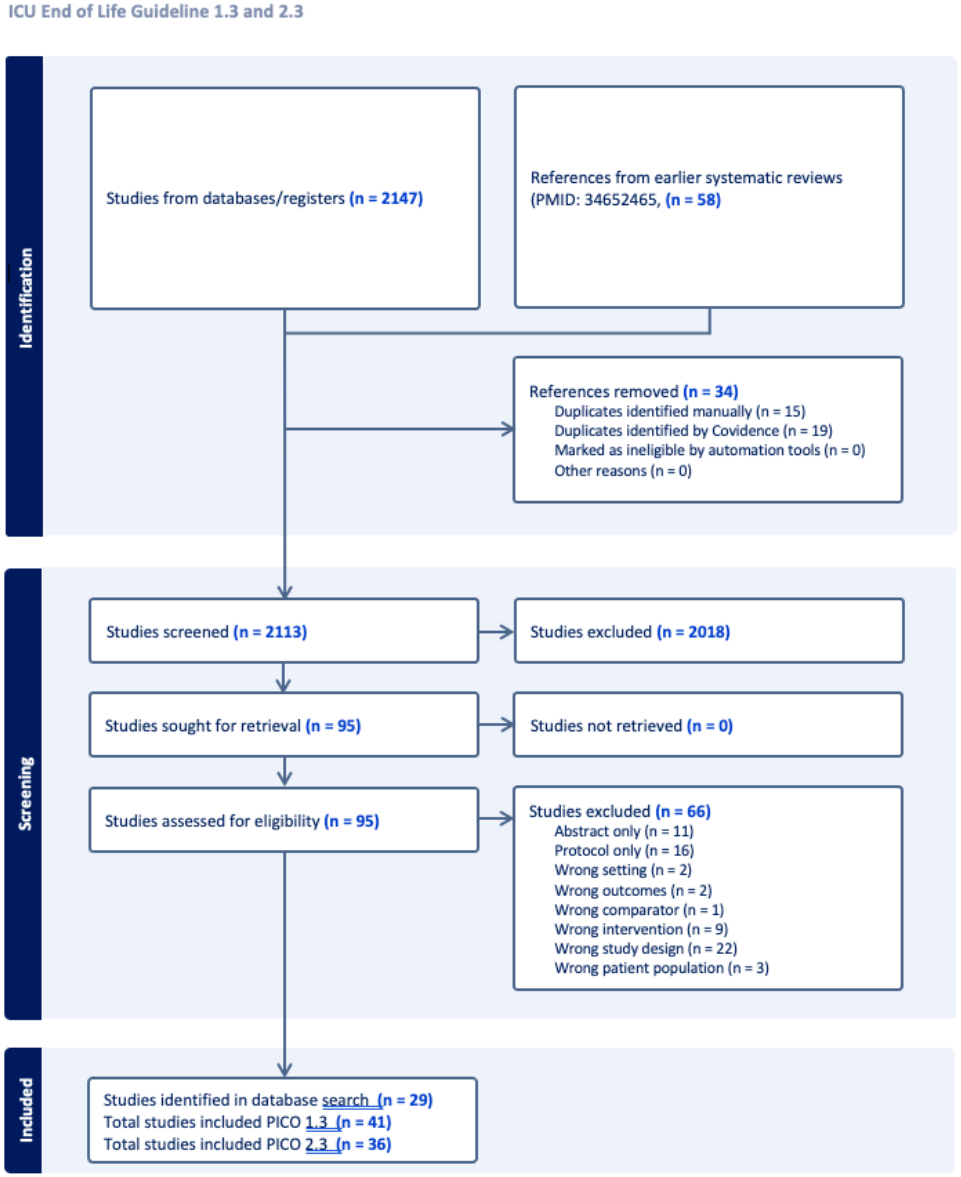
4. PRISMA Flow Diagrams

2. PICO 1.2 - procedural due process for decisionally-incapable patients



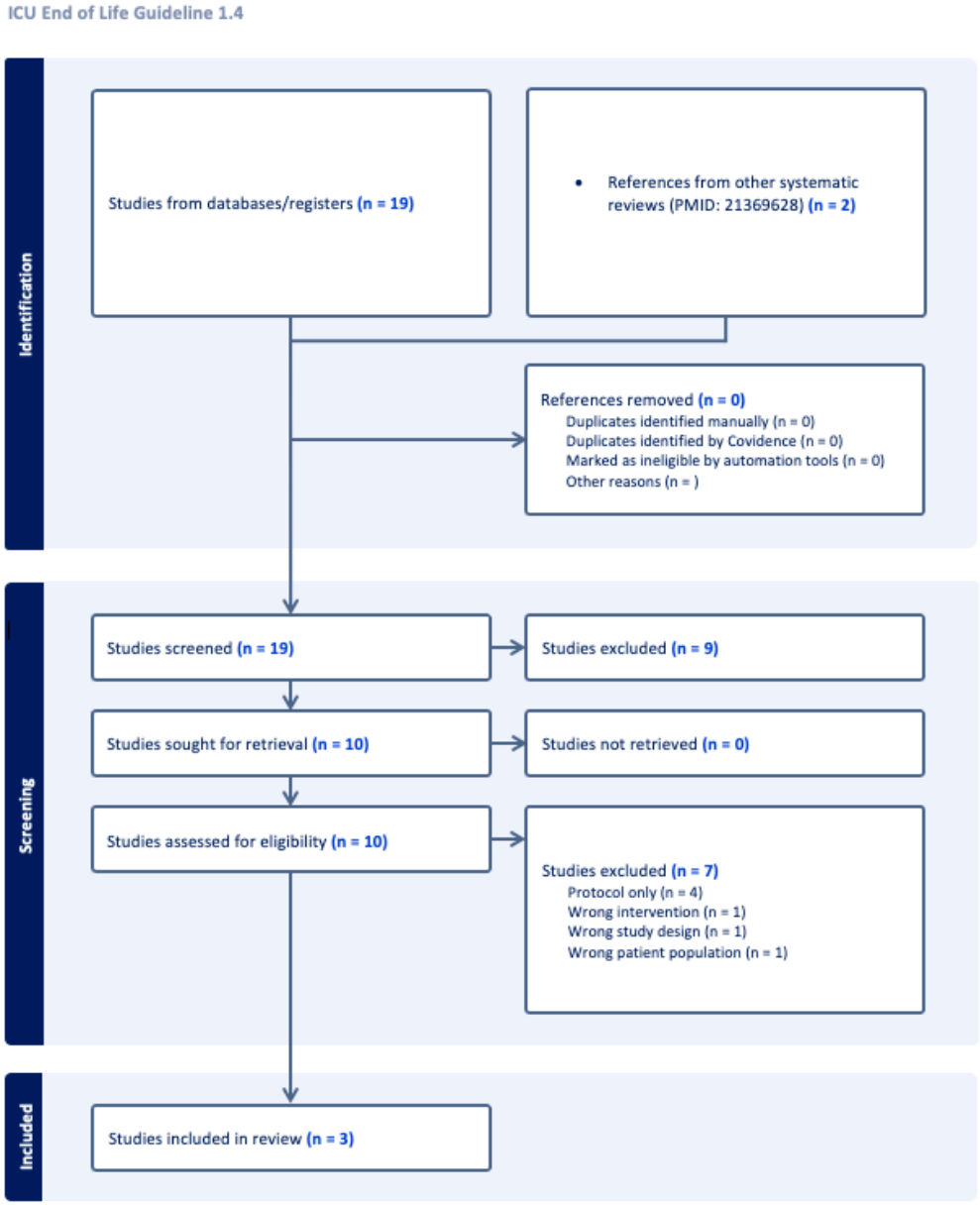
4. PRISMA Flow Diagrams

3. PICO 1.3 - consultation with services to assist with end-of-life decision-making & PICO 2.3 consultation with services to address, prevent, and mitigate suffering at end of life



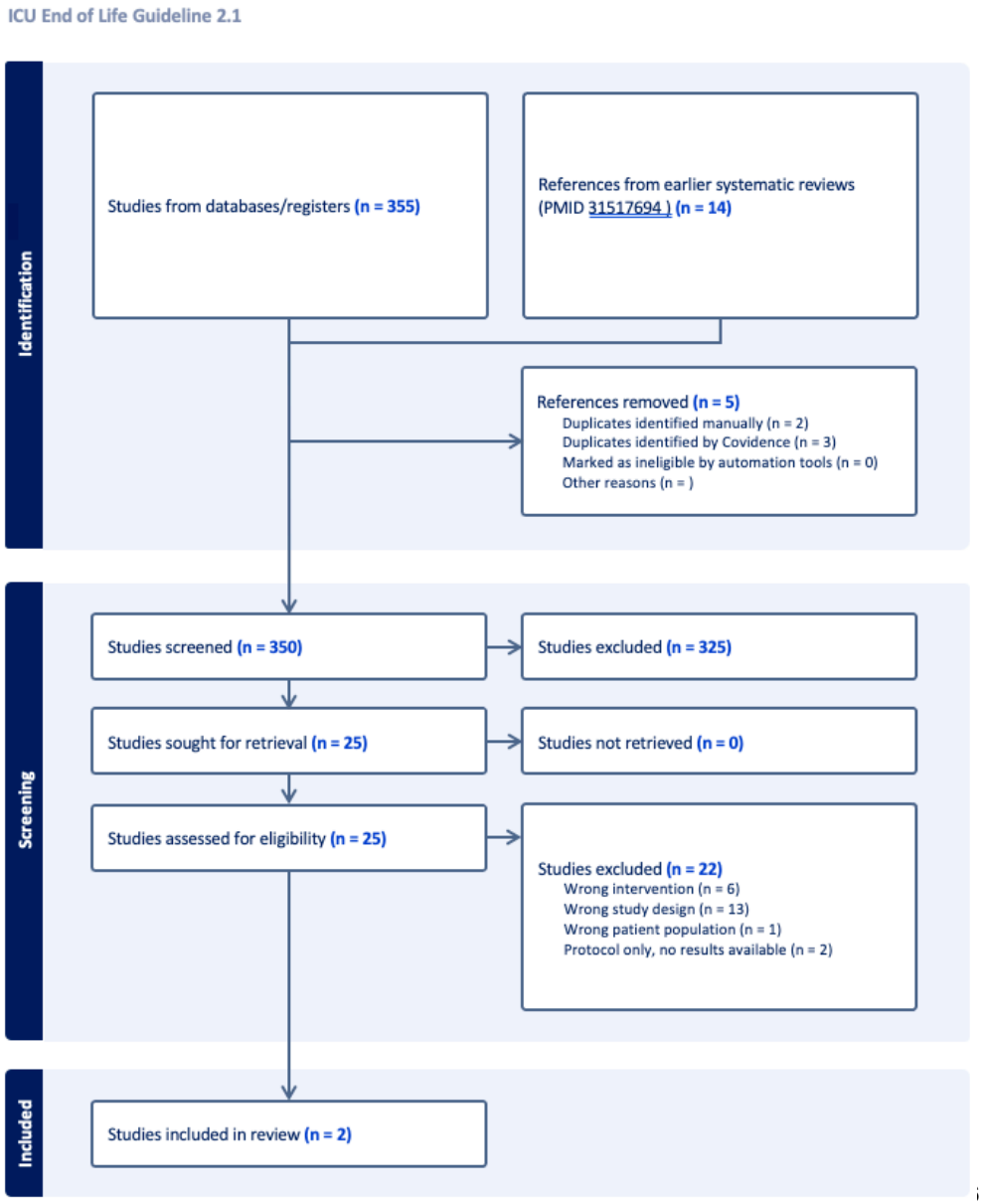
4. PRISMA Flow Diagrams

4. PICO 1.4 - institutional policies to reduce futile and potentially inappropriate treatments



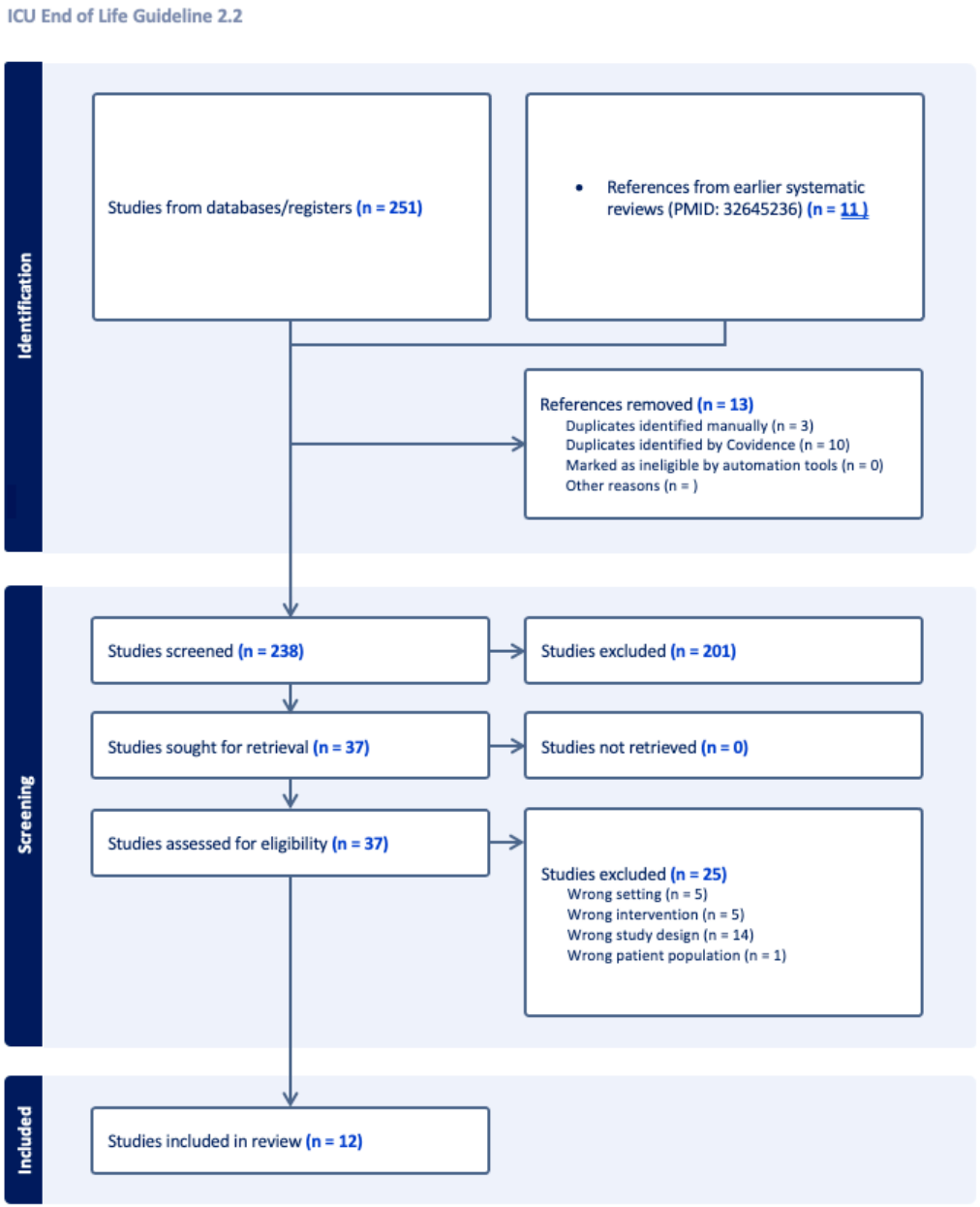
4. PRISMA Flow Diagrams

5. PICO 2.1 - symptom management for dying ICU patients



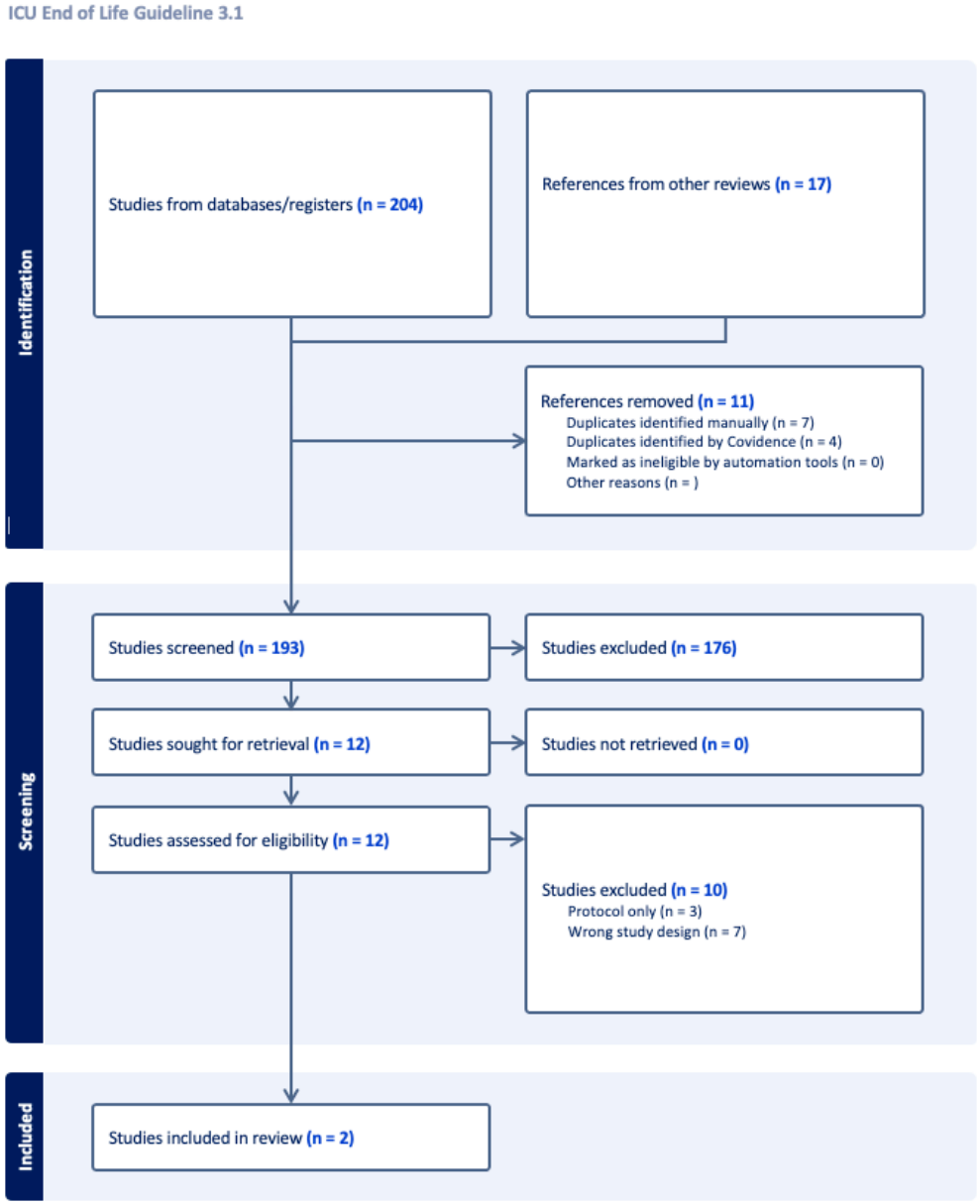
4. PRISMA Flow Diagrams

6. PICO 2.2 - interventions to address cultural, spiritual, and family traditions and needs at end of life



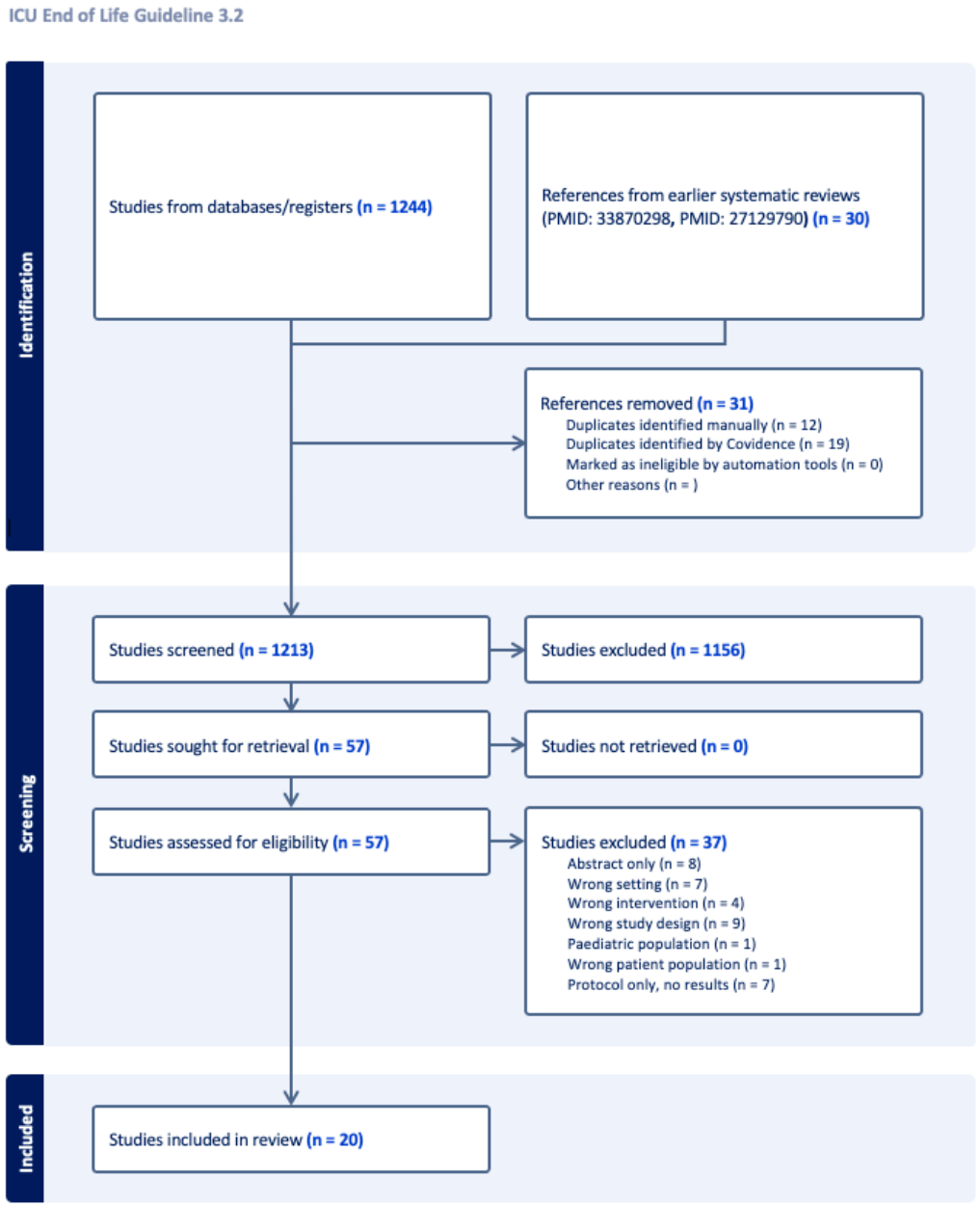
4. PRISMA Flow Diagrams

7. PICO 3.1 - strategies and policies to mitigate inequalities in care at end of life



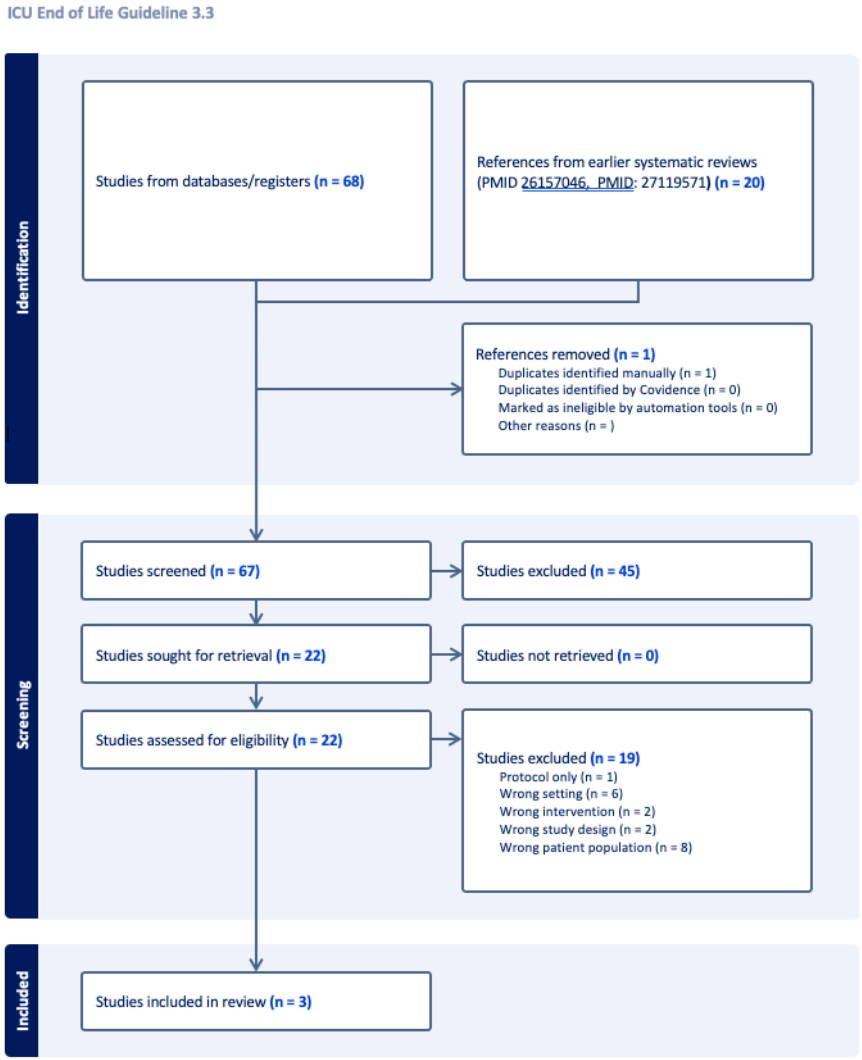
4. PRISMA Flow Diagrams

8. PICO 3.2 - interventions to increase the capacity of ICU team members to provide end-of-life care



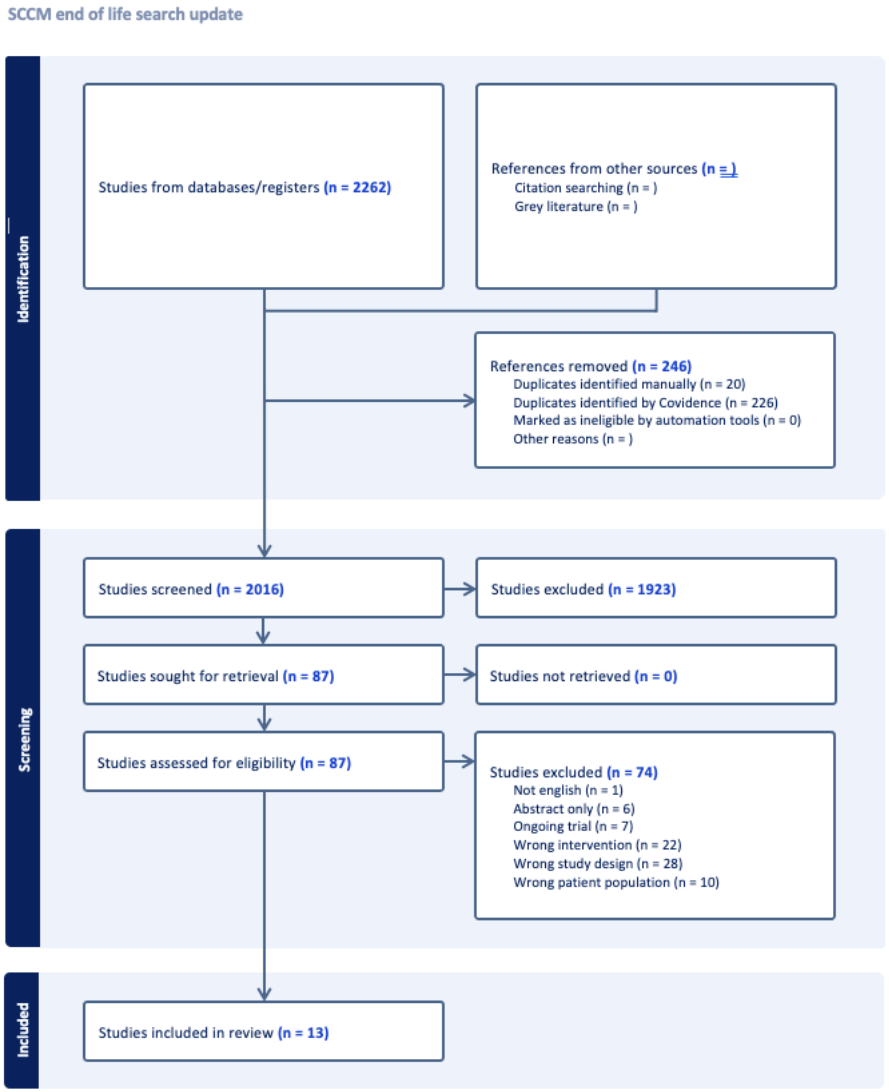
4. PRISMA Flow Diagrams

9. PICO 3.3 - interventions to improve understanding of advance directives and end-of-life treatment options



4. PRISMA Flow Diagrams

10. October 2024 Search update— including all PICO questions



5. Evidence Summaries and Evidence-to-Decision Tables

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Evidence Summary

RCT Data

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	enhanced SDM	usual care	Relative (95% CI)	Absolute (95% CI)		
Decisions to withold/withdraw treatments - RCTs											
3 RCTs	not serious	serious[a]	not serious	not serious[b]	none	449/688 (65.3%)	344/588 (58.5%)	**RR 1.04** (0.84 to 1.28)	**23 more per 1,000** (from 94 fewer to 164 more)	⨁⨁⨁◯ Moderate	CRITICAL
Family satisfaction with care - RCT											
1 RCT	not serious	not serious	not serious	not serious	none	171	247	-	SMD **0.51 lower** (0.7 lower to 0.31 lower)	⨁⨁⨁⨁ High	CRITICAL
Quality of Death and Dying - RCTs											
1 RCT	not serious	not serious	not serious	serious[c]	none	379	307	-	MD **0.7 lower** (0.99 lower to 0.41 lower)	⨁⨁⨁◯ Moderate	CRITICAL
Quality of communication - RCT											
3 RCTs	not serious	not serious	not serious	not serious	none	400	590	-	SMD **0.27 lower** (0.4 lower to 0.14 lower)	⨁⨁⨁⨁ High	CRITICAL
Family anxiety symptoms - RCT											
6 RCTs	not serious	serious[d]	not serious	not serious	none	780	780	-	SMD **0.27 SD lower** (0.45 lower to 0.09 lower)	⨁⨁⨁◯ Moderate	CRITICAL
Family anxiety symptoms - RCT											
3 RCTs	not serious	not serious	not serious	not serious	none	156/475 (32.8%)	195/406 (48.0%)	**RR 0.69** (0.58 to 0.81)	**149 fewer per 1,000** (from 202 fewer to 91 fewer)	⨁⨁⨁⨁ High	CRITICAL

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Family depression symptoms - RCT

6 RCTs	not serious	serious[d]	not serious	not serious	none	780	780	-	SMD **0.25 SD lower** (0.48 lower to 0.02 lower)	⨁⨁⨁◯ Moderate	CRITICAL

Family depression - RCT

3 RCTs	not serious	not serious	not serious	not serious	none	100/475 (21.1%)	136/406 (33.5%)	**RR 0.60** (0.44 to 0.82)	**134 fewer per 1,000** (from 188 fewer to 60 fewer)	⨁⨁⨁⨁ High	CRITICAL

Family HADS score - RCT

7 RCTs	not serious	serious[e]	not serious	not serious	none	1097	1282	-	MD **2.1 lower** (3.82 lower to 0.37 lower)	⨁⨁⨁◯ Moderate	CRITICAL

Family PTSD symptoms - RCT

7 RCTs	not serious	serious[e]	not serious	not serious	none	971	1081	-	MD **4.31 lower** (8.11 lower to 0.5 lower)	⨁⨁⨁◯ Moderate	CRITICAL

Family PTSD symptoms - RCT

3 RCTs	not serious	not serious	not serious	not serious	none	54/437 (12.4%)	89/367 (24.3%)	**RR 0.54** (0.41 to 0.72)	**112 fewer per 1,000** (from 143 fewer to 68 fewer)	⨁⨁⨁⨁ High	CRITICAL

Family decisional conflict - RCT

2 RCTs	not serious	not serious	not serious	very serious[f]	none	21	21	-	MD **4.34 lower** (7.91 lower to 0.76 lower)	⨁⨁◯◯ Low	CRITICAL

Conflicts between family and staff - RCT

1 RCT	not serious	not serious	not serious	very serious[g]	none	1/63 (1.6%)	2/63 (3.2%)	**RR 0.50** (0.05 to 5.38)	**16 fewer per 1,000** (from 30 fewer to 139 more)	⨁⨁◯◯ Low	IMPORTANT

Patient mortality - RCT

6 RCTs	not serious	not serious	not serious	serious[h]	none	736/1834 (40.1%)	654/1645 (39.8%)	**RR 1.01** (0.94 to 1.09)	**4 more per 1,000** (from 24 fewer to 36 more)	⨁⨁⨁◯ Moderate	NOT IMPORTANT

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

ICU length of stay - RCT

9 RCTs	not serious	not serious	not serious	serious[i]	none	1801	2192	-	MD **0.46 lower** (1.72 lower to 0.79 higher)	⨁⨁⨁◯ Moderate	CRITICAL

ICU length of stay (decedents) - RCT

1 RCT	not serious	not serious	not serious	serious[j]	none	69	66	-	MD **20 lower** (30.93 lower to 9.07 lower)	⨁⨁⨁◯ Moderate	CRITICAL

Hospital length of stay - RCT

5 RCTs	not serious	not serious	not serious	serious[i]	none	1300	1595	-	MD **0.89 lower** (3.97 lower to 2.19 higher)	⨁⨁⨁◯ Moderate	CRITICAL

Hospital costs - RCT

3 RCTs	not serious	not serious	not serious	serious[k]	none	893	964	-	SMD **0.03 lower** (0.21 lower to 0.16 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

Hospital costs (decedents) - RCT

RCT	not serious	not serious	not serious	serious[j]	none	18	19	-	SMD **3.01 lower** (3.98 lower to 2.04 lower)	⨁⨁⨁◯ Moderate	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

a. Moderate statistical heterogeneity (I2=31%) with studies demonstrating markedly different effects upon the outcome.
b. We did not rate down for imprecision as this is primarily due to inconsistency.
c. No validated MCID noted in the literature; although statistically significant improvement, the clinical meaning of this difference is unclear.
d. Moderate statistical heterogeneity driven by a single study (Torke 2016) in which family members had non-statistically significantly higher symptom scores.
e. Serious statistical heterogeneity, with I2 values of 78%.
f. Although statistically significant, data comes from two very small studies (42 participants in total) resulting in very serious imprecision.
g. Very small number of events in a single RCT.
h. Wide 95% confidence intervals which do not rule out a clinically meaningful impact upon mortality.
i. Wide 95% confidence intervals which do not rule out a clinically meaningful impact upon length of stay.
j. Data comes from a single trial resulting in serious imprecision.
k. Wide 95% confidence intervals which do not rule out a clinically meaningful difference in costs.

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Observational Data

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	enhanced SDM	usual care	Relative (95% CI)	Absolute (95% CI)		
Decisions to withold/withdraw treatments - Observational												
7	obs studies	not serious	not serious	not serious	serious[a]	none	438/2145 (20.4%)	338/1829 (18.5%)	**RR 1.07** (0.90 to 1.27)	**13 more per 1,000** (from 18 fewer to 50 more)	⨁◯◯◯ Very low	CRITICAL
Family satisfaction with care - Observational												
2	obs studies	not serious	not serious	not serious	serious[a]	none	106	47	-	SMD **0.27 lower** (0.63 lower to 0.09 higher)	⨁◯◯◯ Very low	CRITICAL
Quality of communication - Observational												
1	obs studies	not serious	not serious	not serious	serious[a]	none	20	21	-	SMD **0.04 lower** (0.65 lower to 0.57 higher)	⨁◯◯◯ Very low	CRITICAL
Family anxiety symptoms - Observational												
1	obs studies	not serious	not serious	not serious	very serious[b]	none	2/20 (10.0%)	4/21 (19.0%)	**RR 0.53** (0.11 to 2.56)	**90 fewer per 1,000** (from 170 fewer to 297 more)	⨁◯◯◯ Very low	CRITICAL
Family depression - Observational												
1	obs studies	not serious	not serious	not serious	very serious[b]	none	2/20 (10.0%)	1/21 (4.8%)	**RR 2.10** (0.21 to 21.39)	**52 more per 1,000** (from 38 fewer to 971 more)	⨁◯◯◯ Very low	CRITICAL
Family HADS score - Observational												
1	obs studies	not serious	not serious	not serious	serious[a]	none	20	21	-	MD **5.01 higher** (0.45 lower to 10.47 higher)	⨁◯◯◯ Very low	CRITICAL
Family decisional conflict - Observational												

1	obs studies	not serious	not serious	not serious	serious[g]	none	20	21	-	MD **1.89 lower** (15.44 lower to 11.66 higher)	⨁◯◯◯ Very low	CRITICAL
Conflicts between family and staff - Observational												
1	obs studies	not serious	not serious	not serious	very serious[b]	none	2/17 (11.8%)	3/10 (30.0%)	**RR 0.39** (0.08 to 1.96)	**183 fewer per 1,000** (from 276 fewer to 288 more)	⨁◯◯◯ Very low	IMPORTANT
Staff moral distress - Observational												
1	obs studies	not serious	not serious	not serious	serious[g]	none	90	122	-	MD **1.7 lower** (12.91 lower to 9.51 higher)	⨁◯◯◯ Very low	CRITICAL
Patient mortality - Observational												
11	obs studies	not serious	serious[a]	not serious	serious[c]	none	415/1189 (34.9%)	285/739 (38.6%)	**RR 1.11** (0.81 to 1.53)	**42 more per 1,000** (from 73 fewer to 204 more)	⨁◯◯◯ Very low	NOT IMPORTANT
ICU length of stay - Observational												
11	obs studies	not serious	serious[a]	not serious	serious[d]	none	1238	808	-	MD **0.81 lower** (2.87 lower to 1.26 higher)	⨁◯◯◯ Very low	CRITICAL
ICU length of stay (decedents) - Observational												
1	obs studies	not serious	not serious	not serious	serious[d]	none	56	66	-	MD **2.7 lower** (5.48 lower to 0.08 higher)	⨁◯◯◯ Very low	CRITICAL
Hospital length of stay - Observational												
4	obs studies	not serious	not serious	not serious	not serious	none	502	366	-	MD **3.17 lower** (5.1 lower to 1.23 lower)	⨁⨁◯◯ Low	CRITICAL
Hospital length of stay (decedents) - Observational												
1	obs studies	not serious	not serious	not serious	serious[e]	none	56	66	-	MD **5.9 lower** (9.29 lower to 2.51 lower)	⨁◯◯◯ Very low	CRITICAL

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Hospital costs - Observational

4	obs studies	not serious	not serious	not serious	serious[f]	none	345	413	-	SMD **0.29 lower** (0.54 lower to 0.04 lower)	⨁◯◯◯ Very low	CRITICAL

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

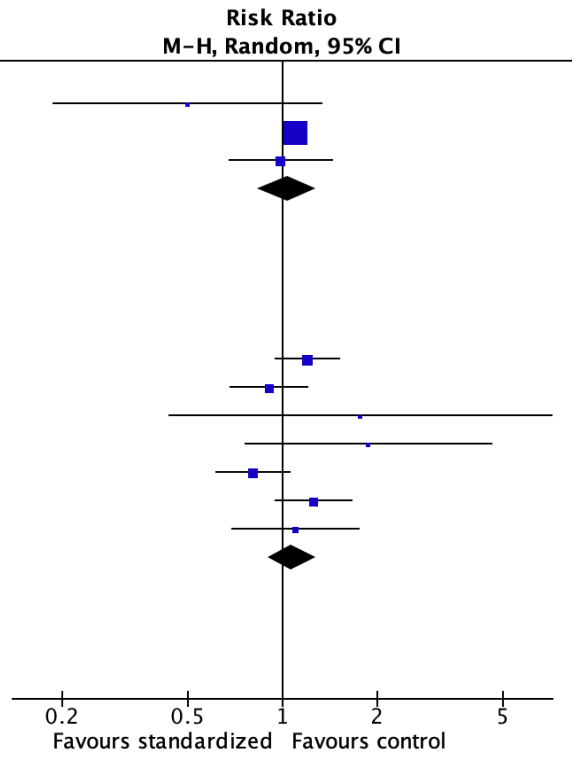
a. Serious statistical heterogeneity, with I2 values of ~80%.
b. Very small number of events in a single RCT.
c. Wide 95% confidence intervals which do not rule out a clinically meaningful impact upon mortality.
d. Wide 95% confidence intervals which do not rule out a clinically meaningful impact upon length of stay.
e. Data comes from a single trial resulting in serious imprecision.
f. Wide 95% confidence intervals which do not rule out a clinically meaningful difference in costs.
g. Wide 95% CI which does not rule out a clinically meaningful impact.

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Forest plots

1. Decisions to withdraw/withhold treatments

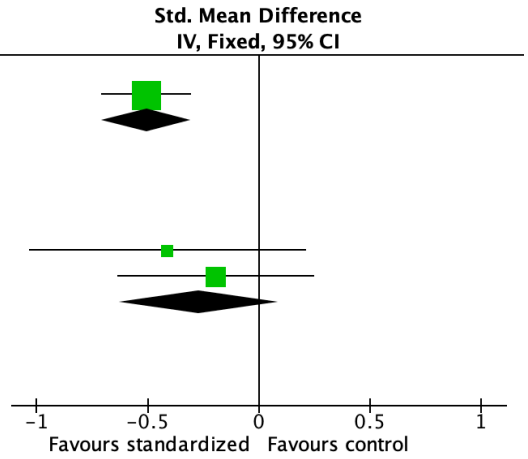
Study or Subgroup	Standardized Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
1.1.1 RCTs							
Muehlschegel 2020	3	8	6	8	4.5%	0.50 [0.19, 1.33]	2020
Kentish-Barnes 2022	403	484	296	391	72.7%	1.10 [1.03, 1.18]	2022
Kentish-Barnes 2024	43	196	42	189	22.9%	0.99 [0.68, 1.44]	2024
Subtotal (95% CI)		**688**		**588**	**100.0%**	**1.04 [0.84, 1.28]**	
Total events	449		344				
Heterogeneity: $Tau^2 = 0.02$; $Chi^2 = 2.91$, df = 2 (P = 0.23); $I^2 = 31\%$							
Test for overall effect: Z = 0.33 (P = 0.75)							
1.1.2 Observational							
Knaus 1990	127	705	114	760	23.8%	1.20 [0.95, 1.51]	1990
Daly 2010	107	346	46	135	19.7%	0.91 [0.68, 1.20]	2010
Cox 2012	6	17	2	10	1.5%	1.76 [0.44, 7.13]	2012
McCannon 2012	11	27	5	23	3.5%	1.87 [0.76, 4.60]	2012
Quenot 2012	93	823	95	678	20.9%	0.81 [0.62, 1.05]	2012
Sinha 2021	72	177	56	173	20.0%	1.26 [0.95, 1.66]	2021
Kennedy 2022	22	50	20	50	10.6%	1.10 [0.69, 1.75]	2022
Subtotal (95% CI)		**2145**		**1829**	**100.0%**	**1.07 [0.90, 1.27]**	
Total events	438		338				
Heterogeneity: $Tau^2 = 0.02$; $Chi^2 = 9.81$, df = 6 (P = 0.13); $I^2 = 39\%$							
Test for overall effect: Z = 0.74 (P = 0.46)							



Test for subgroup differences: $Chi^2 = 0.05$, df = 1 (P = 0.83), $I^2 = 0\%$

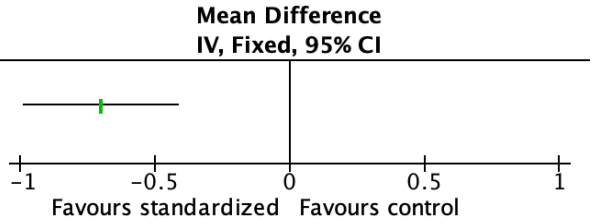
2. Family satisfaction with care, measured with FS-ICU or Client Satisfaction Questionnaire

Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Fixed, 95% CI
1.2.1 RCT								
Liu 2022	-73.6	8.67	171	-68.54	10.79	247	100.0%	-0.51 [-0.70, -0.31]
Subtotal (95% CI)			**171**			**247**	**100.0%**	**-0.51 [-0.70, -0.31]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 5.01 (P < 0.00001)								
1.2.2 Observational								
Chen 2021	-26.11	4.97	20	-23.65	6.59	21	33.5%	-0.41 [-1.03, 0.21]
Kodali 2015	-82.24	14.8	86	-79.26	16.3	26	66.5%	-0.20 [-0.63, 0.24]
Subtotal (95% CI)			**106**			**47**	**100.0%**	**-0.27 [-0.63, 0.09]**
Heterogeneity: Chi^2 = 0.31, df = 1 (P = 0.58); I^2 = 0%								
Test for overall effect: Z = 1.46 (P = 0.14)								



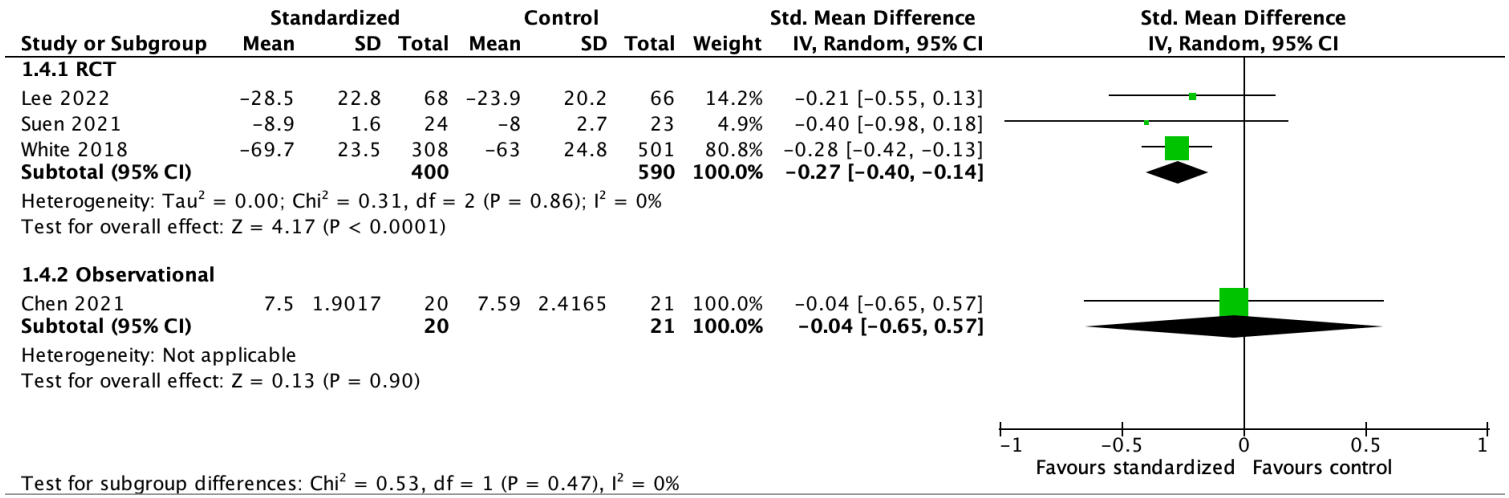
3. Quality of Death and Dying, measured with QODD

Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
1.3.1 RCTs							
Kentish-Barnes 2022	-8.5	1.9	379	-7.8	1.9	307	-0.70 [-0.99, -0.41]

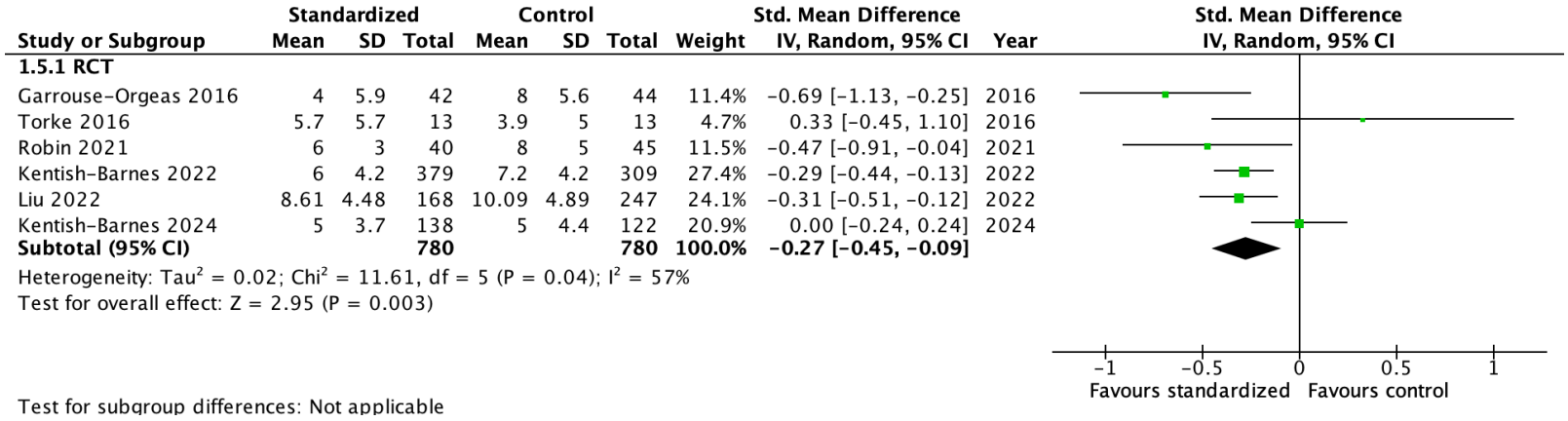


1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

4. Quality of Communication, measured with Quality of Communication questionnaire or Likert scale from 1-10 (higher is better communication)

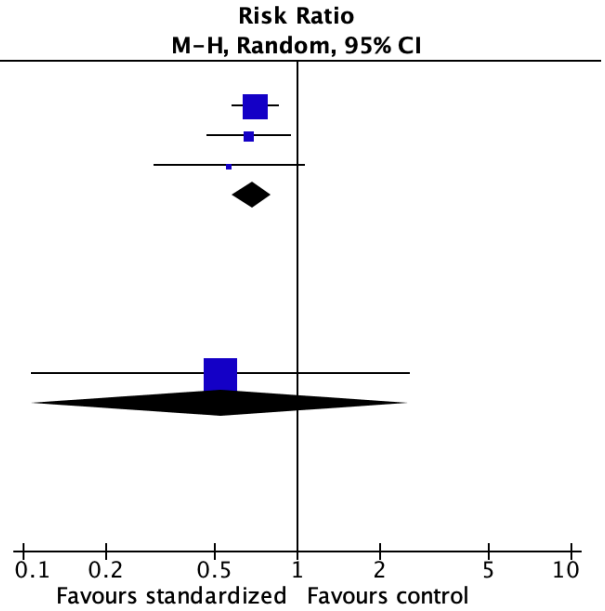


5. Family Anxiety symptoms, measured using HADS or GAD-7



6. Family anxiety symptoms, proportion of family members with scores above cutoff on HADS

Study or Subgroup	Standardized Events	Standardized Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI
1.6.1 RCT						
Kentish-Barnes 2022	121	379	140	309	71.7%	0.70 [0.58, 0.85]
Lautrette 2007	25	56	35	52	21.7%	0.66 [0.47, 0.94]
Robin 2021	10	40	20	45	6.6%	0.56 [0.30, 1.05]
Subtotal (95% CI)		**475**		**406**	**100.0%**	**0.69 [0.58, 0.81]**
Total events	156		195			
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.49$, df = 2 (P = 0.78); $I^2 = 0\%$						
Test for overall effect: Z = 4.58 (P < 0.00001)						
1.6.2 Observational						
Chen 2021	2	20	4	21	100.0%	0.53 [0.11, 2.56]
Subtotal (95% CI)		**20**		**21**	**100.0%**	**0.53 [0.11, 2.56]**
Total events	2		4			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.80 (P = 0.43)						



Test for subgroup differences: $Chi^2 = 0.11$, df = 1 (P = 0.74), $I^2 = 0\%$

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

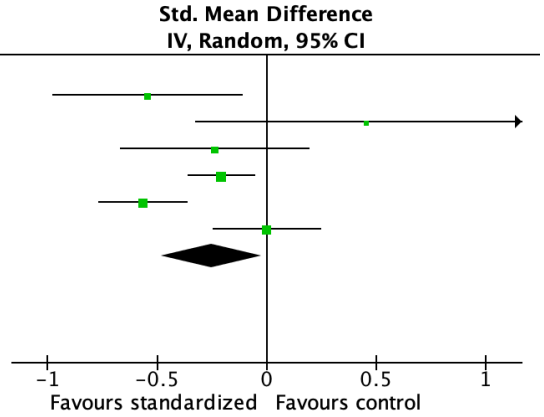
7. Family depression symptoms, measured with HADS or PHQ-9

Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
1.7.2 RCT									
Garrouse-Orgeas 2016	2	4.4	42	5.5	7.8	44	13.7%	-0.54 [-0.98, -0.11]	2016
Torke 2016	7.1	7.4	13	4.2	4.6	13	6.5%	0.46 [-0.32, 1.24]	2016
Robin 2021	7	3	40	8	5	45	13.8%	-0.24 [-0.66, 0.19]	2021
Kentish-Barnes 2022	4.1	4	379	5	4.7	309	23.7%	-0.21 [-0.36, -0.06]	2022
Liu 2022	7.67	4.88	168	10.44	4.9	247	22.0%	-0.57 [-0.76, -0.37]	2022
Kentish-Barnes 2024	3	3.7	138	3	4.3	122	20.4%	0.00 [-0.24, 0.24]	2024
Subtotal (95% CI)			**780**			**780**	**100.0%**	**-0.25 [-0.48, -0.02]**	

Heterogeneity: $Tau^2 = 0.05$; $Chi^2 = 18.67$, df = 5 (P = 0.002); $I^2 = 73\%$

Test for overall effect: Z = 2.15 (P = 0.03)

Test for subgroup differences: Not applicable



8. Family depression symptoms, proportion with scores above cutoff on HADS

Study or Subgroup	Standardized Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
1.8.1 RCT						
Kentish-Barnes 2022	74	379	82	309	51.4%	0.74 [0.56, 0.97]
Lautrette 2007	16	56	29	52	28.1%	0.51 [0.32, 0.83]
Robin 2021	10	40	25	45	20.5%	0.45 [0.25, 0.82]
Subtotal (95% CI)		**475**		**406**	**100.0%**	**0.60 [0.44, 0.82]**
Total events	100		136			
1.8.2 Observational						
Chen 2021	2	20	1	21	100.0%	2.10 [0.21, 21.39]
Subtotal (95% CI)		**20**		**21**	**100.0%**	**2.10 [0.21, 21.39]**
Total events	2		1			

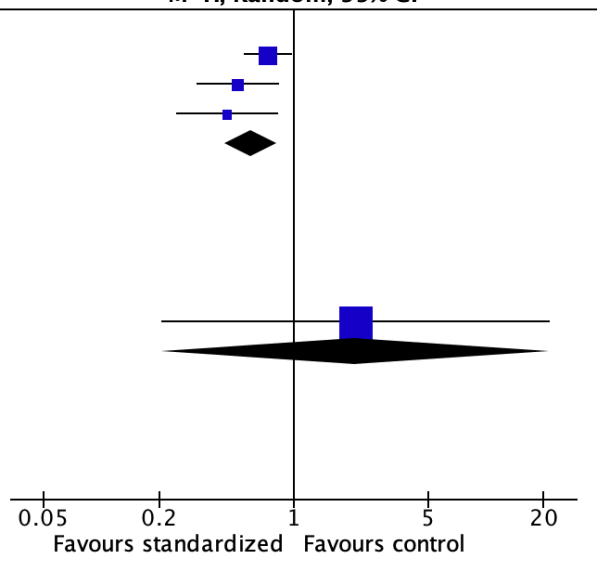
Heterogeneity: $Tau^2 = 0.03$; $Chi^2 = 3.15$, df = 2 (P = 0.21); $I^2 = 36\%$

Test for overall effect: Z = 3.23 (P = 0.001)

Heterogeneity: Not applicable

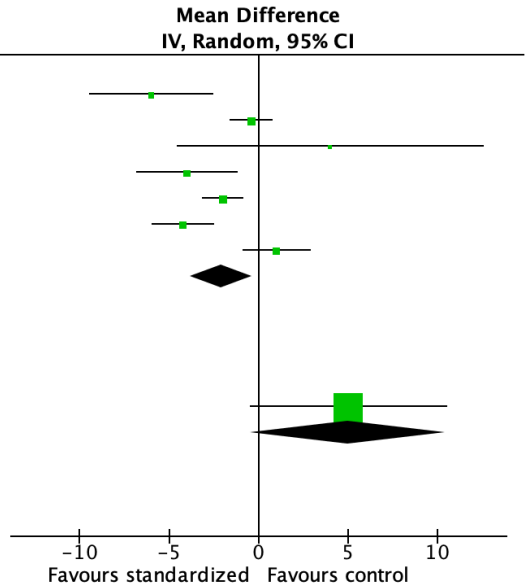
Test for overall effect: Z = 0.63 (P = 0.53)

Test for subgroup differences: $Chi^2 = 1.10$, df = 1 (P = 0.29), $I^2 = 8.9\%$



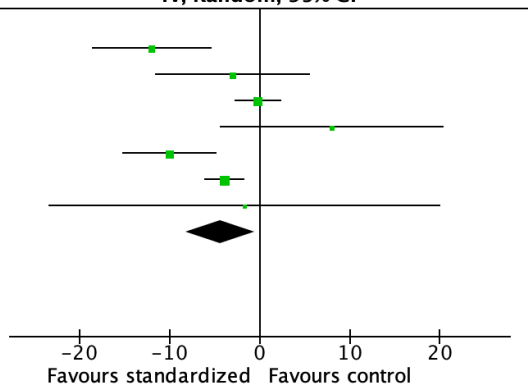
9. Family member symptoms of anxiety and depression, measured with HADS

Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.9.1 RCT									
Lautrette 2007	11	7.4	56	17	10.4	52	11.4%	-6.00 [-9.43, -2.57]	2007
White 2018	11.7	7.9	308	12.1	8.5	501	18.9%	-0.40 [-1.55, 0.75]	2018
Muehlschegel 2020	21	9.9	8	17	7.3	8	3.4%	4.00 [-4.52, 12.52]	2020
Robin 2021	13	5	40	17	8	45	13.4%	-4.00 [-6.80, -1.20]	2021
Kentish-Barnes 2022	10.2	7	379	12.2	7.8	307	19.0%	-2.00 [-3.12, -0.88]	2022
Liu 2022	16.29	8.63	168	20.52	9.02	247	17.2%	-4.23 [-5.95, -2.51]	2022
Kentish-Barnes 2024	9	7	138	8	8.1	122	16.7%	1.00 [-0.85, 2.85]	2024
Subtotal (95% CI)			**1097**			**1282**	**100.0%**	**-2.10 [-3.82, -0.37]**	
Heterogeneity: $Tau^2 = 3.73$; $Chi^2 = 31.93$, df = 6 ($P < 0.0001$); $I^2 = 81\%$									
Test for overall effect: Z = 2.38 (P = 0.02)									
1.9.2 Observational									
Chen 2021	19.07	9.5083	20	14.06	8.2602	21	100.0%	5.01 [-0.45, 10.47]	2021
Subtotal (95% CI)			**20**			**21**	**100.0%**	**5.01 [-0.45, 10.47]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 1.80 (P = 0.07)									
Test for subgroup differences: $Chi^2 = 5.91$, df = 1 (P = 0.02), $I^2 = 83.1\%$									



10. Family member PTSD symptoms, measured with Impact of Events Scale (IES)

Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.10.2 RCT									
Lautrette 2007	27	17	56	39	17.8	52	14.6%	-12.00 [-18.58, -5.42]	2007
Garrouse-Orgeas 2016	21	15.6	42	24	24	44	11.2%	-3.00 [-11.52, 5.52]	2016
White 2018	20.5	18	308	20.7	17.7	501	23.1%	-0.20 [-2.74, 2.34]	2018
Muehlschegel 2020	31	14	8	23	11	8	6.9%	8.00 [-4.34, 20.34]	2020
Robin 2021	28	10	40	38	14	45	17.5%	-10.00 [-15.13, -4.87]	2021
Kentish-Barnes 2022	13.6	12.4	379	17.5	15.6	309	23.8%	-3.90 [-6.04, -1.76]	2022
Kentish-Barnes 2024	3.5	4.4	138	5.2	122	122	2.8%	-1.70 [-23.36, 19.96]	2024
Subtotal (95% CI)			**971**			**1081**	**100.0%**	**-4.31 [-8.11, -0.50]**	
Heterogeneity: $Tau^2 = 14.59$; $Chi^2 = 22.55$, df = 6 ($P = 0.0010$); $I^2 = 73\%$									
Test for overall effect: Z = 2.22 (P = 0.03)									
Test for subgroup differences: Not applicable									



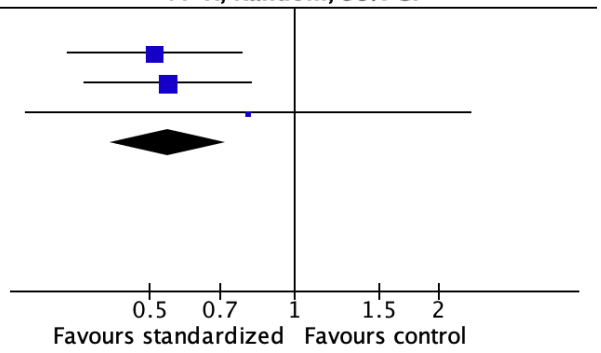
1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

11. Family members PTSD symptoms, proportion with IES scores above cutoff

Study or Subgroup	Standardized Events	Standardized Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI
1.11.1 RCT						
Kentish-Barnes 2022	32	379	51	309	44.7%	0.51 [0.34, 0.78]
Robin 2021	18	45	33	45	48.5%	0.55 [0.37, 0.81]
Torke 2016	4	13	5	13	6.8%	0.80 [0.28, 2.32]
Subtotal (95% CI)		**437**		**367**	**100.0%**	**0.54 [0.41, 0.72]**
Total events	54		89			

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.59$, df = 2 (P = 0.74); $I^2 = 0\%$

Test for overall effect: Z = 4.29 (P < 0.0001)



Test for subgroup differences: Not applicable

12. Family decisional conflict, measured using the Decisional Conflict Scale (MCID ~4 in some populations)

Study or Subgroup	Standardized Mean	Standardized SD	Standardized Total	Control Mean	Control SD	Control Total	Weight	Mean Difference IV, Fixed, 95% CI
1.12.1 RCT								
Muehlschegel 2020	0	13.3	8	0	7.4	8	11.5%	0.00 [-10.55, 10.55]
Torke 2016	29.5	6	13	34.4	3.6	13	88.5%	-4.90 [-8.70, -1.10]
Subtotal (95% CI)			**21**			**21**	**100.0%**	**-4.34 [-7.91, -0.76]**

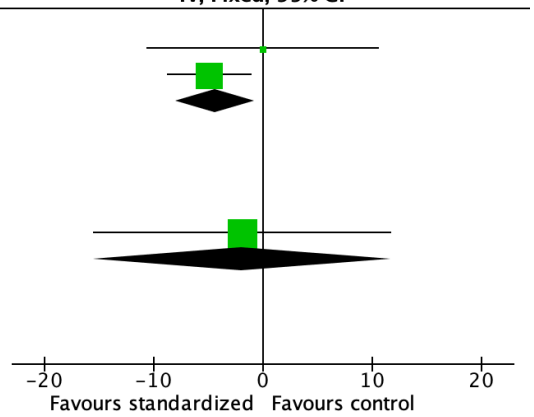
Heterogeneity: $Chi^2 = 0.73$, df = 1 (P = 0.39); $I^2 = 0\%$

Test for overall effect: Z = 2.38 (P = 0.02)

1.12.2 Observational								
Chen 2021	18.3919	19.4225	20	20.28	24.6488	21	100.0%	-1.89 [-15.44, 11.66]
Subtotal (95% CI)			**20**			**21**	**100.0%**	**-1.89 [-15.44, 11.66]**

Heterogeneity: Not applicable

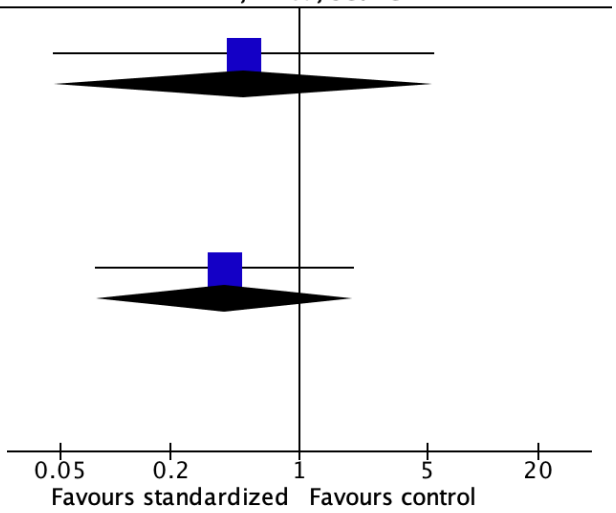
Test for overall effect: Z = 0.27 (P = 0.78)



Test for subgroup differences: $Chi^2 = 0.12$, df = 1 (P = 0.73), $I^2 = 0\%$

13. Conflicts between family and staff

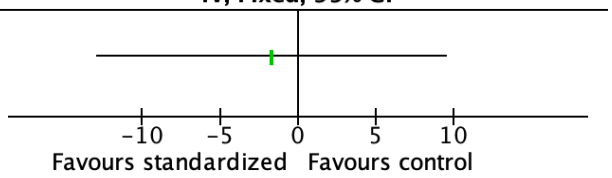
Study or Subgroup	Standardized Events	Standardized Total	Control Events	Control Total	Weight	Risk Ratio M-H, Fixed, 95% CI
1.13.1 RCT						
Lautrette 2007	1	63	2	63	100.0%	0.50 [0.05, 5.38]
Subtotal (95% CI)		**63**		**63**	**100.0%**	**0.50 [0.05, 5.38]**
Total events	1		2			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.57 (P = 0.57)						
1.13.2 Observational						
Cox 2012	2	17	3	10	100.0%	0.39 [0.08, 1.96]
Subtotal (95% CI)		**17**		**10**	**100.0%**	**0.39 [0.08, 1.96]**
Total events	2		3			
Heterogeneity: Not applicable						
Test for overall effect: Z = 1.14 (P = 0.25)						



Test for subgroup differences: $Chi^2 = 0.03$, df = 1 (P = 0.87), $I^2 = 0\%$

14. Staff moral distress, measured with the Moral Distress Scale

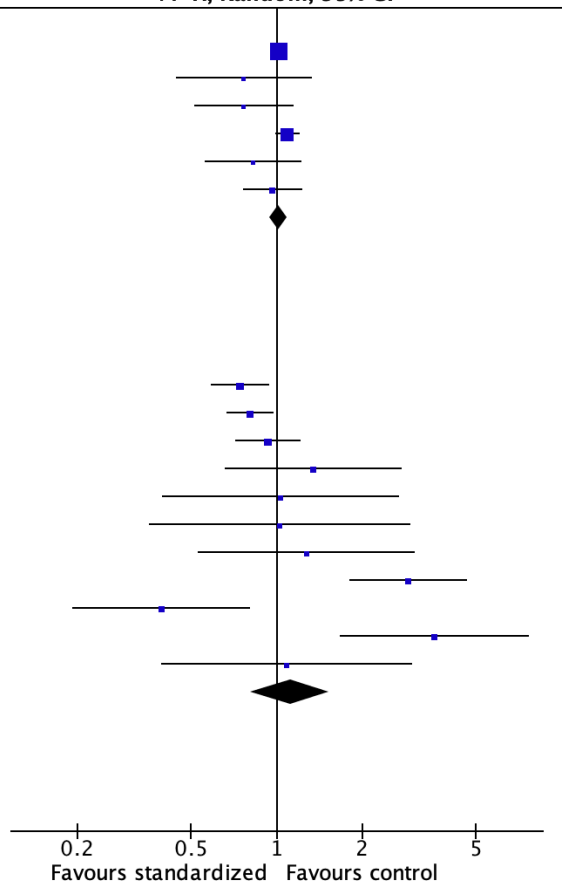
Study or Subgroup	Standardized Mean	Standardized SD	Standardized Total	Control Mean	Control SD	Control Total	Mean Difference IV, Fixed, 95% CI
1.14.1 Observational							
Zimmerman 2021	71.7	42.5	90	73.4	39.3	122	-1.70 [-12.91, 9.51]



1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

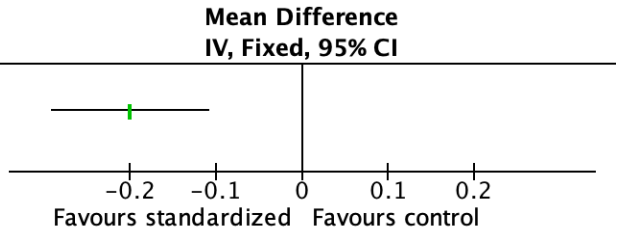
15. Patient mortality at longest follow-up

Study or Subgroup	Standardized Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
1.15.1 RCT							
Lautrette 2007	62	63	61	63	50.2%	1.02 [0.96, 1.07]	2007
Garrouse-Orgeas 2016	15	49	20	50	1.7%	0.77 [0.45, 1.31]	2016
Curtis 2016	27	82	37	86	3.1%	0.77 [0.52, 1.13]	2016
White 2018	330	547	484	873	33.3%	1.09 [0.99, 1.19]	2018
Alghanim 2021	45	601	52	573	3.3%	0.83 [0.56, 1.21]	2021
Kentish-Barnes 2024	82	196	82	189	8.4%	0.96 [0.76, 1.22]	2024
Subtotal (95% CI)		**1538**		**1834**	**100.0%**	**1.01 [0.94, 1.09]**	
Total events	561		736				
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 6.67$, df = 5 (P = 0.25); $I^2 = 25\%$							
Test for overall effect: Z = 0.38 (P = 0.70)							
1.15.2 Observational							
Lilly 2000	134	396	61	134	13.3%	0.74 [0.59, 0.94]	2000
Ahrens 2003	32	43	100	108	13.7%	0.80 [0.67, 0.97]	2003
Daly 2010	124	346	52	135	13.1%	0.93 [0.72, 1.20]	2010
Hatler 2012	15	98	12	105	8.3%	1.34 [0.66, 2.72]	2012
Cox 2012	7	17	4	10	6.2%	1.03 [0.40, 2.66]	2012
McCannon 2012	6	27	5	23	5.5%	1.02 [0.36, 2.92]	2012
Kodali 2015	21	86	5	26	6.8%	1.27 [0.53, 3.03]	2015
Piscitello 2019	39	60	16	71	10.9%	2.88 [1.80, 4.61]	2019
Chen 2021	6	20	16	21	8.3%	0.39 [0.19, 0.80]	2021
Naef 2021	25	58	7	58	7.9%	3.57 [1.68, 7.60]	2021
Zimmerman 2021	6	38	7	48	5.8%	1.08 [0.40, 2.95]	2021
Subtotal (95% CI)		**1189**		**739**	**100.0%**	**1.11 [0.81, 1.53]**	
Total events	415		285				
Heterogeneity: $Tau^2 = 0.18$; $Chi^2 = 50.77$, df = 10 (P < 0.00001); $I^2 = 80\%$							
Test for overall effect: Z = 0.67 (P = 0.50)							
Test for subgroup differences: $Chi^2 = 0.32$, df = 1 (P = 0.57), $I^2 = 0\%$							



16. Patient-centredness of care, measured using PPCCC

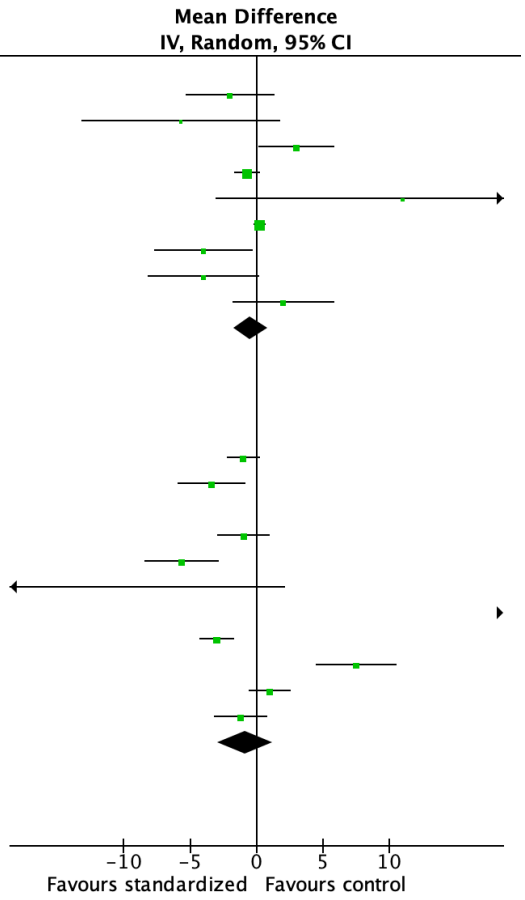
Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
1.16.1 RCT							
White 2018	1.6	0.6	308	1.8	0.7	501	-0.20 [-0.29, -0.11]



17. ICU length of stay

Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.17.1 RCT									
Lautrette 2007	7	7.4	63	9	11.1	63	9.6%	-2.00 [-5.29, 1.29]	2007
Curtis 2016	17.8	12.7	69	23.5	28.2	66	2.6%	-5.70 [-13.13, 1.73]	2016
Garrouse-Orgeas 2016	11	7.4	49	8	6.7	50	11.9%	3.00 [0.22, 5.78]	2016
White 2018	8.1	8.6	547	8.8	8.8	873	24.5%	-0.70 [-1.63, 0.23]	2018
Muehlschegel 2020	23	19.2	8	12	6.3	8	0.8%	11.00 [-3.00, 25.00]	2020
Alghanim 2021	3.87	3.86	601	3.65	3.43	573	27.4%	0.22 [-0.20, 0.64]	2021
Robin 2021	6	8.1	45	10	9.6	45	8.3%	-4.00 [-7.67, -0.33]	2021
Liu 2022	13.51	13.22	223	17.51	34.34	325	7.0%	-4.00 [-8.12, 0.12]	2022
Kentish-Barnes 2024	14	18.5	196	12	19.3	189	8.0%	2.00 [-1.78, 5.78]	2024
Subtotal (95% CI)			**1801**			**2192**	**100.0%**	**-0.46 [-1.72, 0.79]**	
Heterogeneity: $Tau^2 = 1.46$; $Chi^2 = 23.01$, df = 8 (P = 0.003); $I^2 = 65\%$									
Test for overall effect: Z = 0.72 (P = 0.47)									
1.17.2 Observational									
Lilly 2000	3	2.96	396	4	6.7	134	13.5%	-1.00 [-2.17, 0.17]	2000
Ahrens 2003	6.1	5.41	43	9.5	10.16	108	11.6%	-3.40 [-5.91, -0.89]	2003
Shelton 2010	11.43	0	0	11.8	0	0		Not estimable	2010
Daly 2010	13.44	9.18	346	14.41	9.85	135	12.5%	-0.97 [-2.89, 0.95]	2010
Hatler 2012	15.45	8.8	98	21.1	10.9	105	11.3%	-5.65 [-8.37, -2.93]	2012
Cox 2012	28	25	17	48	30	10	0.8%	-20.00 [-42.07, 2.07]	2012
Kodali 2015	97.5	119.3	86	47	34.8	26	0.5%	50.50 [21.96, 79.04]	2015
Piscitello 2019	4	2.96	60	7	4.4	71	13.4%	-3.00 [-4.27, -1.73]	2019
Naef 2021	11	11.1	58	3.5	3.51	58	10.8%	7.50 [4.50, 10.50]	2021
Zimmerman 2021	4.9	4	38	3.9	3	48	13.1%	1.00 [-0.53, 2.53]	2021
Chang 2021	7.5	4.7	96	8.7	9.3	113	12.5%	-1.20 [-3.16, 0.76]	2021
Subtotal (95% CI)			**1238**			**808**	**100.0%**	**-0.81 [-2.87, 1.26]**	
Heterogeneity: $Tau^2 = 7.88$; $Chi^2 = 76.90$, df = 9 (P < 0.00001); $I^2 = 88\%$									
Test for overall effect: Z = 0.77 (P = 0.44)									

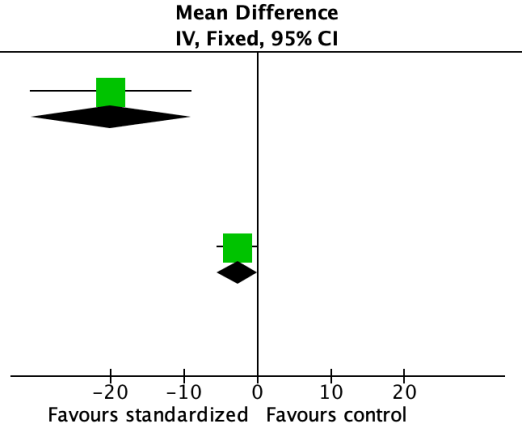
Test for subgroup differences: $Chi^2 = 0.08$, df = 1 (P = 0.78), $I^2 = 0\%$



18. ICU length of stay, decedents

Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
1.18.1 RCT								
Curtis 2016	10	6.9	69	30	44.8	66	100.0%	-20.00 [-30.93, -9.07]
Subtotal (95% CI)			**69**			**66**	**100.0%**	**-20.00 [-30.93, -9.07]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 3.59 (P = 0.0003)								
1.18.2 Observational								
Chang 2021	7.4	5.6	56	10.1	9.8	66	100.0%	-2.70 [-5.48, 0.08]
Subtotal (95% CI)			**56**			**66**	**100.0%**	**-2.70 [-5.48, 0.08]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 1.90 (P = 0.06)								

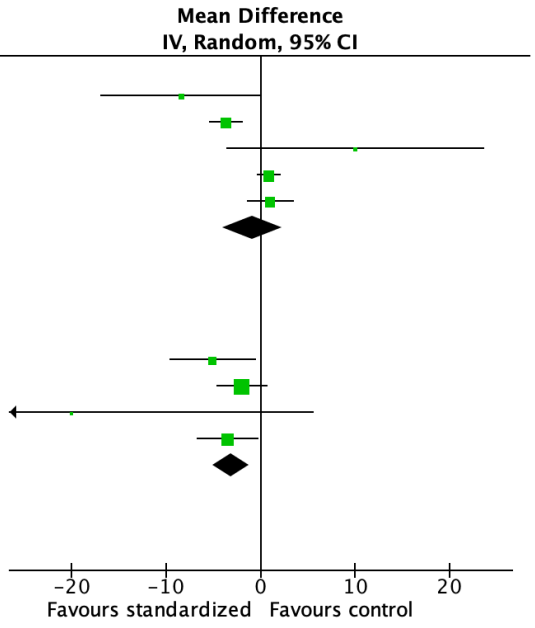
Test for subgroup differences: $Chi^2 = 9.04$, df = 1 (P = 0.003), $I^2 = 88.9\%$



19. Hospital length of stay

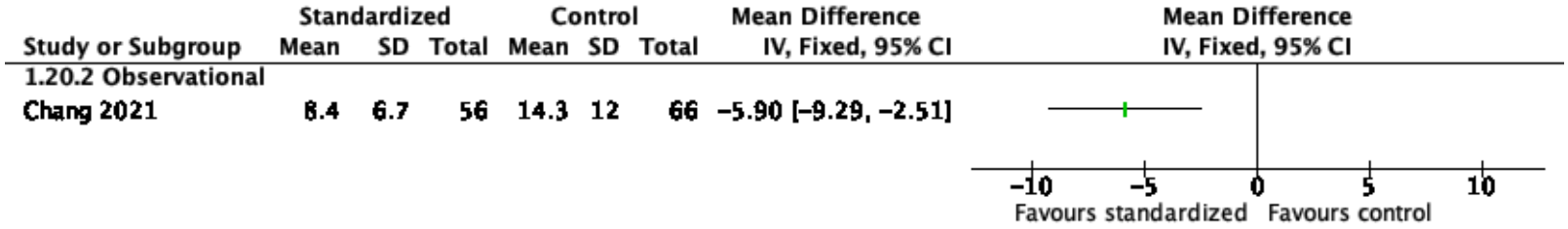
Study or Subgroup	Standardized Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.19.1 RCT									
Curtis 2016	25.4	16.9	69	33.8	30.9	66	9.4%	-8.40 [-16.85, 0.05]	2016
White 2018	11.8	13.1	547	15.5	19.2	873	29.0%	-3.70 [-5.38, -2.02]	2018
Muehlschegel 2020	23	19.2	8	13	3.7	8	4.4%	10.00 [-3.55, 23.55]	2020
Alghanim 2021	8.63	12.04	601	7.78	7.51	573	30.4%	0.85 [-0.29, 1.99]	2021
Lee 2022	9	8.1	75	8	6.7	75	26.7%	1.00 [-1.38, 3.38]	2022
Subtotal (95% CI)			**1300**			**1595**	**100.0%**	**-0.89 [-3.97, 2.19]**	
Heterogeneity: $Tau^2 = 7.77$; $Chi^2 = 26.43$, df = 4 (P < 0.0001); $I^2 = 85\%$									
Test for overall effect: Z = 0.57 (P = 0.57)									
1.19.2 Observational									
Ahrens 2003	11.3	9.88	43	16.4	17.91	108	17.7%	-5.10 [-9.59, -0.61]	2003
Daly 2010	22.84	13.36	346	24.86	13.04	135	48.1%	-2.02 [-4.63, 0.59]	2010
Cox 2012	37	32	17	57	33	10	0.6%	-20.00 [-45.49, 5.49]	2012
Chang 2021	10.7	8.4	96	14.2	14.7	113	33.6%	-3.50 [-6.69, -0.31]	2021
Subtotal (95% CI)			**502**			**366**	**100.0%**	**-3.17 [-5.10, -1.23]**	
Heterogeneity: $Tau^2 = 0.24$; $Chi^2 = 3.17$, df = 3 (P = 0.37); $I^2 = 5\%$									
Test for overall effect: Z = 3.21 (P = 0.001)									

Test for subgroup differences: $Chi^2 = 1.50$, df = 1 (P = 0.22), $I^2 = 33.5\%$

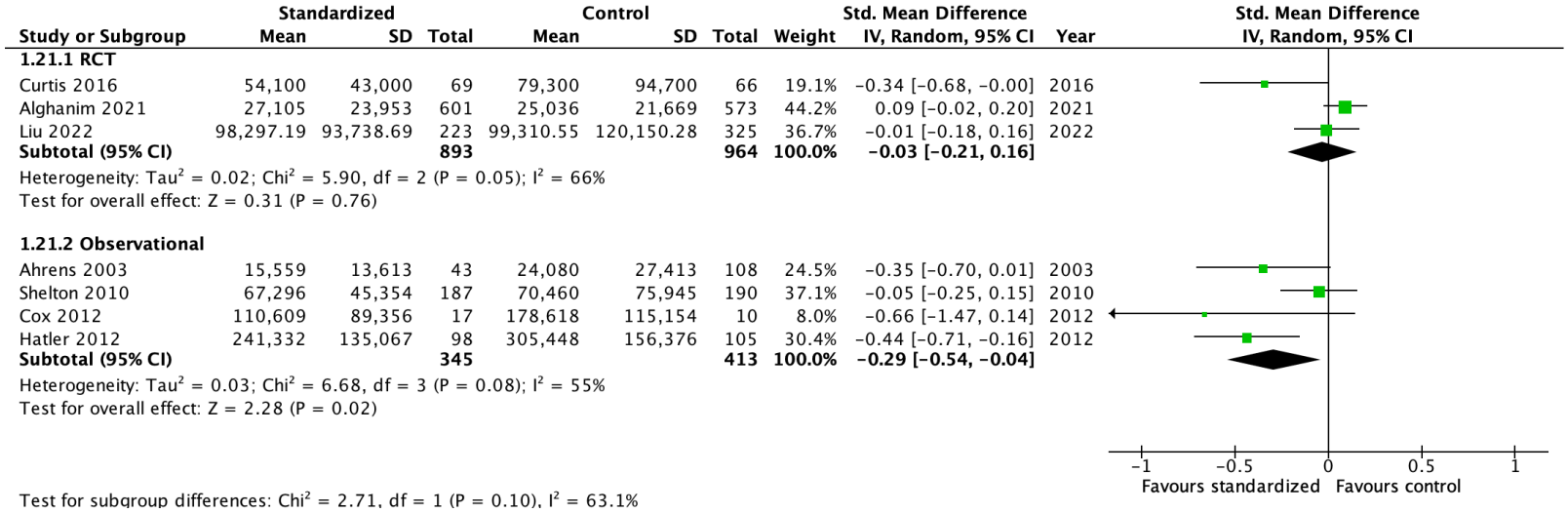


1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

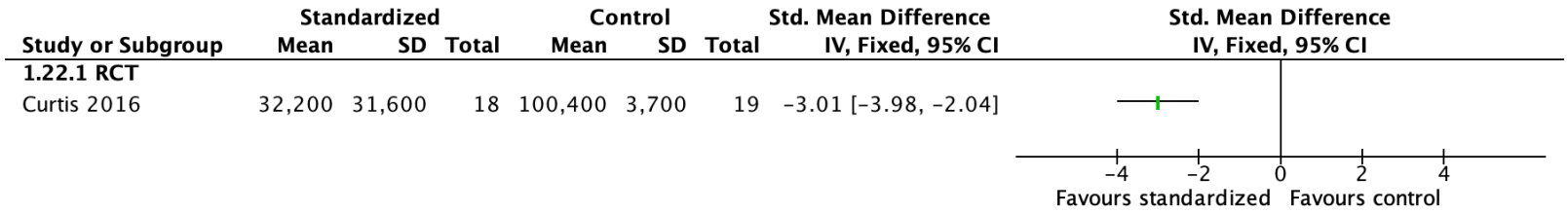
20. Hospital length of stay, decedents



21. Hospital costs



22. Hospital costs, decedents



1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Narrative Evidence

Theme/topic	Findings	Sources
Augmented communication technologies	Use of augmented communication tools can help some patients better participate in care decisions	Koszalinski 2016
Virtual meetings	Use of audiovisual family meetings may be acceptable to families	de Havenon 2015
Bedside tools can increase number of family conferences	An “Ethics Early Action Protocol” bedside tool identified patients at being a low, medium, or high risk of ethical conflict; each risk level had an associated action plan; patients admitted to ICU in the 6 month period after the intervention had a greater number of documented family conferences; social work consultations; and chaplain visits without a difference palliative care consults or code status discussions.	Pavlish 2002
Structured Family Meeting Note Template	A structured family meeting note template may result in increased number of key discussion elements documented	Kennedy 2022
Planning tools for families	The Jumpstart Guide aims to identify preferences and facilitators/barriers for goals of care communication and end-of-life treatment preferences increased the number of documented goals of care discussions and was acceptable to patients, families, and staff in the acute care setting.	Lee 2022
Multidisciplinary meetings	Multidisciplinary meetings for serious decisions such as tracheostomy may improve family understanding of information related to making a decision, including palliative care options	Greenberg 2020
Video decision aids	Video decision aids may be both acceptable to patients and families and result in better knowledge of end of life treatment options	McCannon 2012

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Evidence-to-Decision Framework

QUESTION

Should interventions to enhance shared decision-making vs. usual care be used for adult ICU patients for whom there is a need for EOL decisions?	
POPULATION:	adult ICU patients for whom there is a need for EOL decisions
INTERVENTION:	interventions to enhance shared decision-making
COMPARISON:	usual care
MAIN OUTCOMES:	Decisions to withold/withdraw treatments - RCTs; Family satisfaction with care - RCT; Quality of Death and Dying - RCTs; Quality of communication - RC Family anxiety symptoms - RCT; Family anxiety symptoms - RCT; Family depression symptoms - RCT; Family depression - RCT; Family HADS score - RCT; Family PTSD symptoms - RCT; Family PTSD symptoms - RCT; Family decisional conflict - RCT; Conflicts between family and staff - RCT; Patient mortality RCT; ICU length of stay - RCT; ICU length of stay (decedents) - RCT; Hospital length of stay - RCT; Hospital costs - RCT; Hospital costs (decedents) - RCT; Decisions to withold/withdraw treatments - Observational; Family satisfaction with care - Observational; Quality of communication - Observational; Family anxiety symptoms - Observational; Family depression - Observational; Family HADS score - Observational; Family decisional conflict - Observational; Conflicts between family and staff - Observational; Staff moral distress - Observational; Patient mortality - Observational; ICU length of - Observational; ICU length of stay (decedents) - Observational; Hospital length of stay - Observational; Hospital length of stay (decedents) - Observatio Hospital costs - Observational;

ASSESSMENT

Problem

Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		There is variability in clinician practices for communicating prognosis and integrating patient and family values and preferences into clinical decision-making. Many societies (eg. IOM) suggest clinicians should use decision aids to assist with shared decision-making process. Interventions to enhance share-decision making may improve integration of patient and family values and preferences into decision-making process, resulting in better concordance between preferences and care delivered.

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Desirable Effects

How substantial are the desirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ○ Small ● Moderate ○ Large ○ Varies ○ Don't know	· Moderate improvement in family satisfaction with care · Small improvement quality of communication · Small anxiety, measured with HADS or GAD-7 · Small depression, measured with HADS or PHQ-9 · Small reduction in PTSD symptoms measured with IES · Small reduction in in decisional conflict · Small improvement in patient-centredness of care	The differences in HADS and IES are similar to the MICD for these scales in survivors of acute respiratory failure. PMID: 27638969 There is no published MCID for FS-ICU however a 5% difference is likely small to moderate. Use of these interventions may result in more consistent decision-making for patients and families. in the ICU. The reduction in family members with scores above the cutoff values for serious mental health symptoms (14% anxiety; 13% depression; 11% PTSD) are moderate.

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Trivial ○ Small ○ Moderate ○ Large ○ Varies ○ Don't know		No direct undesirable effects from the use of these interventions were identified in the systematic review.

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ○ Low ● Moderate ○ High ○ No included studies	The uncertainty of evidence is related to heterogeneity of the populations and interventions studied; the effects themselves appear to be fairly consistent between studies, resulting in moderate certainty evidence.	Certainty of evidence is moderate or for critical outcomes other than equity; use of institutional policies/protocols to limit treatment; unilateral decisions to withhold/ withdraw treatments.

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ● Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		By their nature, these interventions aim to explore patient and family values and preferences and to educate about treatment options. They will uncover variations in values and preferences. There may be instances (eg. young patients or patients with a very sudden worsening of prognosis) where the use of shared decision-making interventions like this may be distressing, even if such decision-making is clinically appropriate.

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ● Probably favors the intervention ○ Favors the intervention ○ Varies ○ Don't know	Overall the evidence does not demonstrate a clear, consistent impact upon patient outcomes (eg. treatment decisions, length of stay) however other aspects of patient and family experience (communication, patient-centeredness) and family mental symptoms, likely favour these shared decision-making interventions.	The main limitation in the balance of effects relates to the heterogeneity of interventions--these are likely helpful as studied but there may be implementation challenges resulting in uncertainty of "real world" effects.

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ● Varies ○ Don't know	Resources required will vary depending on the intervention which implemented and the context. For some of the interventions (eg. hiring a nurse communication facilitator) resources can be large while for others (structured meeting plan, booklet/ decision-aid) the costs are likely lower.	

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ● Low ○ Moderate ○ High ○ No included studies		

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ● Varies ○ No included studies	One cost-effectiveness study in one trial of communication facilitators (Curtis 2016) found them to be cost-effective. This data would not be applicable to the other shared decision-making interventions.	

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Reduced ○ Probably reduced ○ Probably no impact ● Probably increased ○ Increased ○ Varies ○ Don't know		Standardizing communication around end of life decision-making may improve equity as clinicians may have implicit bias and not explore values and preferences for all patients. These interventions may thus increase equity of access to end-of-life and other treatment option. On the other hand, patients and families who do not speak english, or for whom english is not their first language may equally benefit from shared decision-making interventions which are not linguistically or culturally tailored to their needs. Overall, the panel judged that equity is probably increased.

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

Acceptability

Is the intervention acceptable to key stakeholders?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		Most of the interventions were found to be acceptable to families, and if developed in conjunction with stakeholders this may further improve acceptability. Possible heterogeneity of acceptability for clinicians, depending on the impact upon their usual practice-- some may not like using structured approaches to care. Institutional acceptability unclear, but if found to be effective at improving experience or resource use, institutions would likely find them acceptable.

Feasibility

Is the intervention feasible to implement?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ○ Yes ● Varies ○ Don't know		The interventions appear to be feasible to implement, as demonstrated by the included studies, but the included studies considered implementation challenges and practice change carefully within the context of a trial. It may harder to implement these outside of the context of a study, and unclear feasibility to sustain. This will vary from intervention to intervention and environment to environment and patient populations.

SUMMARY OF JUDGEMENTS

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	**Moderate**	Large		Varies	Don't know
UNDESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	Low	**Moderate**	High			No included studies
VALUES	Important uncertainty or variability	**Possibly important uncertainty or variability**	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	**Probably favors the intervention**	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	**Varies**	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	Very low	**Low**	Moderate	High			No included studies
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	**Varies**	No included studies
EQUITY	Reduced	Probably reduced	Probably no impact	**Probably increased**	Increased	Varies	Don't know
ACCEPTABILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	Probably yes	Yes		**Varies**	Don't know

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

CONCLUSIONS

Recommendation
We suggest using structured tools to facilitate shared decision making when making end-of-life treatment decisions in ICU. (conditional recommendation, moderate certainty of evidence) *Remark*: *While there is no single ideal tool to use, those studied in the ICU setting include communication facilitators; structured meeting plans; and paper/web-based decision aids.*
Justification
Although the interventions included in the systematic review are heterogenous (communciation facilitators; structured meeting plans; and paper/web based decision aids) they appear to have a positive impact upon family mental health symptoms, quality of communication, and satisfaction with care. While they do not consistently have an impact upon actual treatment decisions or length of stay, improving patient and family experience of care at end of life is important. The panel had less certainty about how these interventions would translate to different settings--implementation would require local adaptation of decision aids/meeting plans and staff training. Because of these challenges, the panel made a conditional recommendation for interventions to enhance shared decision-making at end of life.

Implementation considerations
The interventions studied included ICU-specific communication facilitators (most studies this person was nurse, in one study a chaplain); structured meeting plans, including meetings at specific time-points in ICU stay; decision aids -- Robin 2021, Lautrette 2007, Muehlschlegel, 2022, Suen 2020) These can be adapted to local ICUs as needed.

1.1 Interventions to enhance shared decision-making for treatment decisions at end-of-life

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1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Evidence Summary

Question 1.2: Should we recommend specific interventions to ensure procedural due process for substitute decision-making on behalf of decisionally incapable patients?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	interventions to identify and education substitute decision-makers	usual care	Relative (95% CI)	Absolute (95% CI)		
Quality of shared decision-making, 'lower' score is better												
1	randomised trials	not serious	not serious	not serious	very serious [a,b]	none	24	23	-	MD **0.7 lower** (1.85 lower to 0.45 higher)	⨁⨁◯◯ Low	CRITICAL
Quality of communication,, 'lower' score is better												
1	randomised trials	not serious	not serious	not serious	very serious [a,b]	none	24	23	-	MD **0.9 lower** (2.18 lower to 0.38 higher)	⨁⨁◯◯ Low	IMPORTANT
Impact of Events Score												
1	randomised trials	not serious	not serious	not serious	very serious [b]	none	40	45	-	MD **10 lower** (15.13 lower to 4.87 lower)	⨁⨁◯◯ Low	IMPORTANT
HADS score												
1	randomised trials	not serious	not serious	not serious	very serious [b]	none	40	45	-	MD **4 lower** (6.8 lower to 1.2 lower)	⨁⨁◯◯ Low	IMPORTANT
ICU length of stay												
1	randomised trials	not serious	not serious	not serious	very serious [b]	none	45	45	-	MD **4 lower** (7.67 lower to 0.33 lower)	⨁⨁◯◯ Low	CRITICAL

CI: confidence interval; **MD:** mean difference

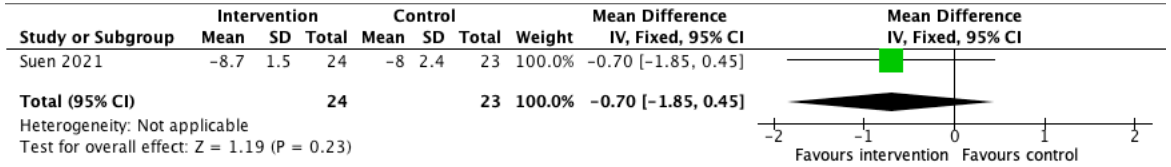
Explanations

a. Wide 95% confidence intervals which do not exclude a clinically meaningful benefit or harm.
b. Evidence comes from a single small RCT, optimal information size not met, resulting in very serious imprecision.

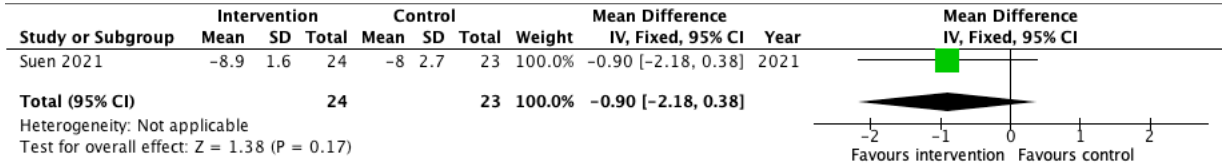
1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Forest plots

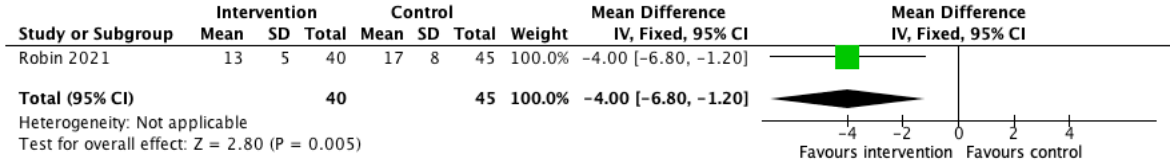
1. Quality of shared decision-making, rated by families (single item of Quality of Communication questionnaire, range 1-10, higher is better)



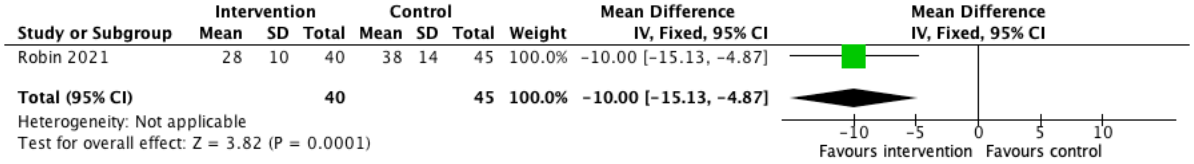
2. Quality of communication, rated by families (measured with Quality of Communication questionnaire, range 1-10, higher is better)



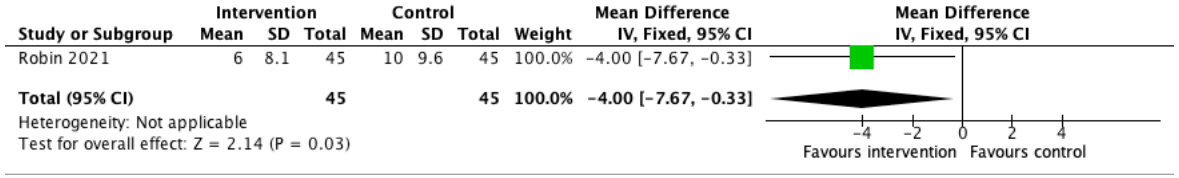
3. Impact of Events Scale (IES), family members (range 0-75, higher is worse)



4. Hospital Anxiety and Depression Score (HADS), family members (range 0-42, higher is worse)



5. ICU length of stay, days



1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Narrative Evidence

Theme/topic	Findings	Sources
Building trust with SDMs	• Explaining the role of the SDM can build trust between the clinical team and the decision-maker	Lincoln 2023
Decision-making styles	• Identifying and using the preferred decision-making styles of substitute decision-makers may reduce their mental health symptoms compared to mismatched decision-making style	Feng 2021
Outcomes for unrepresented patients	• Unrepresented patients may have delayed decisions to withhold or withdraw life-sustaining treatments compared to those with identified substitute decision-makers, especially if no advance directive exists	Davis 2018, Cohen 2019, Stachulski 2021, Walsh 2022

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Evidence-to-Decision Framework

QUESTION

Should interventions to identify and education substitute decision-makers vs. usual care be used for decisionally-incapable patients for whom there is a need for end of life decisions?	
POPULATION:	decisionally-incapable patients for whom there is a need for end of life decisions
INTERVENTION:	interventions to identify and education substitute decision-makers
COMPARISON:	usual care
MAIN OUTCOMES:	Quality of shared decision-making; Quality of communication; Impact of Events Score; HADS score; ICU length of stay;

ASSESSMENT

Problem

Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		Many patients in the ICU are decisionally-incapable and rely upon substitute decision-makers to make decision about treatments, often including decisions regarding end of life care.

Desirable Effects

How substantial are the desirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ○ Small ● Moderate ○ Large ○ Varies ○ Don't know	Surrogate decision maker education interventions may improve quality of shared decision-making, communication, and family mental health symptoms (PTSD symptoms, anxiety and depression symptoms). Narrative evidence suggests they may also build trust between the surrogate and the clinical team.	Indirect evidence that not having an identified substitute decision-maker results in prolonged length of stay, costs; may result in surrogates being upset if they are not identified and contacted in a timely manner, or not aware of their responsibilites.

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Trivial ○ Small ○ Moderate ○ Large ○ Varies ○ Don't know		Standardized approaches to communication may result in frustration on the part of patients and families who are repeatedly approached.

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ● Low ○ Moderate ○ High ○ No included studies	Low for clinical outcomes on the basis of imprecision as the studies were very small.	

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ● Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability	Some families may value decision-making differently and have different styles of decision-making (Feng 2021), and this mismatch may impract family mental health symptoms and satisfaction with care.	

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ● Probably favors the intervention ○ Favors the intervention ○ Varies ○ Don't know		Relatively few downsides. This is typically a requirement for clinicians but it is often not done consistently or early in stay.

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ● Negligible costs and savings ○ Moderate savings ○ Large savings ○ Varies ○ Don't know		While there is no specific cost data on these types of interventions, the costs of these sorts of interventions is generally low. The main resource cost here is time and money in setting up processess and interventions to support.

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ○ Low ○ Moderate ○ High ● No included studies		

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Cost effectiveness Does the cost-effectiveness of the intervention favor the intervention or the comparison?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies		
Equity What would be the impact on health equity?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Reduced ○ Probably reduced ○ Probably no impact ● Probably increased ○ Increased ○ Varies ○ Don't know		Systematic approaches to identify and educate substitute decision makers may increase equity by ensuring patients are represented by the correct individual (rather than individuals who are most convenient/accessible to the care team). This is particualrly important for unrepresented patients for whom there may be no obvious decision-maker, but efforts may identify an individual who is aware of the individual's values and preferences. Educational interventions may vary depending on the health literacy and cultural appropriateness of the process and materials. There are uncertainties here.

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Acceptability Is the intervention acceptable to key stakeholders?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		

Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	**Moderate**	Large		Varies	Don't know
UNDESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	**Low**	Moderate	High			No included studies
VALUES	Important uncertainty or variability	**Possibly important uncertainty or variability**	Probably no important uncertainty or variability	No important uncertainty or variability			

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

	JUDGEMENT						
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	**Probably favors the intervention**	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	**Negligible costs and savings**	Moderate savings	Large savings	Varies	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	Very low	Low	Moderate	High			**No included studies**
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	**Probably increased**	Increased	Varies	Don't know
ACCEPTABILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

CONCLUSIONS

Recommendation

We suggest ICUs develop resources for educating substitute decision-makers on their role in making decisions on behalf of decisionally-incapable patients. (Conditional recommendation, low certainty evidence)

ICUs should have a standardized process for identifying and documenting the legal surrogate decision-maker for decisionally-incapable patients, including those for whom a surrogate cannot be identified, in accordance with local laws and organizational policy. (Good practice statement)

Remark: this is best done a system/hospital level; the process for doing this, and individuals responsible, may vary between ICUs, but could include the clinical team, social workers, ethics team, legal, or risk management.

Justification

The primary benefit is having is qualitative data demonstrating that individuals without appropriate surrogate decision-makers have delayed end-of-life decsisions and prolonged length of stay in ICU. While there are usually legal requirement for clinicians/hospitals/health care systems to identify the legal surrogate decision-makers, this is not always done consistently, and decision-makers are often unfamiliar with their responsibilities as the surrogate decision maker. The panel chose to make a best practice statement on the basis of this indirect evidence.

There is some evidence regarding education and preparation of substitute decision-makers in their role, however the certainty of evidence for these upon most outcomes is low, although they have face validity and early evidence is promising. The resources required to develop and implement these may vary, but are not moderate or large. For these reasons the panel chose to make a conditional recommendation supporting their use.

Subgroup considerations

As below, different cultures may have varied values and decision-making styles/preferences which may impact how surrogate decision-making is approached in the ICU.

Implementation considerations

The individuals responsible for education of surrogate decision-makers may vary between centres; but a consistent approach is likely useful.

1.2 Interventions for procedural due process of incapacitated patients at end-of-life

Research priorities

- which approaches to identifying and surrogate decision-makers best result in timely end of life decisions, consistent with legal requiremets and patient interests (eg. Suen 2021 was a web-based intervention, are paper approaches also effective, in-person approaches, etc.)
- uncertainties around how systematic approaches to surrogate decision-making education may vary between groups (eg. cultural groups, faith traditions) where decision-making may not be viewed as individualistically, and how this may impact equity (eg. are some groups disadvantaged)

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1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Evidence Summary

Palliative Care Consultation - RCTs

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Palliative Care Consultation	Usual Care	Relative (95% CI)	Absolute (95% CI)		
Quality of communication - Palliative care consultation - RCT											
2 RCTs	not serious	serious[a]	not serious	not serious	none	141	137	-	SMD **0.68 higher** (0.44 higher to 0.93 higher)	⨁⨁⨁◯ Moderate	CRITICAL
Decisional conflict - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[b]	none	11	11	-	MD **14 higher** (2.35 higher to 25.65 higher)	⨁⨁◯◯ Low	CRITICAL
Decisions to limit treatments - Palliative care consultation- RCT											
4 RCTs	not serious	not serious[c]	not serious	not serious	none	122/288 (42.4%)	73/280 (26.1%)	**RR 0.75** (0.58 to 0.96)	**65 fewer per 1,000** (from 110 fewer to 10 fewer)	⨁⨁⨁⨁ High	CRITICAL
ICU length of stay - Palliative care consultation - RCTs											
5 RCTs	not serious	not serious	not serious	serious[d]	none	298	290	-	MD **0.93 lower** (1.95 lower to 0.1 higher)	⨁⨁⨁◯ Moderate	CRITICAL
Hospital length of stay - Palliative care consultation - RCT											
3 RCTs	not serious	not serious	not serious	serious[d]	none	237	238	-	MD **1.68 lower** (3.72 lower to 0.35 higher)	⨁⨁⨁◯ Moderate	CRITICAL
Patient satisfaction with care - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[b]	none	19	9	-	MD **23 lower** (30.24 lower to 15.76 lower)	⨁⨁◯◯ Low	IMPORTANT

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Family satisfaction with care - Palliative care consultation - RCT

2 RCTs	not serious	serious[a]	not serious	not serious	none	139	132	-	MD **3.03 higher** (1.99 higher to 4.07 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

Mental health symptoms - anxiety and depression - Palliative care consultation - RCT

2 RCTs	not serious	serious[a]	not serious	not serious	none	174	160	-	MD **0.02 lower** (1.7 lower to 1.67 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

Mental health symptoms- anxiety - Palliative care consultation - RCT

2 RCTs	not serious	serious[a]	not serious	not serious	none	174	160	-	MD **1.05 lower** (1.89 lower to 0.22 lower)	⨁⨁⨁◯ Moderate	IMPORTANT

Mental health symptoms - depression - Palliative care consultation - RCT

2 RCTs	not serious	serious[a]	not serious	not serious	none	174	160	-	MD **0.28 lower** (1.22 lower to 0.66 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

Mental health symptoms - PTS - Palliative care consultation - RCT

2 RCTs	not serious	very serious[e]	not serious	not serious	none	172	156	-	SMD **0.17 higher** (0.05 lower to 0.39 higher)	⨁⨁◯◯ Low	IMPORTANT

Mortality - Palliative care consultation - RCT

5 RCTs	not serious	not serious	not serious	serious[d]	none	108/298 (36.2%)	116/290 (40.0%)	**RR 0.88** (0.72 to 1.08)	**48 fewer per 1,000** (from 112 fewer to 32 more)	⨁⨁⨁◯ Moderate	IMPORTANT

Nonbeneficial treatment - hospital days - Palliative care consultation - RCT

1 RCT	not serious	not serious	not serious	serious[d]	none	130	126	-	MD **1 higher** (2.17 lower to 4.17 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

a. Significant statistical heterogeneity (I2>60%) resulting in serious inconsistency.
b. Although statistically significant, all data comes from a single very small trial, with optimal information size not met, resulting in very serious imprecision.
c. Although significant statistical heterogeneity (I2 =66%), all studies demonstrate similar direction of effects.
d. Wide 95% confidence intervals which do not rule out a clinically meaningful effect, resulting in serious imprecision.
e. Very serious statistical heterogeneity with studies demonstrating markedly different clinical effects resulting in very serious inconsistency.

Palliative Care Consultation - observational studies

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Palliative Care Consult	Usual Care	Relative (95% CI)	Absolute (95% CI)		
Decisions to limit treatments - Palliative care consultation - observational											
14 obs studies	not serious	not serious	not serious	not serious	none	1208/1515 (79.7%)	1004/2059 (48.8%)	**RR 0.44** (0.31 to 0.61)	**274 fewer per 1,000** (from 336 fewer to 190 fewer)	⨁⨁◯◯ Low	CRITICAL
ICU length of stay - Palliative care consultation - observational studies											
7 obs studies	not serious	very serious[c]	not serious	not serious[d]	none	788	1270	-	MD **1.13 lower** (3.47 lower to 1.2 higher)	⨁◯◯◯ Very low	CRITICAL
Hospital length of stay - Palliative care consultation - observational studies											
8 obs studies	not serious	very serious[c]	not serious	not serious[d]	none	856	1631	-	MD **0.43 higher** (5.39 lower to 6.24 higher)	⨁◯◯◯ Very low	CRITICAL
ICU staff moral distress - Palliative care consultation - observational											
1 obs study	not serious	not serious	not serious	serious[b]	none	33	48	-	MD **11.5 higher** (27.95 lower to 50.95 higher)	⨁◯◯◯ Very low	CRITICAL
Mortality - Palliative care consultation - observational											
22 obs studies	not serious	serious[a]	not serious	not serious	none	1862/3633 (51.3%)	1636/1242 7 (13.2%)	**RR 1.99** (1.33 to 2.98)	**130 more per 1,000** (from 43 more to 261 more)	⨁◯◯◯ Very low	IMPORTANT
Nonbeneficial treatment - ICU length of stay - Palliative care consultation - observational											

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

2 obs studies	not serious	very serious[c]	not serious	not serious[d]	none	153	162	-	MD **1.14 lower** (2.66 lower to 0.38 higher)	⨁◯◯◯ Very low	IMPORTANT
Nonbeneficial treatment - hospital days - Palliative care consultation- observational											
4 obs studies	not serious	very serious[c]	not serious	not serious[d]	none	15536	30667	-	MD **0.6 higher** (2.17 lower to 3.36 higher)	⨁◯◯◯ Very low	IMPORTANT
Hospital costs - Palliative care consultation - observational											
4 obs studies	not serious	very serious[c]	not serious	not serious[d]	none	16119	31719	-	SMD **0.03 higher** (0.13 lower to 0.19 higher)	⨁◯◯◯ Very low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

a. Significant statistical heterogeneity (I2>60%) resulting in serious inconsistency.
b. Wide 95% confidence intervals which do not rule out a clinically meaningful effect, resulting in serious imprecision.
c. Very serious statistical heterogeneity with studies demonstrating markedly different clinical effects resulting in very serious inconsistency.
d. Although there are wide 95% confidence intervals and these do not rule out a clinically meaningful effect, this is due primarily to very serious inconsistency, and so we chose not to rate down further for imprecision.

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Ethics Consultation - RCTs

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Ethics Consultation	usual care	Relative (95% CI)	Absolute (95% CI)		
Decisions to limit treatments - Ethics consultation- RCT											
1 RCT	not serious	not serious	not serious	serious[c]	none	21/35 (60.0%)	18/35 (51.4%)	**RR 0.82** (0.48 to 1.40)	**93 fewer per 1,000** (from 267 fewer to 206 more)	⨁⨁⨁◯ Moderate	CRITICAL
ICU length of stay - Ethics consultation -RCTs											
1 RCT	not serious	not serious	not serious	serious[c]	none	33	29	-	MD **13 lower** (27.86 lower to 1.86 higher)	⨁⨁⨁◯ Moderate	CRITICAL
Hospital length of stay - Ethics consultation - RCTs											
1 RCT	not serious	not serious	not serious	serious[b]	none	33	29	-	MD **45 lower** (64.58 lower to 25.42 lower)	⨁⨁⨁◯ Moderate	CRITICAL
Consensus on decision - Ethics consultation - RCT											
2 RCTs	not serious	serious[a]	not serious	not serious	none	49/68 (72.1%)	25/64 (39.1%)	**RR 1.85** (1.30 to 2.65)	**332 more per 1,000** (from 117 more to 645 more)	⨁⨁⨁◯ Moderate	CRITICAL
Mortality - Ethics consultation - RCT											
4 RCTs	not serious	not serious	not serious	serious[c]	none	276/518 (53.3%)	250/544 (46.0%)	**RR 1.10** (0.99 to 1.23)	**46 more per 1,000** (from 5 fewer to 106 more)	⨁⨁⨁◯ Moderate	IMPORTANT
Nonbeneficial treatment - ICU length of stay - Ethics consultation - RCT											
3 RCTs	not serious	not serious	not serious	serious[c]	none	250	229	-	MD **1.44 lower** (3.38 lower to 0.5 higher)	⨁⨁⨁◯ Moderate	IMPORTANT
Hospital costs - Ethics consults - RCT											

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

1 RCT	not serious	not serious	not serious	serious[c]	none	156	144	-	SMD **0.02 lower** (0.24 lower to 0.21 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

a. Significant statistical heterogeneity (I2>60%) resulting in serious inconsistency.
b. Although statistically significant, all data comes from a single very small trial, with optimal information size not met, resulting in very serious imprecision.
c. Wide 95% confidence intervals which do not rule out a clinically meaningful effect, resulting in serious imprecision.

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

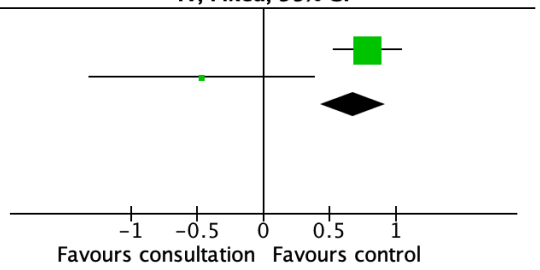
Forest plots

1. Quality of communication, measured with Questionnaire on Communication or Decision-Making Domain of FS-ICU

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Fixed, 95% CI	Year
1.1.1 Palliative care consultation – RCT									
Carson 2016	−80.9	4.4	130	−84.6	5	126	91.8%	0.78 [0.53, 1.04]	2016
Kamdar 2022	−86	19.6	11	−75	25.6	11	8.2%	−0.46 [−1.31, 0.39]	2022
Subtotal (95% CI)			**141**			**137**	**100.0%**	**0.68 [0.44, 0.93]**	

Heterogeneity: $Chi^2 = 7.61$, df = 1 (P = 0.006); $I^2 = 87\%$

Test for overall effect: Z = 5.48 (P < 0.00001)



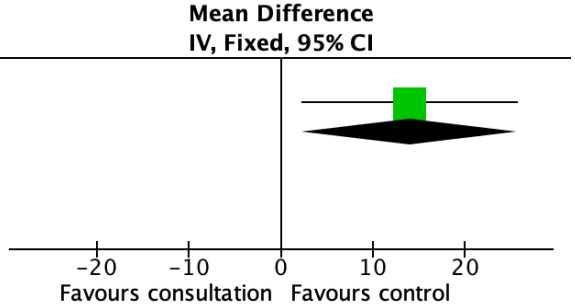
Test for subgroup differences: Not applicable

2. Decisional Conflict, Family - measured with decisional conflict scale

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
1.2.1 Palliative care consultation – RCT								
Kamdar 2022	34	18.1	11	20	7.8	11	100.0%	14.00 [2.35, 25.65]
Subtotal (95% CI)			**11**			**11**	**100.0%**	**14.00 [2.35, 25.65]**

Heterogeneity: Not applicable

Test for overall effect: Z = 2.36 (P = 0.02)



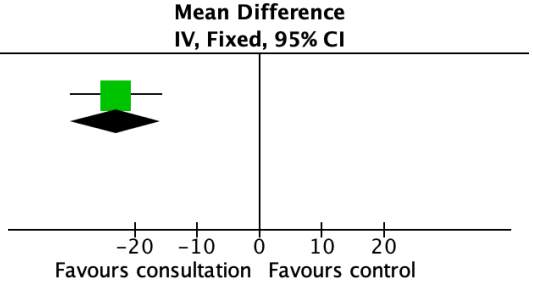
Test for subgroup differences: Not applicable

3. Patient satisfaction with care, measured with FS-ICU

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.3.1 Palliative care consultation – RCT									
Helgeson 2023	−92	9.6	19	−69	8.9	9	100.0%	−23.00 [−30.24, −15.76]	2023
Subtotal (95% CI)			**19**			**9**	**100.0%**	**−23.00 [−30.24, −15.76]**	

Heterogeneity: Not applicable

Test for overall effect: Z = 6.22 (P < 0.00001)



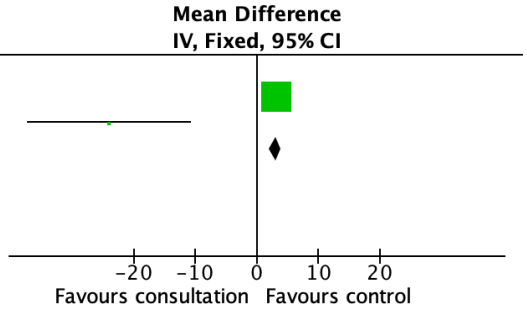
Test for subgroup differences: Not applicable

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

4. Family satisfaction with care, measured with FS-ICU

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.4.1 Palliative care consultation – RCT									
Carson 2016	−81.1	4.1	130	−84.3	4.4	126	99.4%	3.20 [2.16, 4.24]	2016
Helgeson 2023	−93	6.7	9	−69	15.6	6	0.6%	−24.00 [−37.23, −10.77]	2023
Subtotal (95% CI)			**139**			**132**	**100.0%**	**3.03 [1.99, 4.07]**	

Heterogeneity: Chi² = 16.14, df = 1 (P < 0.0001); I² = 94%
Test for overall effect: Z = 5.72 (P < 0.00001)

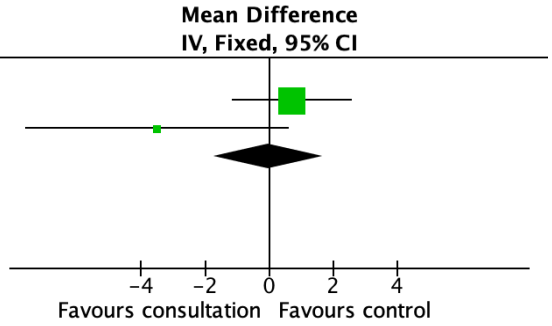


Test for subgroup differences: Not applicable

5. Family mental health symptoms - anxiety and depression, measured with HADS

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.5.1 Palliative care consultation – RCT									
Carson 2016	12.1	8	163	11.4	8.6	149	83.0%	0.70 [−1.15, 2.55]	2016
Kamdar 2022	2.5	4.3	11	6	5.4	11	17.0%	−3.50 [−7.58, 0.58]	2022
Subtotal (95% CI)			**174**			**160**	**100.0%**	**−0.02 [−1.70, 1.67]**	

Heterogeneity: Chi² = 3.38, df = 1 (P = 0.07); I² = 70%
Test for overall effect: Z = 0.02 (P = 0.99)

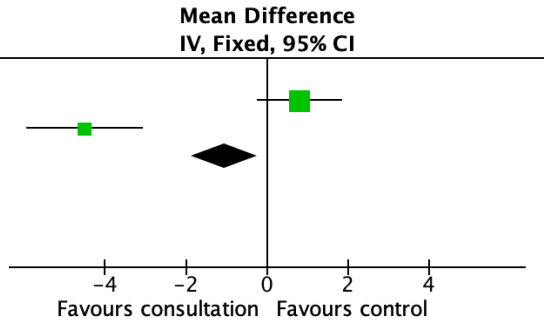


Test for subgroup differences: Not applicable

6. Family mental health symptoms - anxiety, measured with HADS, anxiety sub scale

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.6.1 Palliative care consultation – RCT									
Carson 2016	7.2	4.6	163	6.4	4.7	149	65.0%	0.80 [−0.23, 1.83]	2016
Kamdar 2022	5	2	11	9.5	1.3	11	35.0%	−4.50 [−5.91, −3.09]	2022
Subtotal (95% CI)			**174**			**160**	**100.0%**	**−1.05 [−1.89, −0.22]**	

Heterogeneity: Chi² = 35.32, df = 1 (P < 0.00001); I² = 97%
Test for overall effect: Z = 2.48 (P = 0.01)



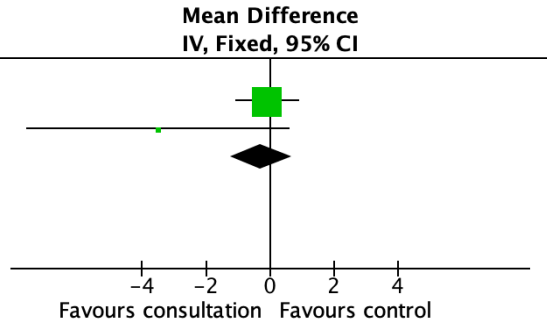
Test for subgroup differences: Not applicable

7. Family mental health symptoms - depression, measured with HADS, depression sub scale

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.7.1 Palliative care consultation – RCT									
Carson 2016	4.9	4.2	163	5	4.5	149	94.7%	−0.10 [−1.07, 0.87]	2016
Kamdar 2022	2.5	4.3	11	6	5.4	11	5.3%	−3.50 [−7.58, 0.58]	2022
Subtotal (95% CI)			**174**			**160**	**100.0%**	**−0.28 [−1.22, 0.66]**	

Heterogeneity: $Chi^2 = 2.53$, df = 1 (P = 0.11); $I^2 = 60\%$

Test for overall effect: Z = 0.59 (P = 0.56)



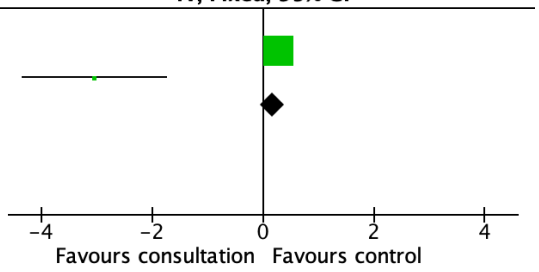
Test for subgroup differences: Not applicable

8. Family mental health symptoms - post traumatic stress, measured with Impact of Events Scale or Post-Traumatic Stress Disorder Checklist

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Fixed, 95% CI	Year
1.8.1 Palliative care consultation – RCT									
Carson 2016	25.6	18	161	20.7	18.3	145	97.1%	0.27 [0.04, 0.49]	2016
Kamdar 2022	9	5.7	11	26	5	11	2.9%	−3.05 [−4.35, −1.75]	2022
Subtotal (95% CI)			**172**			**156**	**100.0%**	**0.17 [−0.05, 0.39]**	

Heterogeneity: $Chi^2 = 24.35$, df = 1 (P < 0.00001); $I^2 = 96\%$

Test for overall effect: Z = 1.52 (P = 0.13)

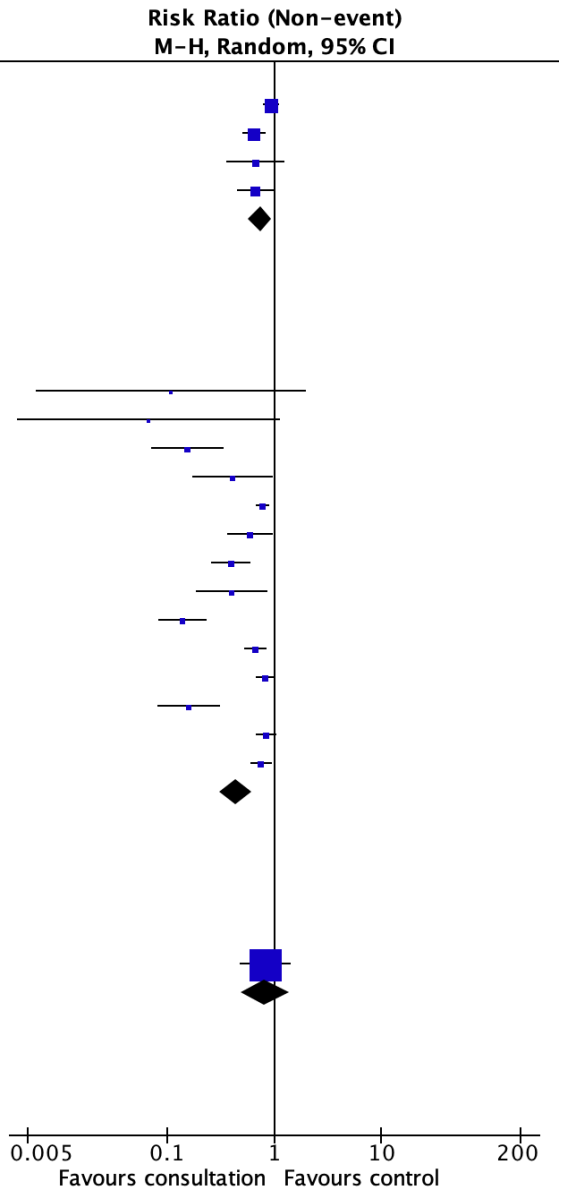


Test for subgroup differences: Not applicable

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

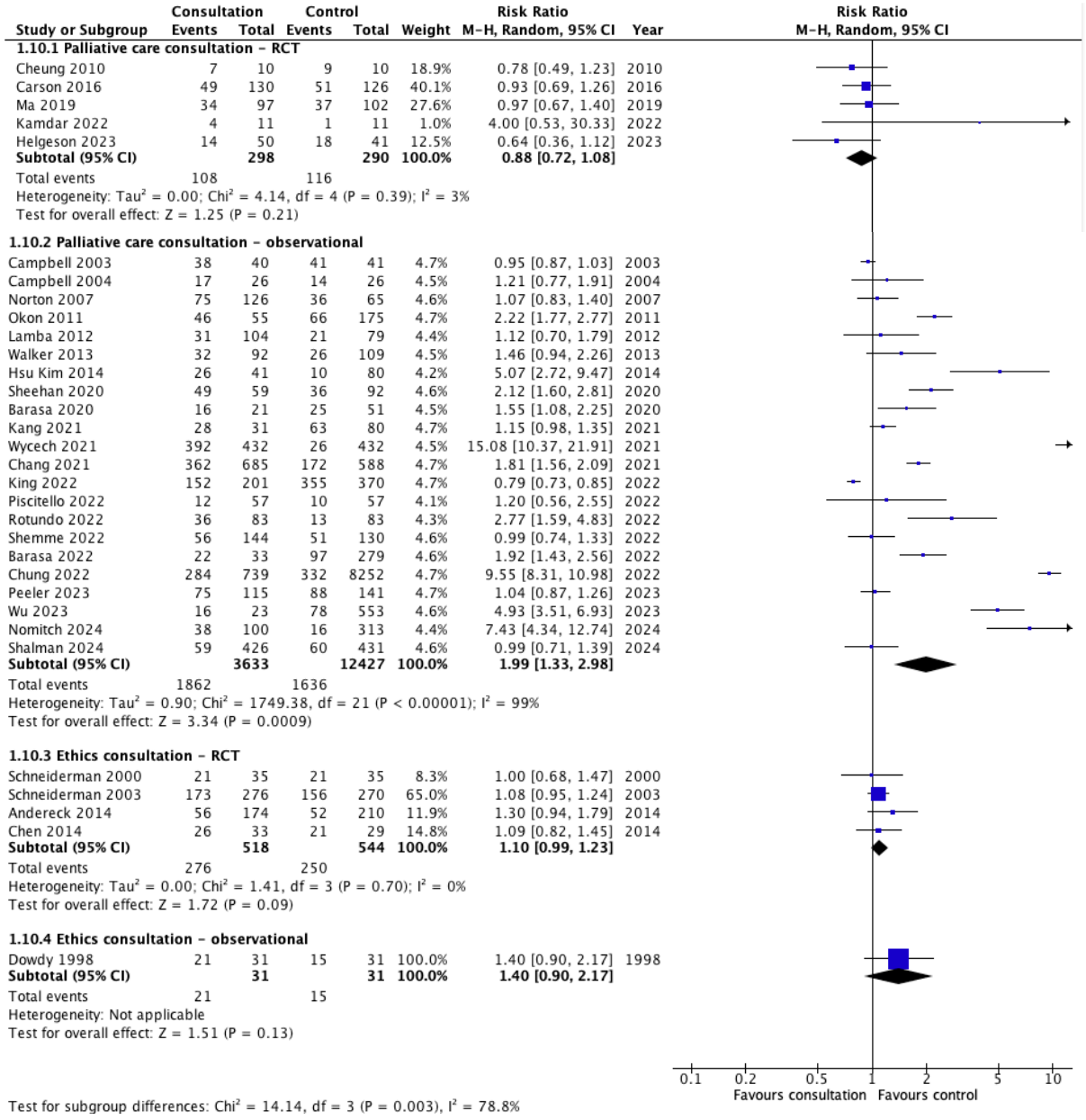
9. Decisions to limit treatments (withholding or withdrawing treatments)

Study or Subgroup	Consultation Events	Consultation Total	Control Events	Control Total	Weight	Risk Ratio (Non-event) M-H, Random, 95% CI	Year
1.9.1 Palliative care consultation- RCT							
Carson 2016	40	130	33	126	36.0%	0.94 [0.80, 1.09]	2016
Ma 2019	49	97	24	102	31.0%	0.65 [0.52, 0.81]	2019
Kamdar 2022	5	11	2	11	12.0%	0.67 [0.36, 1.22]	2022
Helgeson 2023	28	50	14	41	21.0%	0.67 [0.46, 0.98]	2023
Subtotal (95% CI)		**288**		**280**	**100.0%**	**0.75 [0.58, 0.96]**	
Total events	122		73				
Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 8.86$, df = 3 (P = 0.03); $I^2 = 66\%$							
Test for overall effect: Z = 2.30 (P = 0.02)							
1.9.2 Palliative care consultation - observational							
Campbell 2003	41	41	36	40	1.1%	0.11 [0.01, 1.95]	2003
Campbell 2004	26	26	19	26	1.2%	0.07 [0.00, 1.11]	2004
Okon 2011	49	55	51	175	6.4%	0.15 [0.07, 0.33]	2011
Lamba 2012	25	31	11	21	5.9%	0.41 [0.17, 0.95]	2012
Walker 2013	24	92	5	109	9.6%	0.77 [0.68, 0.88]	2013
Barasa 2020	11	21	10	51	8.1%	0.59 [0.37, 0.95]	2020
Barbar 2021	28	44	3	39	8.5%	0.39 [0.26, 0.59]	2021
Kang 2021	25	31	41	80	6.5%	0.40 [0.19, 0.84]	2021
Chang 2021	668	685	483	588	8.0%	0.14 [0.08, 0.23]	2021
Rotundo 2022	38	83	15	83	9.3%	0.66 [0.53, 0.83]	2022
Barasa 2022	7	33	10	279	9.5%	0.82 [0.68, 0.98]	2022
King 2022	192	201	265	370	7.0%	0.16 [0.08, 0.30]	2022
Piscitello 2022	17	57	9	57	9.4%	0.83 [0.68, 1.02]	2022
Peeler 2023	57	115	46	141	9.4%	0.75 [0.60, 0.93]	2023
Subtotal (95% CI)		**1515**		**2059**	**100.0%**	**0.44 [0.31, 0.61]**	
Total events	1208		1004				
Heterogeneity: $Tau^2 = 0.29$; $Chi^2 = 175.19$, df = 13 (P < 0.00001); $I^2 = 93\%$							
Test for overall effect: Z = 4.92 (P < 0.00001)							
1.9.3 Ethics consultation- RCT							
Schneiderman 2000	21	35	18	35	100.0%	0.82 [0.48, 1.40]	2000
Subtotal (95% CI)		**35**		**35**	**100.0%**	**0.82 [0.48, 1.40]**	
Total events	21		18				
Heterogeneity: Not applicable							
Test for overall effect: Z = 0.72 (P = 0.47)							



Test for subgroup differences: $Chi^2 = 7.48$, df = 2 (P = 0.02), $I^2 = 73.3\%$

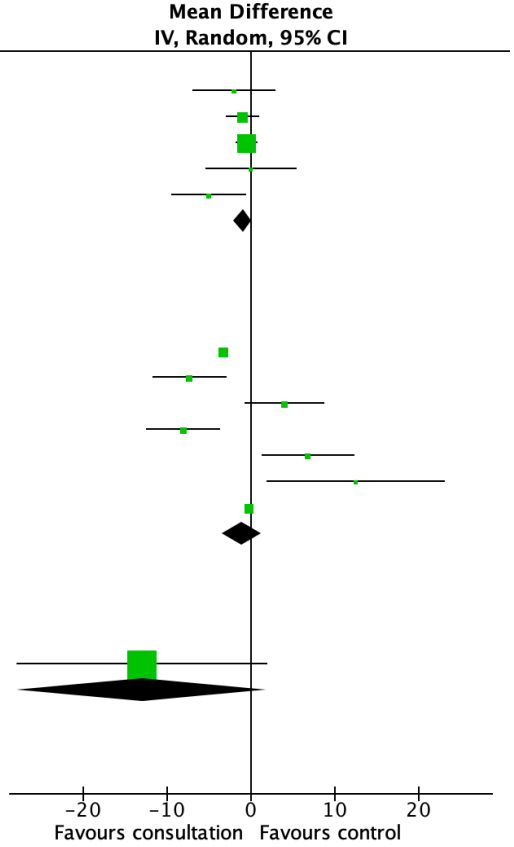
10. Patient mortality at longest follow-up



1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

11. ICU length of stay

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.11.1 Palliative care consultation – RCTs									
Cheung 2010	3	5.2	10	5	5.9	10	4.4%	−2.00 [−6.87, 2.87]	2010
Carson 2016	9	6.7	130	10	8.9	126	26.7%	−1.00 [−2.93, 0.93]	2016
Ma 2019	5	3.7	97	5.5	5.2	102	59.9%	−0.50 [−1.75, 0.75]	2019
Kamdar 2022	17	7.4	11	17	5.2	11	3.6%	0.00 [−5.34, 5.34]	2022
Helgeson 2023	3	2.2	50	8	14.1	41	5.5%	−5.00 [−9.36, −0.64]	2023
Subtotal (95% CI)			**298**			**290**	**100.0%**	**−0.93 [−1.95, 0.10]**	
Heterogeneity: $Tau^2 = 0.05$; $Chi^2 = 4.11$, df = 4 (P = 0.39); $I^2 = 3\%$									
Test for overall effect: Z = 1.77 (P = 0.08)									
1.11.2 Palliative care consultation – observational studies									
Campbell 2004	3.5	0.5	26	6.8	0.98	26	23.6%	−3.30 [−3.72, −2.88]	2004
Norton 2007	8.96	9.27	126	16.28	16.54	65	13.1%	−7.32 [−11.65, −2.99]	2007
Hsu Kim 2014	8	14.9	41	4	3.7	80	12.3%	4.00 [−0.63, 8.63]	2014
Rotundo 2022	15.32	13.17	83	23.38	15.1	83	13.1%	−8.06 [−12.37, −3.75]	2022
Wu 2023	10	13.2	23	3.2	5.1	553	10.4%	6.80 [1.39, 12.21]	2023
Patarroyo-Aponte 2024	40.3	33.2	63	27.8	19.3	32	4.0%	12.50 [1.92, 23.08]	2024
Shalman 2024	3.7	3.2	426	3.9	3.3	431	23.5%	−0.20 [−0.64, 0.24]	2024
Subtotal (95% CI)			**788**			**1270**	**100.0%**	**−1.13 [−3.47, 1.20]**	
Heterogeneity: $Tau^2 = 5.97$; $Chi^2 = 137.32$, df = 6 (P < 0.00001); $I^2 = 96\%$									
Test for overall effect: Z = 0.95 (P = 0.34)									
1.11.3 Ethics consultation –RCTs									
Chen 2014	17	17.26	33	30	37.5	29	100.0%	−13.00 [−27.86, 1.86]	2014
Subtotal (95% CI)			**33**			**29**	**100.0%**	**−13.00 [−27.86, 1.86]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 1.71 (P = 0.09)									

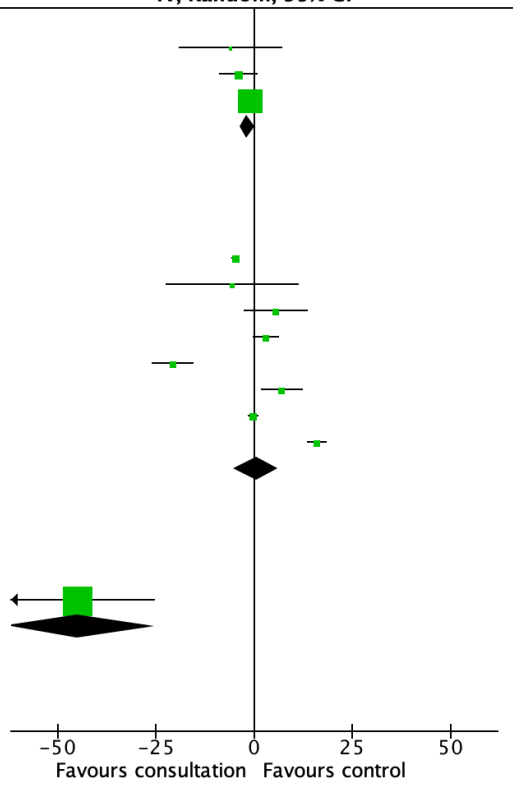


Test for subgroup differences: $Chi^2 = 2.54$, df = 2 (P = 0.28), $I^2 = 21.1\%$

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

12. Hospital length of stay

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.12.1 Palliative care consultation – RCT									
Cheung 2010	5	5.9	10	11	20	10	2.5%	−6.00 [−18.92, 6.92]	2010
Carson 2016	19	18.5	130	23	20	126	18.6%	−4.00 [−8.72, 0.72]	2016
Ma 2019	10	6.7	97	11	9.6	102	78.9%	−1.00 [−3.29, 1.29]	2019
Subtotal (95% CI)			**237**			**238**	**100.0%**	**−1.68 [−3.72, 0.35]**	
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 1.69$, df = 2 (P = 0.43); $I^2 = 0\%$									
Test for overall effect: Z = 1.62 (P = 0.11)									
1.12.2 Palliative care consultation – observational studies									
Campbell 2004	7.4	1.4	26	12.1	1.6	26	14.3%	−4.70 [−5.52, −3.88]	2004
Norton 2007	35.77	50.19	126	41.4	58.41	65	6.6%	−5.63 [−22.32, 11.06]	2007
Hsu Kim 2014	13	23	41	7.5	16	80	11.3%	5.50 [−2.36, 13.36]	2014
Kang 2021	11	7.7	31	8	6.8	80	13.8%	3.00 [−0.09, 6.09]	2021
Rotundo 2022	18.33	14.3	83	39.1	19.27	83	12.9%	−20.77 [−25.93, −15.61]	2022
Wu 2023	13.5	12.3	23	6.5	11.1	553	12.9%	7.00 [1.89, 12.11]	2023
Shalman 2024	7.5	8.1	426	7.8	9.7	431	14.2%	−0.30 [−1.50, 0.90]	2024
Nomitch 2024	36	7.6	100	20	15.6	313	14.0%	16.00 [13.72, 18.28]	2024
Subtotal (95% CI)			**856**			**1631**	**100.0%**	**0.43 [−5.39, 6.24]**	
Heterogeneity: $Tau^2 = 61.39$; $Chi^2 = 364.06$, df = 7 (P < 0.00001); $I^2 = 98\%$									
Test for overall effect: Z = 0.14 (P = 0.89)									
1.12.3 Ethics consultation – RCTs									
Chen 2014	25	35.8	33	70	42.05	29	100.0%	−45.00 [−64.58, −25.42]	2014
Subtotal (95% CI)			**33**			**29**	**100.0%**	**−45.00 [−64.58, −25.42]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 4.50 (P < 0.00001)									

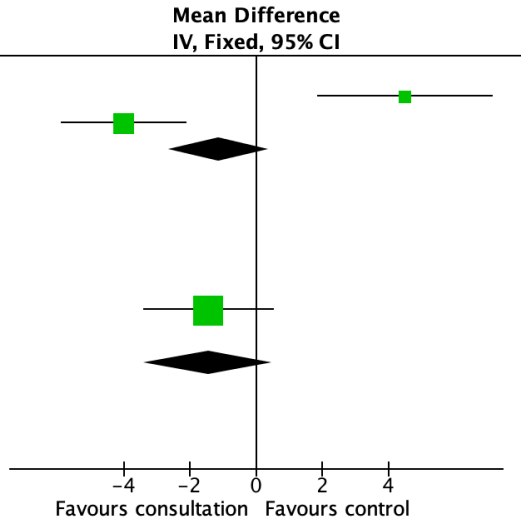


Test for subgroup differences: $Chi^2 = 19.27$, df = 2 (P < 0.0001), $I^2 = 89.6\%$

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

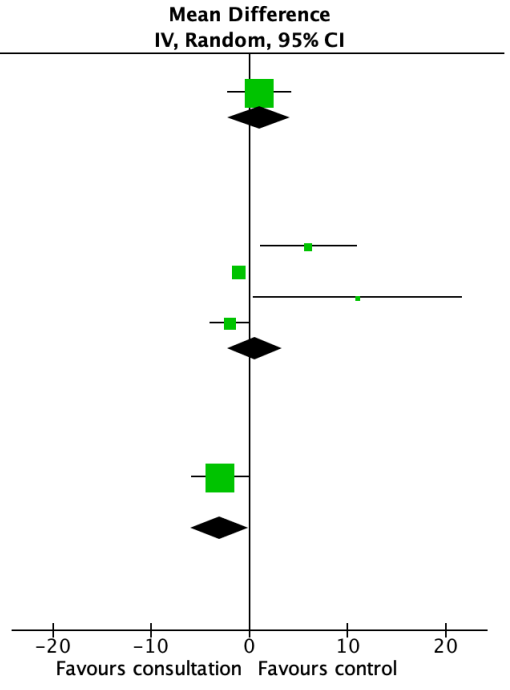
13. Non-beneficial treatment, ICU length of stay in patients who died

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.13.1 Palliative care consultation – observational									
Okon 2011	11.5	8.4185	46	7	4.0678	66	33.7%	4.50 [1.88, 7.12]	2011
Golob 2022	0	3	107	4	8.9	96	66.3%	-4.00 [-5.87, -2.13]	2022
Subtotal (95% CI)			**153**			**162**	**100.0%**	**-1.14 [-2.66, 0.38]**	
Heterogeneity: Chi^2 = 26.75, df = 1 (P < 0.00001); I^2 = 96%									
Test for overall effect: Z = 1.47 (P = 0.14)									
1.13.2 Ethics consultation – RCT									
Schneiderman 2000	4.2	0	21	13.2	0	21		Not estimable	2000
Schneiderman 2003	6.42	6.89	173	7.86	10.48	156	100.0%	-1.44 [-3.38, 0.50]	2003
Andereck 2014	11	0	56	11	0	52		Not estimable	2014
Subtotal (95% CI)			**250**			**229**	**100.0%**	**-1.44 [-3.38, 0.50]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 1.46 (P = 0.15)									
Test for subgroup differences: Chi^2 = 0.06, df = 1 (P = 0.81), I^2 = 0%									



14. Non-beneficial treatment, hospital length of stay in patients who died

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.14.1 Palliative care consultation – RCT									
Carson 2016	25	13.3	130	24	12.6	126	100.0%	1.00 [-2.17, 4.17]	2016
Subtotal (95% CI)			**130**			**126**	**100.0%**	**1.00 [-2.17, 4.17]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 0.62 (P = 0.54)									
1.14.2 Palliative care consultation– observational									
Okon 2011	18.5	11.786	46	12.5	14.2374	66	18.3%	6.00 [1.16, 10.84]	2011
Maley 2020	12	15.4736	15370	13.1	15.4736	30498	41.5%	-1.10 [-1.40, -0.80]	2020
Carmichael 2021	16	17	13	5	7	7	5.8%	11.00 [0.40, 21.60]	2021
Golob 2022	8	5.6	107	10	8.3	96	34.4%	-2.00 [-3.97, -0.03]	2022
Subtotal (95% CI)			**15536**			**30667**	**100.0%**	**0.60 [-2.17, 3.36]**	
Heterogeneity: Tau^2 = 4.77; Chi^2 = 14.08, df = 3 (P = 0.003); I^2 = 79%									
Test for overall effect: Z = 0.42 (P = 0.67)									
1.14.3 Ethics consultation– RCT									
Schneiderman 2003	8.66	9.39	173	11.62	16.36	156	100.0%	-2.96 [-5.88, -0.04]	2003
Andereck 2014	23	0	56	21	0	52		Not estimable	2014
Subtotal (95% CI)			**229**			**208**	**100.0%**	**-2.96 [-5.88, -0.04]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 1.98 (P = 0.05)									
Test for subgroup differences: Chi^2 = 4.18, df = 2 (P = 0.12), I^2 = 52.2%									

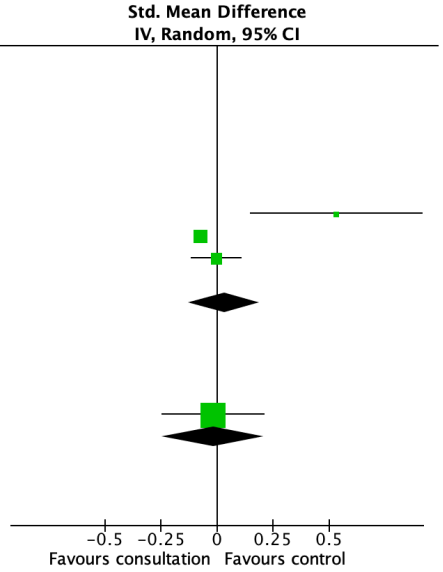


1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

15. Hospital costs

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
1.15.1 Palliative care consultation – RCT									
Ma 2019	37,310	0	97	45,790	0	102		Not estimable	2019
Subtotal (95% CI)			**97**			**102**		**Not estimable**	
Heterogeneity: Not applicable									
Test for overall effect: Not applicable									
1.15.2 Palliative care consultation – observational									
Hsu Kim 2014	315,493.81	503,815.5514	41	116,934.2	279,430.4477	80	12.8%	0.53 [0.15, 0.92]	2014
Maley 2020	68,200	113,472.9385	15370	76,600	113,472.9385	30498	48.0%	−0.07 [−0.09, −0.05]	2020
Chang 2021	293,169	350,043	685	294,161	315,276	588	39.3%	−0.00 [−0.11, 0.11]	2021
Wu 2023	390,266.76	0	23	170,256.11	0	553		Not estimable	2023
Subtotal (95% CI)			**16119**			**31719**	**100.0%**	**0.03 [−0.13, 0.19]**	
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 11.12$, df = 2 (P = 0.004); $I^2 = 82\%$									
Test for overall effect: Z = 0.39 (P = 0.70)									
1.15.3 Ethics consults – RCT									
Schneiderman 2003	24,938	227,255.4772	156	30,184	353,748	144	100.0%	−0.02 [−0.24, 0.21]	2003
Subtotal (95% CI)			**156**			**144**	**100.0%**	**−0.02 [−0.24, 0.21]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 0.15 (P = 0.88)									

Test for subgroup differences: $Chi^2 = 0.12$, df = 1 (P = 0.73), $I^2 = 0\%$



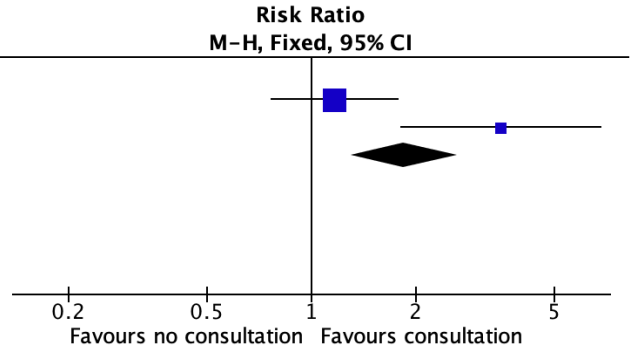
1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

16. Consensus on end of life decision-making

Study or Subgroup	Consultation Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI	Year
1.16.1 Ethics consultation - RCT							
Schneiderman 2000	21	35	18	35	70.7%	1.17 [0.77, 1.78]	2000
Chen 2014	28	33	7	29	29.3%	3.52 [1.81, 6.81]	2014
Subtotal (95% CI)		**68**		**64**	**100.0%**	**1.85 [1.30, 2.65]**	
Total events	49		25				

Heterogeneity: $Chi^2 = 8.26$, df = 1 (P = 0.004); $I^2 = 88\%$

Test for overall effect: Z = 3.40 (P = 0.0007)



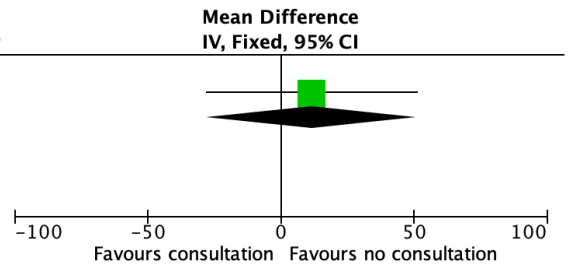
Test for subgroup differences: Not applicable

17. ICU staff moral distress, measured with MMD-HP scale

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.17.1 Palliative care consultation - observational									
Piscitello 2022	134	87.4262	33	122.5	91.263	48	100.0%	11.50 [-27.95, 50.95]	2022
Subtotal (95% CI)			**33**			**48**	**100.0%**	**11.50 [-27.95, 50.95]**	

Heterogeneity: Not applicable

Test for overall effect: Z = 0.57 (P = 0.57)



Test for subgroup differences: Not applicable

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Narrative Evidence

Theme/topic	Findings	Sources
Consensus-building	• Ethics consultations are more likely to result in decision-making consensus than not using them	Dowdy 1998 Schneiderman 2000 Chen 2014
Acceptability of consults	• Families and ICU staff find ethics consultation to be acceptable, even if not all agree out the outcomes of the consultation	Chen 2014 Andereck 2014
Consultation process	• Early referral to palliative medicine for high-risk patients can be facilitated during a daily ICU huddle	Babar 2021
Spiritual care	• Spiritual care involvement is associated with longer length of stay, but the cause of this association was unclear	Labuscagne 2021
Cultural acceptability	• Culturally-tailored palliative care consults may impact patient decision-making regarding end of life care	Patel 2021

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Evidence-to-Decision Framework

QUESTION

Should expert consultation (eg. ethics, palliative care, spiritual care, etc.) vs. usual care be used for adult ICU patients for whom there is potential or actual conflict over end of life decisions?	
POPULATION:	adult ICU patients for whom there is potential or actual conflict over end of life decisions
INTERVENTION:	expert consultation (eg. ethics, palliative care, spiritual care, etc.)
COMPARISON:	usual care

ASSESSMENT

Problem Is the problem a priority?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		ICU clinicians provide most communication with families and assist in end of life decision-making. Consultative services such as palliative care and ethics may provide additional expertise which may be useful to ICU patients and families when making decisions about end-of-life care. It may also mitigate moral distress among staff by facilitating better communication and decision-making processess and relieving some of the decision-making burden.

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Desirable Effects How substantial are the desirable anticipated effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Trivial ○ Small ● Moderate ○ Large ○ Varies ○ Don't know	Overall desirable effect is moderate to large. Evidence suggests moderate but does not include all important outcomes. **Palliative care consultation:** • increase in decisions to limit treatments (~6.5%) • possibly lower ICU length of stay (~1 day) • possibly similar **Ethics consultation:** • possibly increase in decisions to limit treatments (~9%) • possibly lower ICU length of stay (~1 day) • possibly lower hospital length of stay (~2 days	Complex to interpret decisions to withhold/withdraw treatments, mortality, etc. These may or may not be concordant with patient goals, and even then, some patient goals may not be reasonable/ realistic given clinical circumstances. Ethics consults help the team and patients/families develop a plan of care not just 'all or nothing' with concrete goals and bench marks to meet along the care pathway. Reductions in length of stay are important, and decisions to withhold or withdraw treatments are important for patient care. Not all important outcomes were assessed in these studies, eg. team outcomes, process outcomes etc.

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ● Small ○ Moderate ○ Large ○ Varies ○ Don't know	**Palliative care consultation:** • possibly lower family-rated quality of communication • possibly worse family-rated decisional conflict • possibly worse family satisfaction with care • possibly worse family mental healthy symptoms (PTSD, anxiety; no difference in depression) • possibly little to no difference in nonbeneficial treatment (length of stay in patients who died) **Ethics consultation:** • possibly lower concensus on decision-making • possibly no effect on staff moral distress	As above, it is hard to interpret some of these outcomes in the context of end-of-life decision-making and the perspectives of families and patients. eg. what is reasonable/possible. Some of these harms may also imply that post-ICU/bereavement care for families is lacking, and was not provided in these studies.

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ● Low ○ Moderate ○ High ○ No included studies	**Palliative care consultation:** low for critical outcome of decisional conflict, moderate or high for other outcomes **Ethics consultation:** moderate, but many outcomes not reported	

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Important uncertainty or variability ○ Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		Complex to interpret decisions to withhold/withdraw treatments, mortality, etc. These may or may not be concordant with patient goals, and even then, some patient goals may not be reasonable/ realistic given clinical circumstances. There are inherently large and important value-laden tradeoffs with these outcomes and these decisions. Consultaiton with palliative care and ethics can help to identify these variations in values and tradeoffs of treatments. The signals seen in the evidence may reflect these variations.

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ● Probably favors the intervention ○ Favors the intervention ○ Varies ○ Don't know		

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ● Varies ○ Don't know		Costs vary depending on the perspective taken; hospital costs are more likely to be lower along with lower length of stay. The costs of the consultation will vary depending on the model used, who is doing the consult, how the remunerated, volume, insurance, etc

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ● Low ○ Moderate ○ High ○ No included studies		Certainty of evidence for many of the important costs is low and varies between the included studies.

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies		

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Reduced ○ Probably reduced ○ Probably no impact ○ Probably increased ○ Increased ● Varies ○ Don't know		The impact is uncertain and may vary between populations; it could provide more consistent decision-making in some groups, but may disproportionately impact patients from other cultural or faith traditions. The variation in values and preferences here, values around end of life care, mean that the impact upon equity may vary as well.

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

Acceptability Is the intervention acceptable to key stakeholders?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ○ Yes ● Varies ○ Don't know		Acceptability may vary for patients, families, health care providers. Ethics and palliative care clinicians may find triggers/prompts for consultation to not be acceptable (even if clinician-initiated consultations themselves are)

Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		The main feasibility concern is reasources; the presence of numerous trials demonstrates implementation is feasible if resources and willingness exist. Accreditation requires institutions to have processess for resolving conflicts (eg. ethics).

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	**Moderate**	Large		Varies	Don't know
UNDESIRABLE EFFECTS	Trivial	**Small**	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	**Low**	Moderate	High			No included studies
VALUES	**Important uncertainty or variability**	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability			

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

	JUDGEMENT						
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	**Probably favors the intervention**	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	**Varies**	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED	Very low	**Low**	Moderate	High			No included studies
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	Probably increased	Increased	**Varies**	Don't know
ACCEPTABILITY	No	Probably no	Probably yes	Yes		**Varies**	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

CONCLUSIONS

Recommendation

We suggest proactive consultation of Palliative Care/Palliative Medicine and/or Ethics Consult Service, when available, to assist with defining goals of care for ICU patients who may no longer benefit from critical care. (conditional recommendation, low certainty evidence)

Justification

While patients, families, and staff may vary in their values and preferences, these interventions help to ensure a decisional due process for conflicts over goals of treatment at end of life. They ensure that variations in values and preferences are heard and explored. These interventions likely increase the number of treatement-related decisions made, and these in turn appear to shorten length of stay, probably by minimizing duration of treatment to patients who have poor outcomes and will no longer benefit from ICU treatment. The symptoms of increased distress upon family members and decisional conflict is undesirable but may relate to the fact that the patient has a poor outcome in the first place and that hoped-for outcomes may not be feasible. These included studies used a wide variety of triggers for consultation and these require research around the optimal timing and process for consultation.

Implementation considerations

Consultation should be proactive and timely to help develop a plan of care based upon realistic goals with concrete benchmarks for treatment success and to help mitigate conflict along the way. The included studies typically consulted within a time frame of ICU admission (eg. 3-7 days) or once potential value-laden treatment conflicts were identified.

Research priorities

There is little evidence of the impact upon staff but this due process may mitigate moral distress for staff-- future studies should investigate this.

More consensus on outcomes (process, clincial, resrouces) and consultation process is needed; these are likely to vary based upon the populations served; values and preferences play an important role here.

1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

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1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

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1.3 Consultations to prevent or mitigate conflicts over treatment decisions at end-of-life

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1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Evidence Summary

Question 1.4: Should we recommend specific institutional policies to reduce futile and potentially inappropriate treatments when there are conflicts during end of life decision-making?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	institutional policies to reduce futile and potentially inappropriate treatments	no institutional policies	Relative (95% CI)	Absolute (95% CI)		
DNR Orders												
2	observational studies	not serious	serious[a]	not serious	serious[b]	none	212/1465 (14.5%)	207/1477 (14.0%)	**OR 1.15** (0.90 to 1.46)	**18 more per 1,000** (from 12 fewer to 52 more)	⨁◯◯◯ Very low	CRITICAL
ICU Mortality												
1	observational studies	not serious	not serious	not serious	serious[b]	none	39/96 (40.6%)	51/113 (45.1%)	**OR 0.83** (0.48 to 1.44)	**46 fewer per 1,000** (from 168 fewer to 91 more)	⨁◯◯◯ Very low	CRITICAL
Hospital mortality												
2	observational studies	not serious	not serious	not serious	serious[b]	none	132/1485 (8.9%)	139/1477 (9.4%)	**OR 1.02** (0.77 to 1.35)	**2 more per 1,000** (from 20 fewer to 29 more)	⨁◯◯◯ Very low	CRITICAL
ICU length of stay												
1	observational studies	not serious	not serious	not serious	serious[b]	none	96	113	-	MD **1.3 lower** (3.26 lower to 0.66 higher)	⨁◯◯◯ Very low	CRITICAL
Hospital length of stay												
1	observational studies	not serious	not serious	not serious	not serious	none	96	113	-	MD **3.5 lower** (6.74 lower to 0.26 lower)	⨁⨁◯◯ Low	CRITICAL
Use of invasive procedures												
2	observational studies	not serious	not serious	not serious	not serious	none	The use of time-limited trials (Chang 2021) or standardized end-of-life treatment policies (O'Toole 1994) may result in a reduction in many ICU procedures, including central lines, bronchoscopy, mechanical ventilation, and diaylsis.				⨁⨁◯◯ Low	CRITICAL
Family satisfaction with care												
1	observational studies	not serious	not serious	not serious	serious[b]	none	33	36	-	MD **1.4 lower** (6.25 lower to 3.45 higher)	⨁◯◯◯ Very low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **OR:** odds ratio

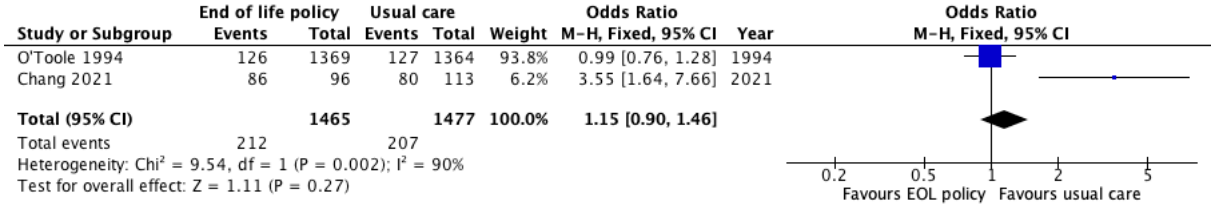
Explanations

a. Serious statistical heterogeneity (I2>90%), which may be due to differences between the interventions and the context in which the policies are enacted.
b. Wide 95% confidence intervals which do not rule out a clinically meaningful effect.

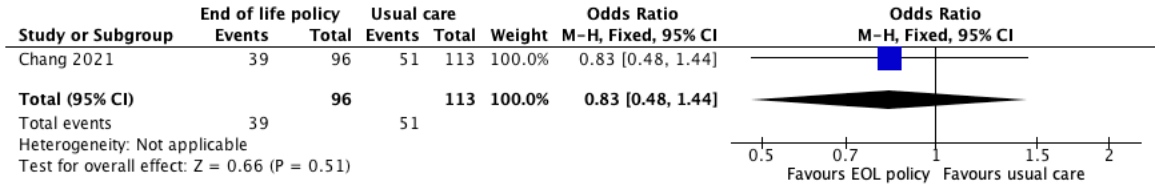
1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Forest Plots

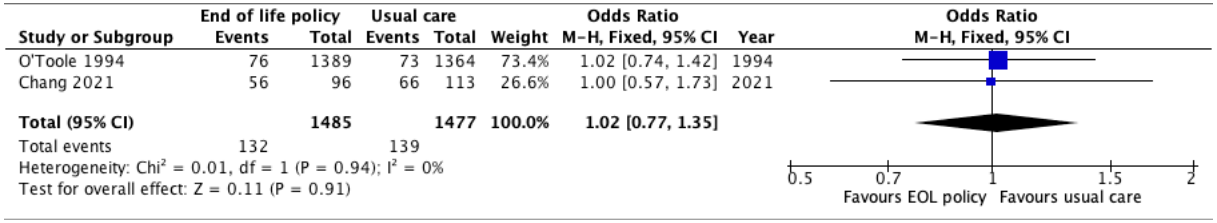
1. *Do not resuscitate orders*



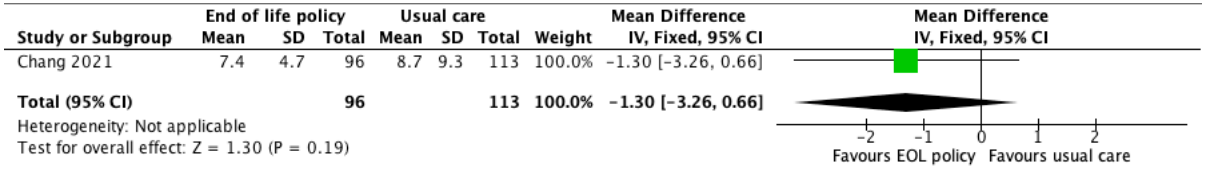
2. *ICU Mortality*



3. *Hospital Mortality*

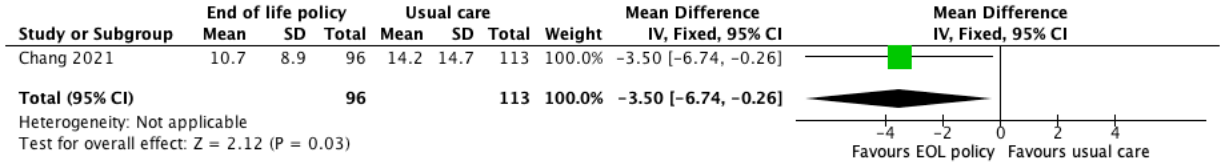


4. *ICU length of stay*

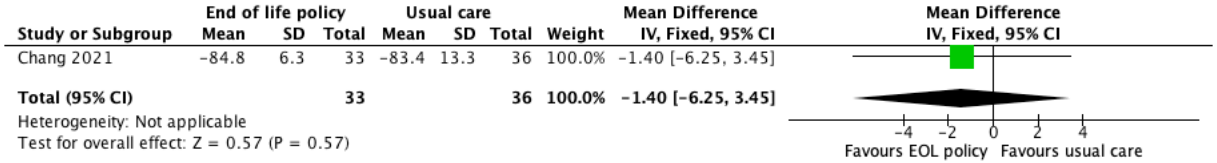


1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

5. Hospital length of stay



6. Family satisfaction with care



Narrative Evidence

Theme/topic	Findings	Sources
Policies allowing unilateral DNR	• May be used in two situations: patient imminently dying, or when a patient is not imminently dying but considered unlikely to survive until hospital discharge • For patients for whom there is conflict over code status, there may not be differences in age, race, citizenship, or baseline function when unilateral DNR is used vs not	Courtwright 2020
Time-limited trials	• May result in fewer procedures during ICU stay, including central venous catheter, bronchoscopy, and initiation of mechanical ventilation	Chang 2021
Treatment-limitation orders	• Using a structured treatment limitation policy for DNR orders may result in more limitations in specific treatments, including defibrillation/cardioversion, vasopressors, intubation, ventilation, IC transfer, dialysis, transfusion, IV nutrition and electrolyte replacement • May result in improved staff perception of quality of communication	O'Toole 1994

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Evidence-to-Decision Framework

QUESTION

Should institutional policies to reduce futile and potentially inappropriate treatments vs. no institutional policies be used for adult ICU patients for whom there is a conflict over end of life decisions?	
POPULATION:	adult ICU patients for whom there is a conflict over end of life decisions
INTERVENTION:	institutional policies to reduce futile and potentially inappropriate treatments
COMPARISON:	no institutional policies
MAIN OUTCOMES:	DNR Orders; ICU Mortality; Hospital mortality; ICU length of stay; Hospital length of stay; Use of invasive procedures ; Family satisfaction

ASSESSMENT

Problem

Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		During situations where there are disagreements over treatment decisions at end of life, having instututional policies to guide treatment decisions could help to ensure more consistent approaches to care. This could ensure that patients who wish to receive ongoing critical care interventions only receive those treatments with a reasonable chance of benefit (however this may be defined). Clinicians often have significant moral distress when providing what they perceive to be inappropriate or futile treaments to patients. For patients and families, receiving prolonged ICU care without benefit can increase suffering. Such policies may be at the instutional level, and operate within local medico-legal frameworks for consent to treatment.

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Desirable Effects How substantial are the desirable anticipated effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Trivial ○ Small ○ Moderate ● Large ○ Varies ○ Don't know	We are very uncertain of the impact of hospital polices (including use of standardized code status forms and time-limited trials of ICU care) upon proportion of patients with a DNR order, hospital and ICU mortality, hospital and ICU length of stay, and family satisfaction with care. The use of such policies may result in fewer patients undergoing invasive critical care procedures, such as central lines, bronchoscopy, mechanical ventilation, or dialysis.	A shared policy framework may improve consistency of care and promote teamwork between stakeholders (including clinicians, patients, and families). It can hold team members accountable to having honest conversations. A policy indicates that an institution considers and supports the professional norms of its clinicians. It may reduce workload for clinicians by providing guidance of processes to follow when making end of life decisions in ICU. The absence of such policies may result in clinicians providing treatment which is not the standard of care (above or below the standard of care).

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ● Small ○ Moderate ○ Large ○ Varies ○ Don't know	We did not identify any evidence for undesirable effects of institiutional policies.	Families/surrogate decision-makers may become upset if institutional policies result in decisions which do not align with their preferences. This may be mitigated by the fact that such decisions and process uniform and consistent between clinical team members. Policies at an institutional (rather than regional) level may result in discrepancies in care between hospitals and be upsetting for families. Policy frameworks may not account for all important variables in decision-making, even if it is useful in the most common situations. Policies which are inconsistent with medico-legal standards could put clinicians at risk.

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Very low ○ Low ○ Moderate ○ High ○ No included studies	Overall certainty of evidence is very low, as it is based upon observational studies, and effect estimates with serious imprecision. Certainty of evidence that policies reduce invasive procedures is low.	

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ● Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		Some clinicians may value having decisional due process of a policy to enable them to avoid providing non-beneficial/futile treatments; whereas others may have concerns that invoking such policies (or invoking them too early) may provoke hostility and medico-legal consequences. Similarly, some patients and families may have variable responses to having such policies (some favouring more directive guidance with regard to which treatments are provided, and others may dislike having limited options). Individuals from different cultural and or faith traditions may not agree with a policy's approach to limiting or withdrawing treatments.

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ● Favors the intervention ○ Varies ○ Don't know		Not all of the benefits of a policy are easily measured, many are process-related or mitigate rare, but serious, outcomes.

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ○ Negligible costs and savings ● Moderate savings ○ Large savings ○ Varies ○ Don't know	Overall likely some reduction in costs.	Costs of developing and implementing a policy on end of life are minimal. There are costs related to human resources in terms of burnout, moral distress, which could lead to higher costs for staff training and turnover. The data suggests that in the presence of an end of life policy, there are fewer costly treatments provided, and length of stay in ICU and hospital is similar or perhaps slightly shorter.

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ● Low ○ Moderate ○ High ○ No included studies	We have evidence in reduction in use of invasive procedures, but not direct financial costs.	

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies		

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Reduced ○ Probably reduced ○ Probably no impact ● Probably increased ○ Increased ○ Varies ○ Don't know		Policies can promote due process and therefore increase equity -- similar patients are more likely receive similar care in accordance with policies. They may also hold individuals and institutions accountable to providing equitable care by providing clear standards for decision-making and when treatments should or should not be provided. If invoked selectively to one population versus another, it could potentially reduce equity.

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

Acceptability

Is the intervention acceptable to key stakeholders?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ○ Yes ● Varies ○ Don't know		Having a policy may reassure clinicians that they are adhering to local medico-legal requirements and best practices for end of life care. Some clinicians may not invoke policies because of fears of medico-legal repercussions if a policy suggests they not provide some treatmetns which are wanted by the patient/family. Patients and families may find institutional policies for managing conflicts over treatmentments in ICU to be acceptable (clear standard to adhere to) and others may not find it acceptable (disagree with the standards). Institutions and administrators would likely find such policies acceptable as way to standardize and streamline process.

Feasibility

Is the intervention feasible to implement?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		Many hospitals have such policies in place, demonstrating that they are feasible across a variety of policy contexts.

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	Moderate	**Large**		Varies	Don't know
UNDESIRABLE EFFECTS	Trivial	**Small**	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	**Very low**	Low	Moderate	High			No included studies
VALUES	Important uncertainty or variability	**Possibly important uncertainty or variability**	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	**Favors the intervention**	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	**Moderate savings**	Large savings	Varies	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED	Very low	**Low**	Moderate	High			No included studies
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	**Probably increased**	Increased	Varies	Don't know
ACCEPTABILITY	No	Probably no	Probably yes	Yes		**Varies**	Don't know
FEASIBILITY	No	Probably no	Probably yes	**Yes**		Varies	Don't know

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

CONCLUSIONS

Recommendation

We suggest implementing institutional policies to address conflicts over futile and potentially inappropriate treatments in the ICU. (conditional recommendation, low certainty)

Justification

There is limited evidence on institional policies to reduce futile and potentially inappropriate treatments; there is low certainty evidence that such policies reduce the number of treatments provided to patients without impacting mortality. As well, policies can support clinical teams and have the potential to reduce burnout and moral distress, although evidence on this is lacking. Clinicans likely value having institional support for withholding or withdrawing treatments if they are judged unlikely to be beneficial, and a policy may improve equity by ensuring that treatement decisions are guided by a framework that can be applied fairly to all patients.

Implementation considerations

The panel noted that there is a distinction between not providing treatments because it is a patient/family request (decline of a treatment offered by the clinical team), and not offering treatments in the first place (eg. treatments which are not clinically indicated or have a very small chance of helping the patient), and that policies to reduce futile and potentially inappropriate treatments need to distinguish between these instances,
and also be consistent with medico-legal requirements in the institition's jurisdiction.

Due process elements and procedural safeguards, such as criteria for use, incorporating patient/family member perspectives, second medical opinion, insititional review and oversight, are important so that such policies are consistently used and fairly applied.

Research priorities

More research of the effects of insititional polcies is required to understand cost-effectiveness, impact on patient and family satisfaction, clinican burnout and moral distress.

1.4 Institutional policies to reduce futile or inappropriate treatments at end-of-life

References

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2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Evidence Summary

2.1 Should we recommend specific treatments to ensure delivery of effective symptom management for dying ICU patients?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	protocolized/ standardized approaches	usual care	Relative (95% CI)	Absolute (95% CI)		
Comparison: Algorithmic WLST vs. usual care												
Patient symptoms												
1	randomised trials	not serious	not serious	not serious	serious[a]	none	Patients had significantly less respiratory distress in the intervention arm, measured as mean Respiratory Distress Observation Scores, (F=10.41, p=0.0013, effective size [es]=0.49).				⨁⨁⨁◯ Moderate	CRITICAL
Duration of survival												
1	randomised trials	not serious	not serious	not serious	serious[a]	none	48	120	-	MD **16.5 hours lower** (30.82 lower to 2.18 lower)	⨁⨁⨁◯ Moderate	IMPORTANT
Opioid dose (assessed with: Morphine equivalents)												
1	randomised trials	not serious	not serious	not serious	serious[a]	none	48	120	-	MD **141 lower** (260.35 lower to 21.65 lower)	⨁⨁⨁◯ Moderate	IMPORTANT
Benzodiazepine dose (assessed with: Lorazepam equivalents)												
1	randomised trials	not serious	not serious	not serious	serious[a]	none	48	120	-	MD **3.6 lower** (6.99 lower to 0.21 lower)	⨁⨁⨁◯ Moderate	IMPORTANT
Comparison: Direct Extubation vs. Terminal Weaning												
Symptom management												
2	observational studies	not serious	serious[b]	not serious	not serious	none	301	279	-	MD **0.7 higher** (0.53 higher to 0.88 higher)	⨁◯◯◯ Very low	CRITICAL
Dose of opioids												
2	observational studies	not serious	not serious	not serious	not serious	none	191	275	-	SMD **0.36 lower** (0.55 lower to 0.18 lower)	⨁⨁◯◯ Low	IMPORTANT
Dose of hypnotics												
2	observational studies	not serious	not serious	not serious	not serious	none	176	265	-	SMD **0.22 lower** (0.41 lower to 0.03 lower)	⨁⨁◯◯ Low	IMPORTANT
Time until death after WLST												

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	protocolized/ standardized approaches	usual care	Relative (95% CI)	Absolute (95% CI)		
2	observational studies	not serious	not serious	not serious	not serious	none	232	294	-	MD **1.2 lower** (3.07 lower to 0.66 higher)	⨁⨁◯◯ Low	IMPORTANT
Family member PTSD symptoms												
1	observational studies	not serious	not serious	not serious	serious[c]	none	182	208	-	MD **1.4 lower** (4.8 lower to 2 higher)	⨁◯◯◯ Very low	IMPORTANT
Family member complicated grief symptoms												
1	observational studies	not serious	not serious	not serious	serious[c]	none	168	186	-	MD **1.3 lower** (4.39 lower to 1.79 higher)	⨁◯◯◯ Very low	IMPORTANT
Family member anxiety and depression symptoms												
1	observational studies	not serious	not serious	not serious	serious[c]	none	182	208	-	MD **0.4 higher** (1.26 lower to 2.06 higher)	⨁◯◯◯ Very low	IMPORTANT
Clinician job strain score												
1	observational studies	not serious	not serious	not serious	not serious	none	701	862	-	MD **0.27 lower** (0.44 lower to 0.11 lower)	⨁⨁◯◯ Low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **SMD:** standardised mean difference

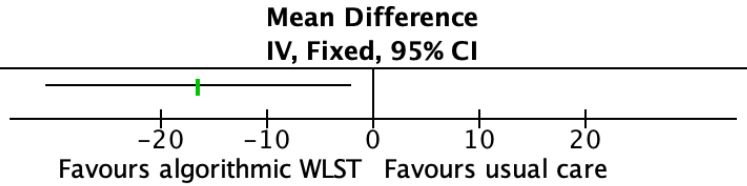
Explanations

a. Though statistically significant, optimal information size not met, resulting in some concerns regarding imprecision.
b. Statistically significant heterogeneity (I2=75%) resulting serious inconsistency.
c. Wide 95% confidence intervals which do not rule out a clinically meaningful difference between the groups.

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

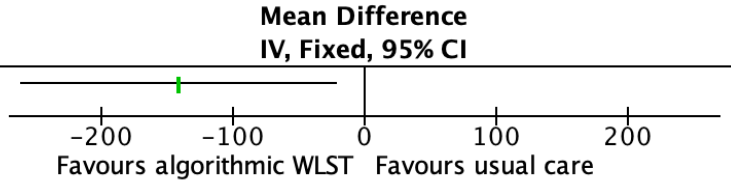
1. Algorithmic WLST vs. Usual Care: Duration of survival after WLST

Study or Subgroup	Algorithmic WLST Mean	SD	Total	Usual Care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Campbell 2023	12	35.9	48	28.5	56.4	120	−16.50 [−30.82, −2.18]



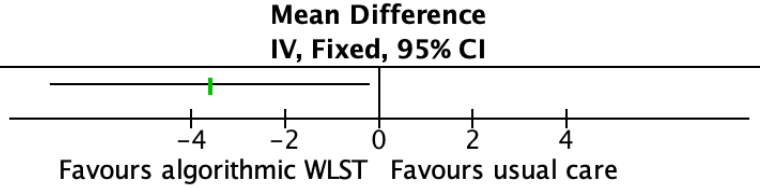
2. Algorithmic WLST vs. Usual Care: Dose of opioids (measured in morphine equivalents)

Study or Subgroup	Algorithmic WLST Mean	SD	Total	Usual Care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Campbell 2023	50	119	48	191	640	120	−141.00 [−260.35, −21.65]



3. Algorithmic WLST vs. Usual Care: Dose of hypnotics (measured in lorazepam equivalents)

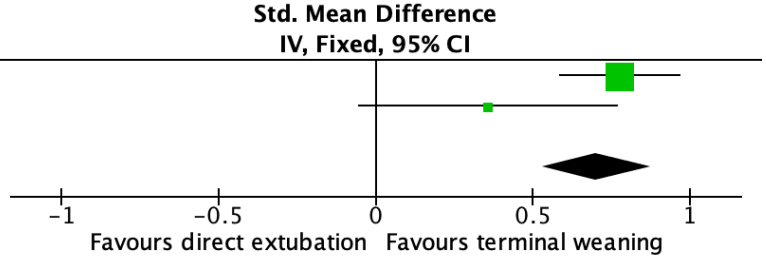
Study or Subgroup	Algorithmic WLST Mean	SD	Total	Usual Care Mean	SD	Total	Mean Difference IV, Fixed, 95% CI
Campbell 2023	1.3	4.4	48	4.9	17.6	120	−3.60 [−6.99, −0.21]



4. Direct Extubation vs. Terminal Weaning: Quality of Symptom Management (Measured using Behavioural Pain Scale, or Family Rating of Patient Comfort)

Study or Subgroup	Direct extubation Mean	SD	Total	Terminal weaning Mean	SD	Total	Weight	Std. Mean Difference IV, Fixed, 95% CI
Robert 2017	2.9	1.4	210	2	0.9	248	82.2%	0.78 [0.59, 0.97]
Rocker 2004	−2.85	0.97	91	−3.22	1.2	31	17.8%	0.36 [−0.05, 0.77]
Total (95% CI)			**301**			**279**	**100.0%**	**0.70 [0.53, 0.88]**

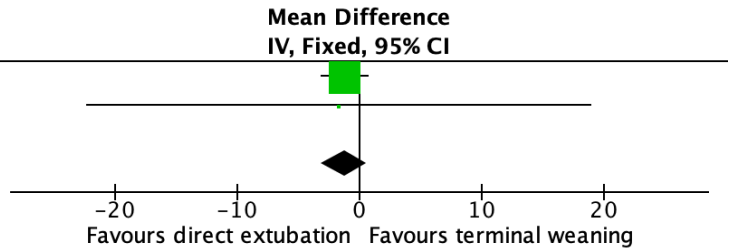
Heterogeneity: $Chi^2 = 3.33$, df = 1 (P = 0.07); $I^2 = 70\%$
Test for overall effect: Z = 7.96 (P < 0.00001)



5. Direct Extubation vs. Terminal Weaning: Duration of survival after WLST, measured in hours

	Direct extubation			Terminal weaning				Mean Difference	
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**Weight**	**IV, Fixed, 95% CI**	**Year**
Robert 2017	2.7	7.8	210	3.9	12.4	248	99.2%	−1.20 [−3.07, 0.67]	2017
Thellier 2017	0.32	4.4	22	2	71	46	0.8%	−1.68 [−22.28, 18.92]	2017
Total (95% CI)			**232**			**294**	**100.0%**	**−1.20 [−3.07, 0.66]**	

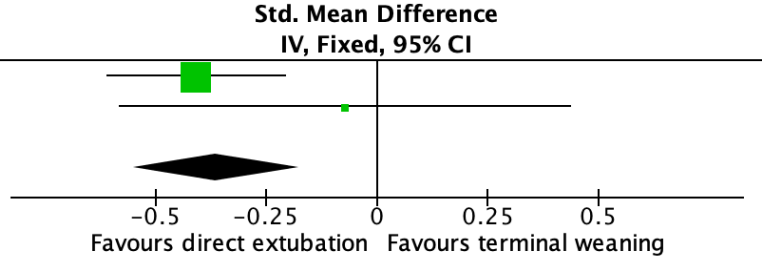
Heterogeneity: Chi² = 0.00, df = 1 (P = 0.96); I² = 0%
Test for overall effect: Z = 1.27 (P = 0.20)



6. Direct Extubation vs. Terminal Weaning: Dose of opioids

	Direct extubation			Terminal weaning				Std. Mean Difference
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**Weight**	**IV, Fixed, 95% CI**
Robert 2017	12.4	18.1	169	23.3	31.5	229	86.5%	−0.41 [−0.61, −0.21]
Thellier 2017	25	55.6	22	30	74	46	13.5%	−0.07 [−0.58, 0.44]
Total (95% CI)			**191**			**275**	**100.0%**	**−0.36 [−0.55, −0.18]**

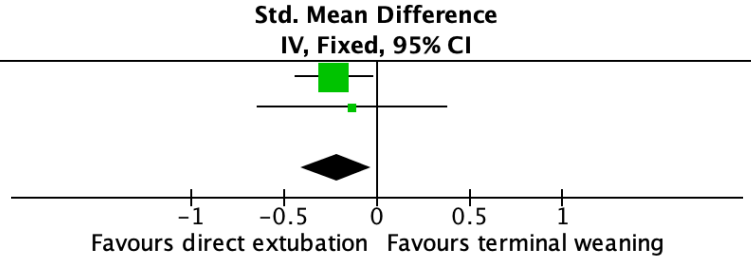
Heterogeneity: Chi² = 1.45, df = 1 (P = 0.23); I² = 31%
Test for overall effect: Z = 3.81 (P = 0.0001)



7. Direct Extubation vs. Terminal Weaning: Dose of hypnotics

	Direct extubation			Terminal weaning				Std. Mean Difference
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**Weight**	**IV, Fixed, 95% CI**
Robert 2017	23	49.6	154	40.2	86.8	219	85.8%	−0.23 [−0.44, −0.03]
Thellier 2017	60	148	22	80	148	46	14.2%	−0.13 [−0.64, 0.37]
Total (95% CI)			**176**			**265**	**100.0%**	**−0.22 [−0.41, −0.03]**

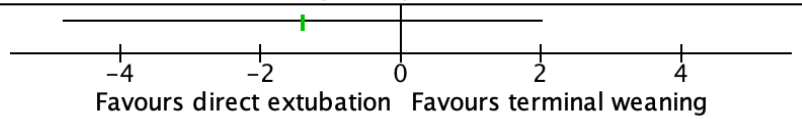
Heterogeneity: Chi² = 0.13, df = 1 (P = 0.72); I² = 0%
Test for overall effect: Z = 2.24 (P = 0.03)



2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

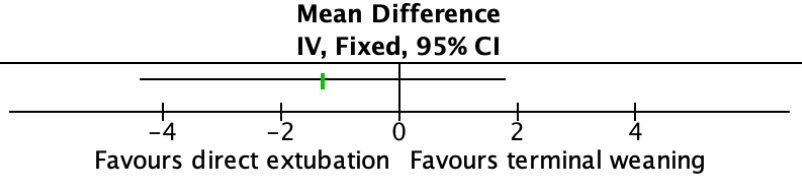
8. Direct Extubation vs. Terminal Weaning: Family member PTSD symptoms, measured with Impact of Events Scale-Revised (IES-R)

	Direct extubation			Terminal weaning			Mean Difference	Mean Difference
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**IV, Fixed, 95% CI**	**IV, Fixed, 95% CI**
Robert 2017	30.5	16.2	182	31.9	18.1	208	−1.40 [−4.80, 2.00]	



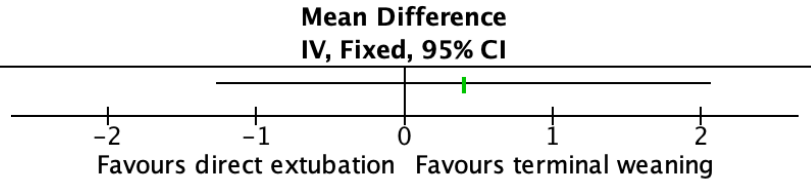
9. Direct Extubation vs. Terminal Weaning: Family member Complicated Grief Symptoms, Measured With Inventory of Complicated Grief (ICG)

	Direct extubation			Terminal weaning			Mean Difference	Mean Difference
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**IV, Fixed, 95% CI**	**IV, Fixed, 95% CI**
Robert 2017	22.4	14.6	168	23.7	15	186	−1.30 [−4.39, 1.79]	

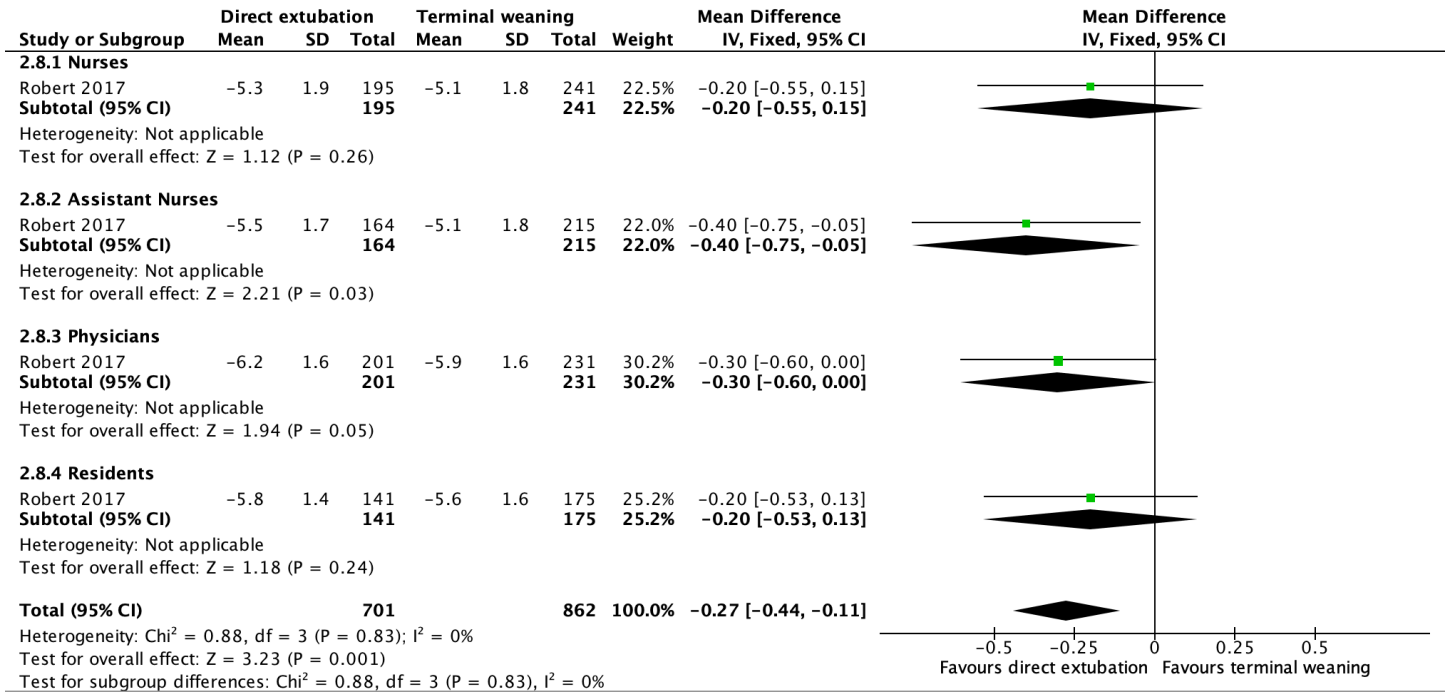


10. Direct Extubation vs. Terminal Weaning: Family member Anxiety and Depression Symptoms, measured with Hospital Anxiety and Depression Score (HADS)

	Direct extubation			Terminal weaning			Mean Difference	Mean Difference
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**IV, Fixed, 95% CI**	**IV, Fixed, 95% CI**
Robert 2017	12.8	8.4	182	12.4	8.3	208	0.40 [−1.26, 2.06]	



11. Direct Extubation vs. Terminal Weaning: Clinician Job Strain Score



2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Evidence-to-Decision Framework

QUESTION

Should protocolized/standardized approaches vs. usual care be used for adult ICU patients expected to die after withdrawal of life sustaining therapies or disease progression?	
POPULATION:	adult ICU patients expected to die after withdrawal of life sustaining therapies or disease progression
INTERVENTION:	protocolized/standardized approaches
COMPARISON:	usual care
MAIN OUTCOMES:	Patient symptoms ; Duration of survival; Opioid dose; Benzodiazepine dose; Symptom management; Dose of opioids; Dose of hypnotics; Time until death after WLST; Family member PTSD symptoms; Family member complicated grief symptoms; Family member anxiety and depression symptoms; Clinician job strain score;

ASSESSMENT

Problem

Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		Many patients in ICU die following withdrawal of life sustaining therapies (WLST), an aspect of end of life care which is uniquely common in ICUs. Ensuring patients are comfortable during and after WLST is important intrinsically as a reduction in suffering, but also for staff and families who are present at end of life. Staff may experience distress and burnout if caring for patients and unable to provide adequate symptom management. Additionally, poorly managed symptoms and WLST may result in longer ICU/hospital length of stay.

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Desirable Effects

How substantial are the desirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ○ Small ○ Moderate ● Large ○ Varies ○ Don't know	The use of a protocolized withdrawal of ventilator support resulted in better patient symptom management, as measured with RDOS, a lower amount of medications given, and less oxygen administration. Direct extubation (vs. terminal weaning) in the absence of protocolized WLST may result in fewer medications being used, and lower staff job strain score.	Some staff may value having protocols to follow and provide consistency. This may particularly be valued by new staff or staff with fewer supports (eg. night shift). Families may be reassured knowing that a standardized approach is used to address and manage patient symptoms during WLST. Family satisfaction was not reported; even if no difference in mental health symptoms with direct extubation vs. terminal weaning, there may be differences in satisfaction.

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ● Small ○ Moderate ○ Large ○ Varies ○ Don't know	Direct extubation (ie. no terminal weaning) in the absence of a protocolized WLST may result in worse symptom management.	Protocols may complicate care for some patients and staff who are already comfortable and confident in the care they provide. The use of terminal weaning protocols may be confusing to families as it can closely resemble weaning for purposes of long-term extubation as opposed to WLST.

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ○ Low ● Moderate ○ High ○ No included studies	Certainty of evidence is moderate for protocolized WLST vs. usual care. (Moderate) Certainty of evidence is low for direct extubation vs. terminal weaning, in absence of protocolized WLST. (Low)	

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ● Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		Some families may value higher sedation and more comfort while others may value lower sedation and patients being more awake.

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ● Favors the intervention ○ Varies ○ Don't know		Few downsides to protocolized WLST, and evidence that it results in better patient symptom management. Direct extubation vs. terminal weaning -- low certainty of which approach is better.

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ● Negligible costs and savings ○ Moderate savings ○ Large savings ○ Varies ○ Don't know		Implementing a protocol, educating staff, change management requires resources, but some of these costs may not be beyond usual staff training/updating. Patient level costs are not likely change substantially and may even be less (shorter length of stay, and fewer medications used).

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ○ Low ○ Moderate ○ High ● No included studies		

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies		

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Reduced ○ Probably reduced ○ Probably no impact ○ Probably increased ○ Increased ● Varies ○ Don't know		For some populations with distrust of healthcare systems, using protocolized approaches may help or hinder with end of life decision making and symptom management. Standardized approaches allow for equal symptom management by providing consistent assessment and management across individual patients. There may be a need to adjust protocols to meet individual patient, family, and staff needs.

Acceptability

Is the intervention acceptable to key stakeholders?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		As noted above, some families and staff may value having standardized approaches, while some others may not.

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		There are some complex patients for whom a standardized approach may not be feasible or make sense (eg. CV ICUs with LVADs, ECMO, etc.) However, for many patients on common forms of life support, a protocolized WLST is likely feasible.

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	Moderate	**Large**		Varies	Don't know
UNDESIRABLE EFFECTS	Trivial	**Small**	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	Low	**Moderate**	High			No included studies
VALUES	Important uncertainty or variability	**Possibly important uncertainty or variability**	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	**Favors the intervention**	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	**Negligible costs and savings**	Moderate savings	Large savings	Varies	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED	Very low	Low	Moderate	High			**No included studies**

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

	JUDGEMENT						
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	Probably increased	Increased	**Varies**	Don't know
ACCEPTABILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

CONCLUSIONS

Recommendation

We suggest using protocolized approaches to WLST and symptom management in ICU, including assessment and management of symptoms pre-extubation, during weaning, and after extubation. (conditional recommendation, moderate certainty evidence)

Justification

A protocolized withdrawal of life sustaining therapies appears to result in better symptom management for patients, without prolonging time until death, and resulting lower doses of medication being needed. We are uncertain as to the effects of direct extubation vs. terminal weaning, although if these are done in the context of protocolized approach, either may be appropriate as long as patient symptoms are managed in a protocolized approach as described above.

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

Subgroup considerations

There may be specific circumstances which require deviating from standard withdrawal of life support protocols, such as in the case of organ donation after neurologic or cardiocirculatory death, if this is consistent with patient and family wishes. High quality symptom management should be provided to all ICU patients after WLST, and a protocolized approach can facilitate this and can also be beneficial to donation. In the trial by Campbell and Yarandi (2023), the protocolized approach to WLST also resulted in shorter duration of survival after WLST, reducing the warm ischemic time which can be detrimental to donation. Our recommendation thus also applies to patients undergoing WLST for the purposes of donation.

Implementation considerations

The cluster RCT by Campbell and Yarandi (2023) used the RASS (pre-assessment) and RDOS scales; the latter measured at baseline, at time of removal of the ventilator, every 15 minutes for the first two hours. This approach is both feasible and has been demonstrated to be effective.

A wide variety of medications have been used to manage patient pain and symptoms during WLST. The most commonly reported sedative medications we identified in our literature review include benzodiazepines. These included midazolam (reported dose range 4 to 12 mg/mg/h), diazepam (mean dose 13.8 mg), and lorazepam (mean cumulative dose reported 3.22 mg), as well as propofol (reported dose range 186 mg/h, cumulative dose 800 mg). The most commonly reported pain medications we identified in our literature review include morphine (mean dose range 10.6 to 13.4 mg/h; cumulative doses range 24-58.5 mg) and fentanyl (median dose 100 ug/h; cumulative dose 200 mcg).

The variation in medication choices likely represent centre differences; we did not identify any studies which directly compared any medication or combination of medications. The specific choice of sedation and pain medications used may be chosen on the basis of an individual ICU's familiarity with the medication and its effects, in order to provide the most stable and predictable response to treatment in accordance with the protocolized approach to WLST. Many clinicians may find it convenient to continue the medications being used to provide sedation to facilitate mechanical ventilation.

2.1 Treatments for symptom management following withdrawal of life-sustaining therapies

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2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Evidence Summary

Question: Should interventions to address cultural, spiritual, and family traditions compared to usual care be used in adult ICU patients at end of life?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Intervention	usual care	Relative (95% CI)	Absolute (95% CI)		
Depression												
1	randomised trials	not serious	not serious	not serious	very serious[a,b]	none	67	61	-	MD **2.34 lower** (3.61 lower to 1.07 lower)	⨁⨁◯◯ Low	IMPORTANT
PTSD												
1	randomised trials	not serious	not serious	not serious	very serious[a,c]	none	67	61	-	MD **3.33 lower** (5.95 lower to 0.71 lower)	⨁⨁◯◯ Low	IMPORTANT
Anxiety												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	67	61	-	MD **2.34 lower** (4.21 lower to 0.47 lower)	⨁⨁◯◯ Low	IMPORTANT
Overall distress												
1	randomised trials	not serious	not serious	not serious	very serious[a,b]	none	67	61	-	MD **0.67 lower** (2.02 lower to 0.68 higher)	⨁⨁◯◯ Low	IMPORTANT
Spiritual well-being												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	67	61	-	MD **3.47 higher** (0.25 higher to 6.69 higher)	⨁⨁◯◯ Low	IMPORTANT
Positive religious coping												
1	randomised trials	not serious	not serious	not serious	very serious[a,b]	none	67	61	-	MD **2.17 higher** (0.87 lower to 5.21 higher)	⨁⨁◯◯ Low	IMPORTANT
Satisfaction with spiritual care												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	67	61	-	MD **0.46 higher** (0.25 higher to 0.67 higher)	⨁⨁◯◯ Low	IMPORTANT

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Intervention	usual care	Relative (95% CI)	Absolute (95% CI)		
Quality of communication												
1	randomised trials	not serious	not serious	not serious	very serious[a,c]	none	67	61	-	MD **0.33 higher** (0.99 lower to 1.65 higher)	⨁⨁◯◯ Low	IMPORTANT
Overall satisfaction												
1	randomised trials	not serious	not serious	not serious	very serious[a,c]	none	67	61	-	MD **0.33 higher** (0.35 lower to 1.01 higher)	⨁⨁◯◯ Low	IMPORTANT
Decisional conflict												
1	randomised trials	not serious	not serious	not serious	very serious[a,c]	none	67	61	-	MD **4.83 lower** (8.78 lower to 0.88 lower)	⨁⨁◯◯ Low	CRITICAL

CI: confidence interval; **MD:** mean difference

Explanations

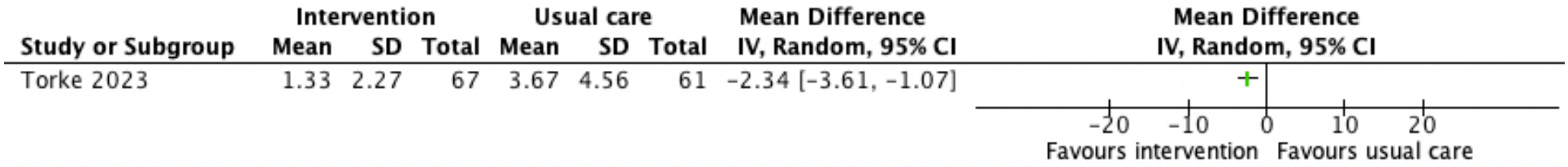
a. Evidence comes from a single small RCT, optimal information size not met

b. When assessing MCID between groups, wide 95% CIs and no longer significant

c. Multivariable adjusted analyses demonstrate no significant differences between groups

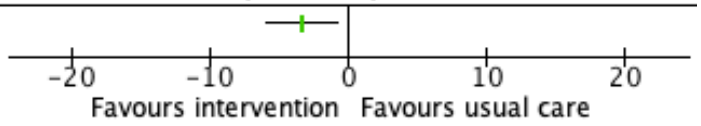
Forest Plots

1. Depression



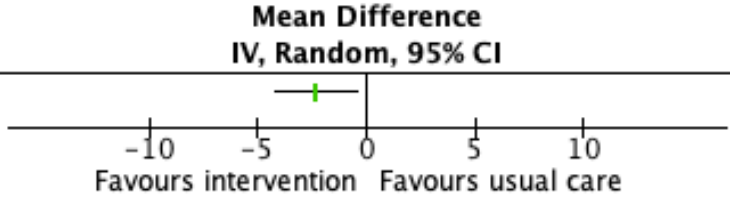
2. PTSD

Study or Subgroup	Intervention Mean	SD	Total	Usual Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	3.17	4.55	67	6.5	9.49	61	-3.33 [-5.95, -0.71]



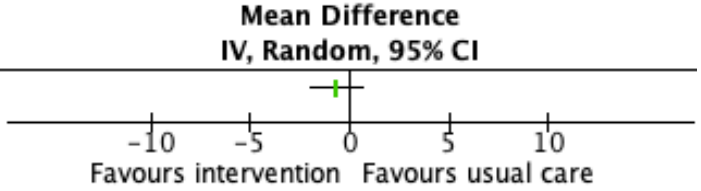
3. Anxiety

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	2.33	4.54	67	4.67	6.07	61	-2.34 [-4.21, -0.47]



4. Overall distress

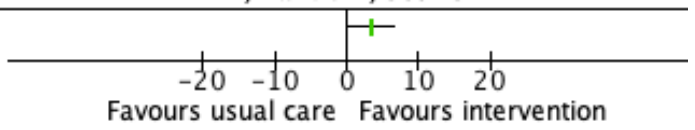
Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	2	3.03	67	2.67	4.56	61	-0.67 [-2.02, 0.68]



5. Spiritual well-being

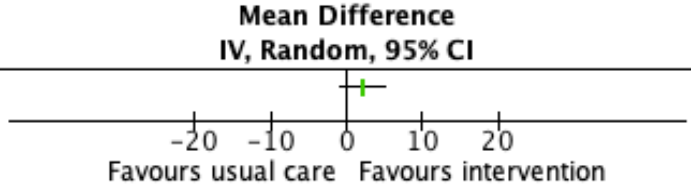
2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	42.3	7.58	67	38.83	10.61	61	3.47 [0.25, 6.69]



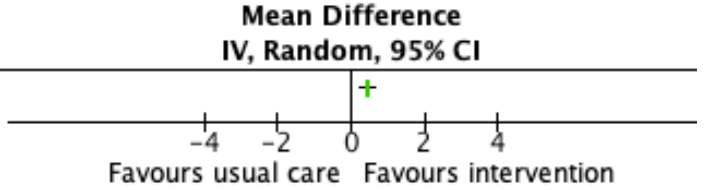
6. Positive religious coping

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	16.5	6.07	67	14.33	10.63	61	2.17 [-0.87, 5.21]



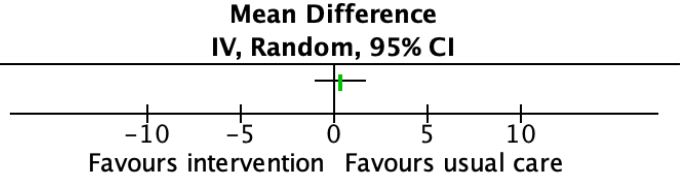
7. Satisfaction with spiritual care

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	3.36	0.58	67	2.9	0.63	61	0.46 [0.25, 0.67]



8. Quality of communication

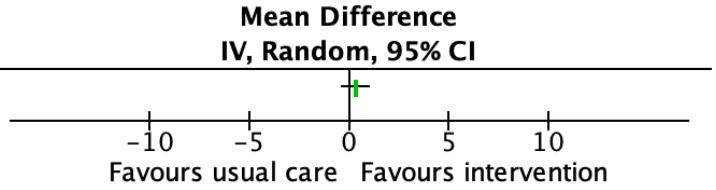
Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	21.33	3.79	67	21	3.8	61	0.33 [-0.99, 1.65]



2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

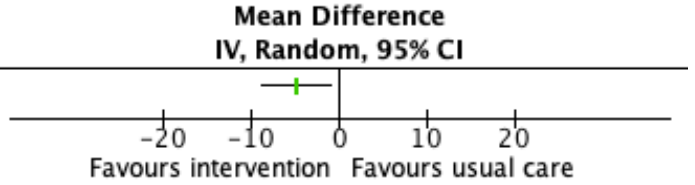
9. Overall satisfaction with hospital stay

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	9	1.52	67	8.67	2.28	61	0.33 [-0.35, 1.01]



10. Decisional conflict

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Mean Difference IV, Random, 95% CI
Torke 2023	24.17	11.36	67	29	11.39	61	-4.83 [-8.78, -0.88]



Narrative evidence

Outcome	Studies
Change in code status	-2 observational studies using culturally adapted palliative care consults showed increase numbers of change in code status to DNR
PTSD	-decrease in PTSD symptoms in families undergoing “Family Care Rituals” intervention
Family satisfaction	-increase in family satisfaction in families undergoing “Family Care Rituals” intervention
	3 Wishes Project – 3 observational studies evaluating the implementation of a program aimed at eliciting and fulfilling the wishes of dying patients, their loved ones, and clinicians

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Evidence-to-Decision Framework

QUESTION

Should interventions to address cultural, spiritual, and family traditions vs. usual care be used for adult ICU patients at end of life?	
POPULATION:	adult ICU patients at end of life
INTERVENTION:	interventions to address cultural, spiritual, and family traditions
COMPARISON:	usual care
MAIN OUTCOMES:	Depression; PTSD; Anxiety; Overall distress; Spiritual well-being; Positive religious coping; Satisfaction with spiritual care; Quality of communication; Overall satisfaction; Decisional conflict;

ASSESSMENT

Problem

Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Desirable Effects

How substantial are the desirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ● Small ○ Moderate ○ Large ○ Varies ○ Don't know	**Outcomes at follow-up (statistically significant):** -Decreased depression symptoms -Decreased post-traumatic stress scores -Improved spiritual well-being -Improved satisfaction with spiritual care -Decreased decisional conflict **Adjusted outcomes for a change in MCID (statistically significant):** -Decreased anxiety with OR 3.11 -Improved spiritual well-being with OR 3.79 **Adjusted analysis of variable with no baseline score (statistically significant):** -Improved satisfaction with spiritual care	

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Trivial ○ Small ○ Moderate ○ Large ○ Varies ○ Don't know	None directly from the research.	

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Very low ○ Low ○ Moderate ○ High ○ No included studies	only one RCT (n=128 patient/family dyads; 67 surrogates completed intervention group and 61 surrogates completed usual care group)	

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ○ Possibly important uncertainty or variability ● Probably no important uncertainty or variability ○ No important uncertainty or variability	Limited data available.	Patients and families for whom these interventions are not desired or valued can opt out.

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ● Favors the intervention ○ Varies ○ Don't know		No negative effects noted in the single included study. Narrative evidence also suggests net positive effects.

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ● Varies ○ Don't know		Unit chaplains available on study units already; study employed specific study chaplains. No comments on additional resources that may be required for this potentially more comprehensive intervention. Potentially more costly for sites which do not have spiritual care/chaplains already available.

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ○ Low ○ Moderate ○ High ● No included studies		

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ● Varies ○ No included studies		Study discusses that spiritual care services are not direct-bill services, they are a cost center; therefore more likely to be effected when cost cutting measures are in place. This study demonstrates the benefits of spiritual care, which is important for healthcare and the spiritual care profession.

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Reduced ○ Probably reduced ○ Probably no impact ● Probably increased ○ Increased ○ Varies ○ Don't know	78% of participants were white, followed by 20% black, and very small proportions of Asian and Hispanic. Intervention developed by diverse interdisciplinary team with varying racial and religious identities. Intervention aimed to be culturally sensitive and include surrogates who were both religious and non-religious. Study chaplains were 3 women, 2 men; 4 Protestant, 1 Jewish; 4 white, 1 black	Low representation of faiths other than Christianity and few Asian or Latino participants. The included study had more to do with spiritual and religious beliefs, and less to do with cultural beliefs. Likely to increase equity by addressing the spiritual and religious needs of local patient populations.

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

Acceptability Is the intervention acceptable to key stakeholders?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		

Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		There may be some variability in terms of availabilty of spiritual care supports, but most moderate-sized ICUs are likely to have a person in this role.

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	**Small**	Moderate	Large		Varies	Don't know
UNDESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	**Very low**	Low	Moderate	High			No included studies
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	**Probably no important uncertainty or variability**	No important uncertainty or variability			

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

	JUDGEMENT						
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	**Favors the intervention**	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	**Varies**	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED	Very low	Low	Moderate	High			**No included studies**
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	**Varies**	No included studies
EQUITY	Reduced	Probably reduced	Probably no impact	**Probably increased**	Increased	Varies	Don't know
ACCEPTABILITY	No	Probably no	Probably yes	**Yes**		Varies	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

2.2 Interventions to address cultural, spiritual, and family traditions at end-of-life

CONCLUSIONS

Recommendation

ICU clinicians should explore and support patient and family cultural, spiritual, and family traditions at end of life. (Good practice statement)

We suggest using a semi-structured approach to supporting patients and families and addressing spiritual care needs including an introductory meeting, weekly follow-up, and post-hospital follow-up.. (conditional recommendation, low certainty evidence)

Justification

There is low certainty evidence that using a semistructured approach to spiricual care results in net benefits to patients and families with regard to symptoms of anxiety, spiritual well being, and satisfaction with care. There are few downsides and many ICUs already have people who provide spiritual care to patients and families, meaning this approach is likely feasible; variations in institutional resources and the costs of hiring practitioners may affect the ability to implement the intervention.

Research priorities

- more research needed to identify optimal delivery of spiritual care using structured/semistructured approaches

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2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Evidence Summary

Palliative Care Consultation - RCTs

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Palliative Care Consult	Usual Care	Relative (95% CI)	Absolute (95% CI)		
Quality of communication - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a]	none	11	11	-	SMD **0.46 lower** (1.31 lower to 0.39 higher)	⨁⨁◯◯ Low	CRITICAL
Decisional conflict - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a]	none	11	11	-	MD **14 higher** (2.35 higher to 25.65 higher)	⨁⨁◯◯ Low	CRITICAL
Patient satisfaction with care - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a]	none	19	9	-	MD **23 lower** (30.24 lower to 15.76 lower)	⨁⨁◯◯ Low	IMPORTANT
Family satisfaction with care - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a]	none	9	6	-	SMD **2.05 lower** (3.39 lower to 0.71 lower)	⨁⨁◯◯ Low	IMPORTANT
Mental health symptoms- anxiety - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a]	none	11	11	-	MD **4.5 lower** (5.91 lower to 3.09 lower)	⨁⨁◯◯ Low	IMPORTANT
Mental health symptoms - depression - Palliative care consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a]	none	11	11	-	MD **3.5 lower** (7.58 lower to 0.58 higher)	⨁⨁◯◯ Low	IMPORTANT

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Mental health symptoms - PTS - Palliative care consultation - RCT

1 RCT	not serious	not serious	not serious	very serious[a]	none	11	11	-	SMD **3.05 lower** (4.35 lower to 1.75 lower)	⨁⨁◯◯ Low	IMPORTANT

Decisions to limit treatments - Palliative care consultation- RCT

3 RCTs	not serious	not serious	not serious	not serious	none	82/158 (51.9%)	40/154 (26.0%)	**RR 0.65** (0.54 to 0.79)	**91 fewer per 1,000** (from 119 fewer to 55 fewer)	⨁⨁⨁⨁ High	IMPORTANT

Mortality - Palliative care consultation - RCT

3 RCTs	not serious	not serious	not serious	serious[b]	none	52/158 (32.9%)	56/154 (36.4%)	**RR 0.89** (0.53 to 1.49)	**40 fewer per 1,000** (from 171 fewer to 178 more)	⨁⨁⨁◯ Moderate	IMPORTANT

ICU length of stay - Palliative care consultation - RCTs

3 RCTs	not serious	not serious	not serious	serious[b]	none	158	154	-	MD **1.51 lower** (4.26 lower to 1.24 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

Hospital length of stay - Palliative care consultation - RCT

1 RCT	not serious	not serious	not serious	serious[b]	none	97	102	-	MD **1 lower** (3.29 lower to 1.29 higher)	⨁⨁⨁◯ Moderate	IMPORTANT

Hospital costs - Palliative care consultation - RCT

1 RCT	not serious	not serious	not serious	serious[b]	none	97	102	-	SMD **0** (0 to 0)	⨁◯◯◯ Very low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

a. All data comes from a single small trial, with optimal information size not met, resulting in very serious imprecision.
b. Wide 95% confidence intervals which do not rule out clinically meaningful benefit nor harm.

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Palliative Care Consultation - observational studies

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Palliative Care Consult	Usual Care	Relative (95% CI)	Absolute (95% CI)		
Decisions to limit treatments - Palliative care consultation - observational											
8 obs studies	not serious	not serious[b]	not serious	not serious	none	1039/1190 (87.3%)	875/1317 (66.4%)	**RR 0.31** (0.15 to 0.64)	**458 fewer per 1,000** (from 565 fewer to 239 fewer)	⨁⨁◯◯ Low	IMPORTANT
Mortality - Palliative care consultation - observational											
14 obs studies	not serious	serious[d]	not serious	serious[c]	none	1214/2453 (49.5%)	1254/10781	**RR 1.87** (1.13 to 3.08)	**101 more per 1,000** (from 15 more to 242 more)	⨁◯◯◯ Very low	IMPORTANT
ICU length of stay - Palliative care consultation - observational studies											
4 obs studies	not serious	serious[d]	not serious	serious[c]	none	258	727	-	MD **3.25 lower** (7.76 lower to 1.26 higher)	⨁◯◯◯ Very low	IMPORTANT
Hospital length of stay - Palliative care consultation - observational studies											
6 obs studies	not serious	serious[d]	not serious	serious[c]	none	389	1120	-	MD **0.49 days lower** (10.34 lower to 9.36 higher)	⨁◯◯◯ Very low	IMPORTANT
Nonbeneficial treatment - ICU length of stay - Palliative care consultation - observational											
1 obs studies	not serious	not serious	not serious	serious[a]	none	107	96	-	MD **4 lower** (5.87 lower to 2.13 lower)	⨁◯◯◯ Very low	IMPORTANT
Nonbeneficial treatment - hospital days - Palliative care consultation- observational											
2 obs studies	not serious	not serious	not serious	not serious	none	15477	30594	-	MD **1.12 lower** (1.42 lower to 0.82 lower)	⨁⨁◯◯ Low	IMPORTANT
Hospital costs - Palliative care consultation - observational											

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

3 obs studies	not serious	not serious	not serious	serious[c]	none	16078	31639	-	SMD **0.06 lower** (0.12 lower to 0)	⨁◯◯◯ Very low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

a. All data comes from a single small trial, with optimal information size not met, resulting in very serious imprecision.
b. Although there is substantial statistical heterogeneity (I2 >60%), all studies demonstrate the same direction of effect.
c. Wide 95% confidence intervals which do not rule out clinically meaningful benefit nor harm.
d. Very serious statistical heterogeneity (I2>60%) with studies demonstrating markedly different directions of effects, resulting in serious inconsistency.

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Spiritual Care Consultation - RCTs

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Spiritual Care Consultation	Usual Care	Relative (95% CI)	Absolute (95% CI)		
Quality of communication - Spiritual Care Consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a,b]	none	97	91	-	SMD **0** (0.29 lower to 0.29 higher)	⨁⨁◯◯ Low	CRITICAL
Decisional conflict - Spiritual Care Consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a,b]	none	97	91	-	MD **4.1 lower** (4.84 lower to 3.36 lower)	⨁⨁◯◯ Low	CRITICAL
Family satisfaction with care - Spiritual Care Consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a,b]	none	97	91	-	SMD **1.49 higher** (1.17 higher to 1.82 higher)	⨁⨁◯◯ Low	IMPORTANT
Mental health symptoms- anxiety - Spiritual Care Consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a,b]	none	97	91	-	MD **4.1 lower** (4.77 lower to 3.43 lower)	⨁⨁◯◯ Low	IMPORTANT
Mental health symptoms - PTS - Spiritual Care Consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a,b]	none	97	91	-	SMD **1.74 lower** (2.08 lower to 1.4 lower)	⨁⨁◯◯ Low	IMPORTANT
Mortality - Spiritual Care Consultation - RCT											
1 RCT	not serious	not serious	not serious	very serious[a,b]	none	22/97 (22.7%)	18/91 (19.8%)	**RR 1.15** (0.66 to 1.99)	**30 more per 1,000** (from 67 fewer to 196 more)	⨁⨁◯◯ Low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

a. Wide 95% confidence intervals which do not rule out clinically meaningful benefit nor harm.
b. Multivariable adjusted analyses demonstrate no significant differences between groups

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Psychologist Consultation - observational studies

Certainty assessment						№ of patients		Effect		Certainty	Importance
№ of studies	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Psychologist Consult	usual care	Relative (95% CI)	Absolute (95% CI)		
Mental health symptoms - PTS - Psychologist consultation - observational											
1 obs study	not serious	not serious	not serious	not serious	none	123	86	-	SMD **0.42 lower** (0.7 lower to 0.15 lower)	⨁⨁◯◯ Low	IMPORTANT
ICU length of stay - Psychologist consultation - observational											
1 obs study	not serious	not serious	not serious	serious[a]	none	123	86	-	MD **2.3 lower** (5.55 lower to 0.95 higher)	⨁◯◯◯ Very low	IMPORTANT
Hospital length of stay - Psychologist consultation - observational											
1 obs study	not serious	not serious	not serious	serious[a]	none	123	86	-	MD **0.8 lower** (7.25 lower to 5.65 higher)	⨁◯◯◯ Very low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

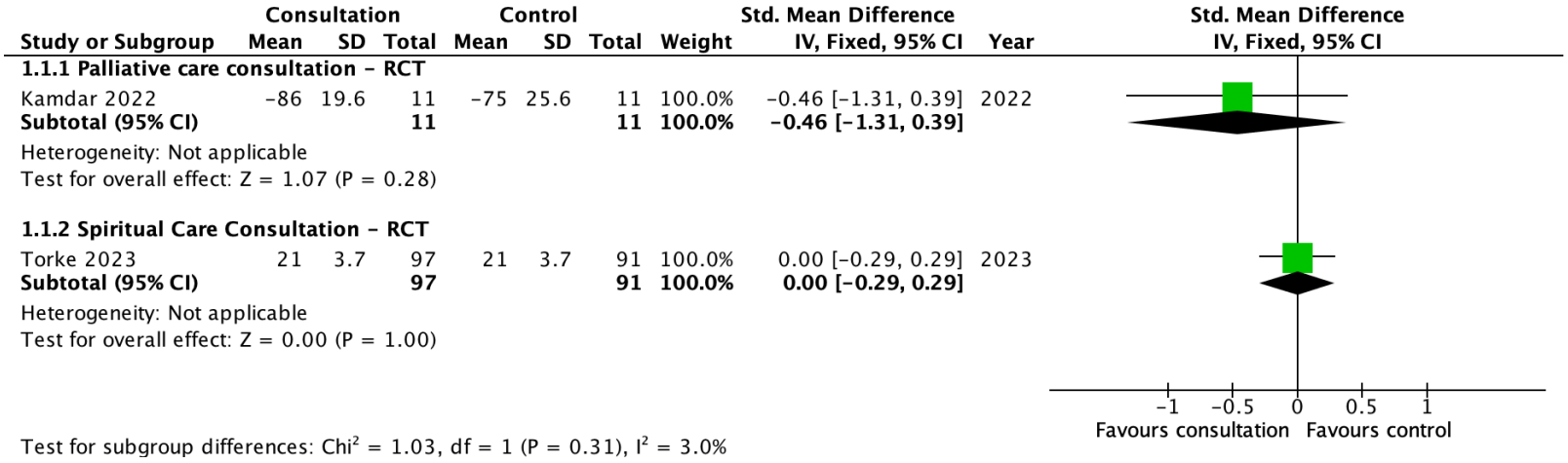
Explanations

a. Wide 95% confidence intervals which do not rule out clinically meaningful benefit nor harm.

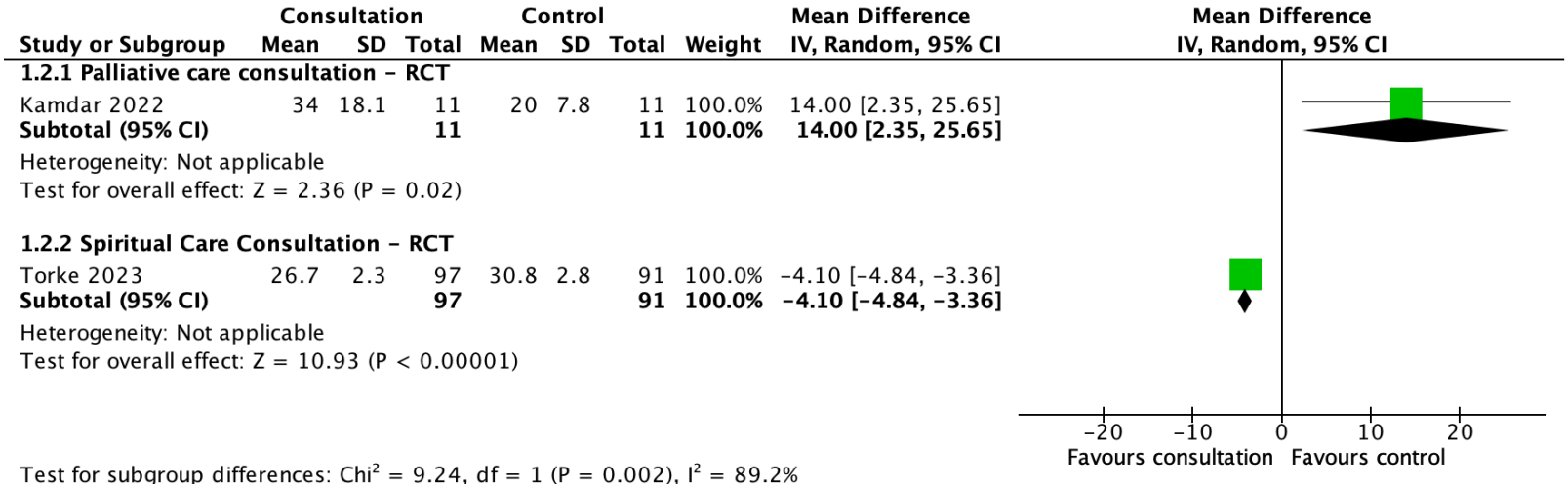
2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Forest plots

1. Quality of communication, measured with Questionnaire on Communication or Decision-Making Domain of FS-ICU

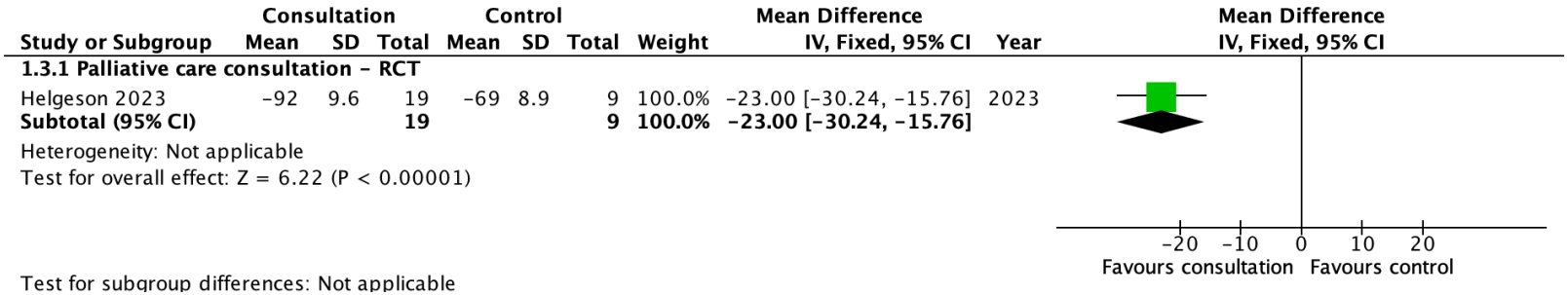


2. Decisional Conflict, Family - measured with decisional conflict scale

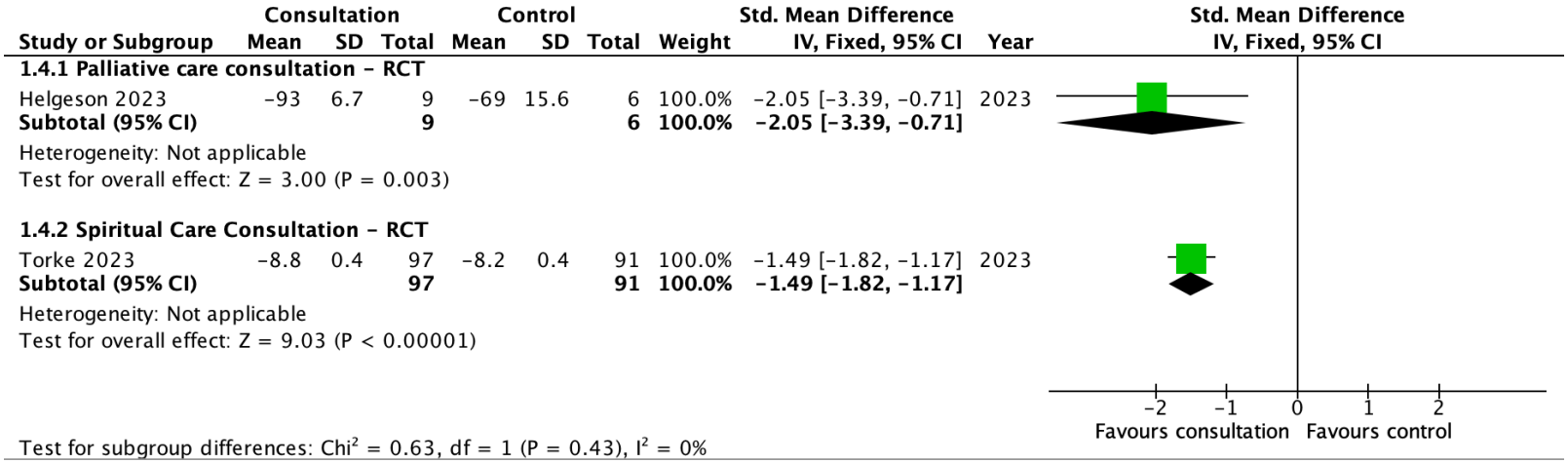


2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

3. Patient satisfaction with care, measured with FS-ICU

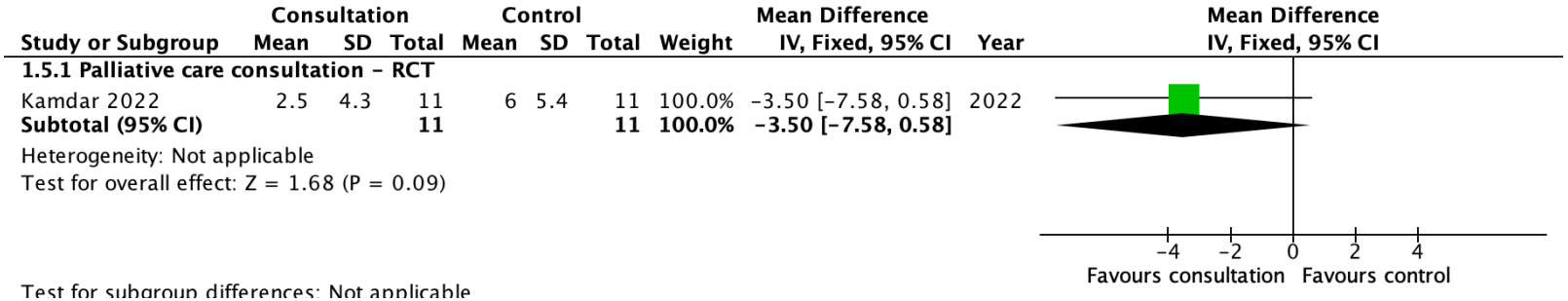


4. Family satisfaction with care, measured with FS-ICU or 10 point Likert scale

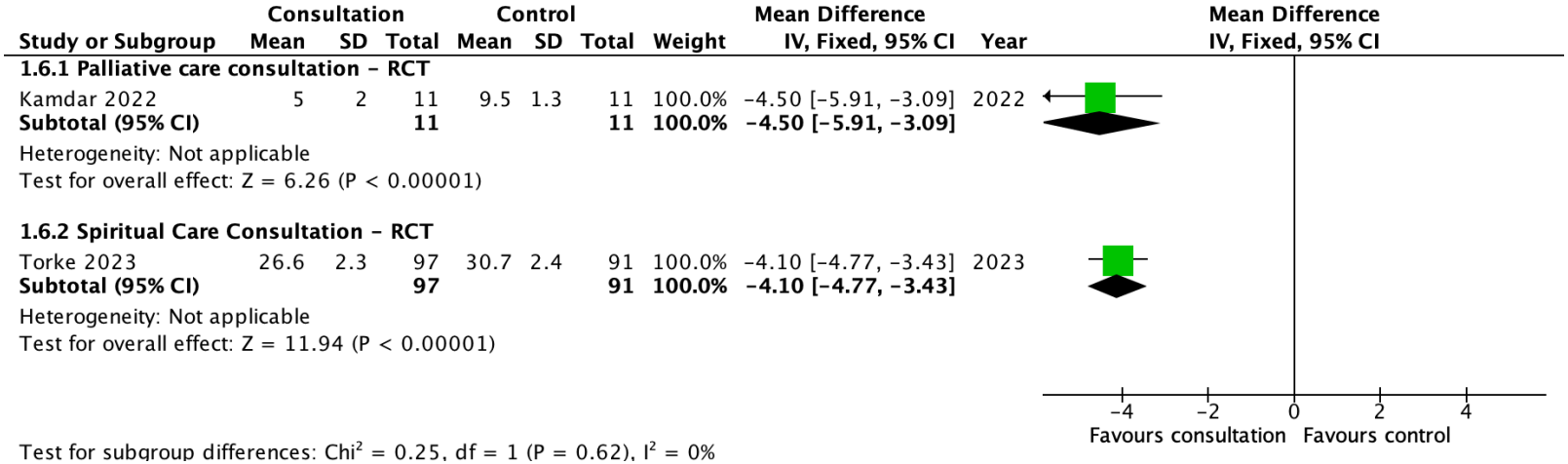


2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

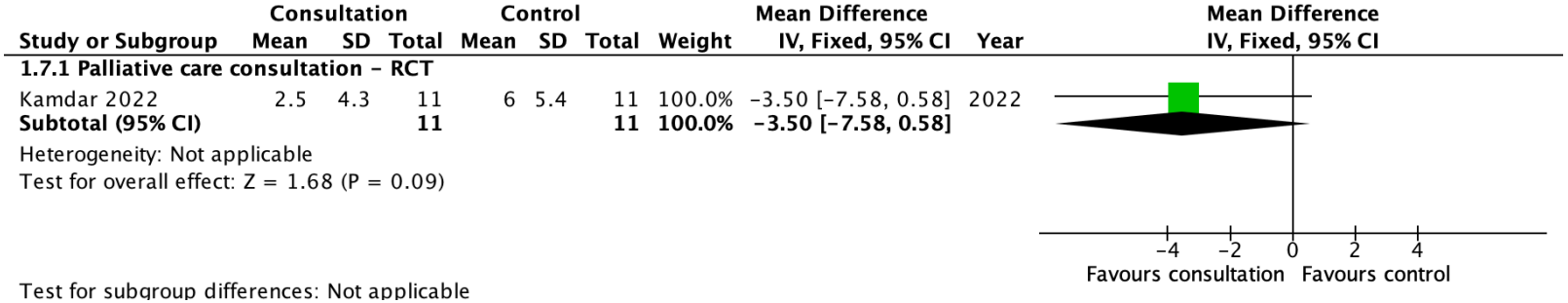
5. Family mental health symptoms - anxiety and depression, measured with HADS



6. Family mental health symptoms - anxiety, measured with HADS, anxiety sub scale or GAD-7

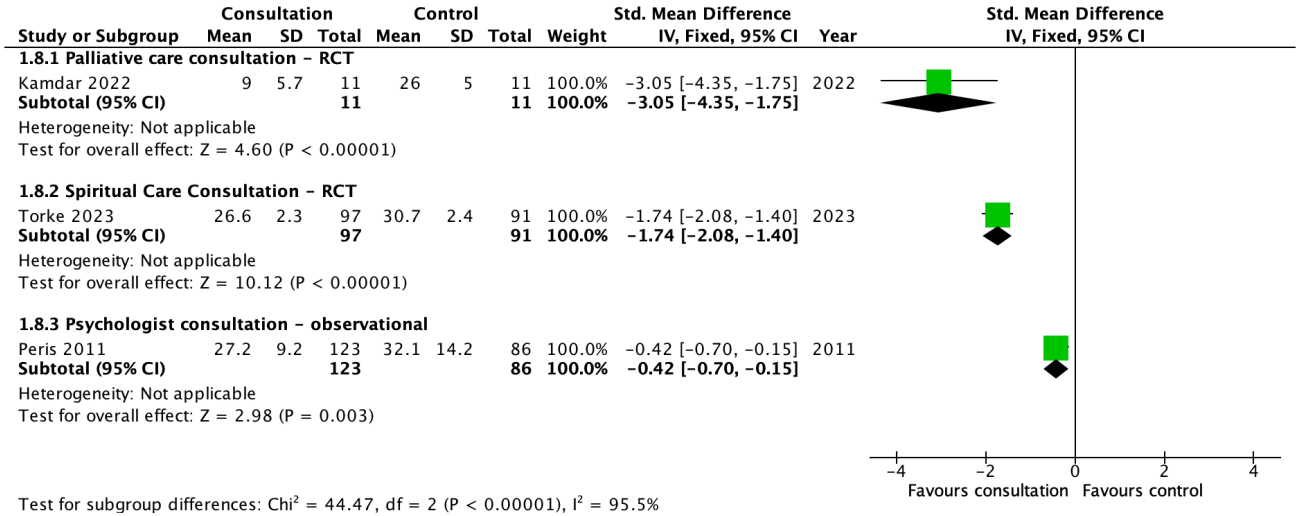


7. Family mental health symptoms - depression, measured with HADS, depression sub scale



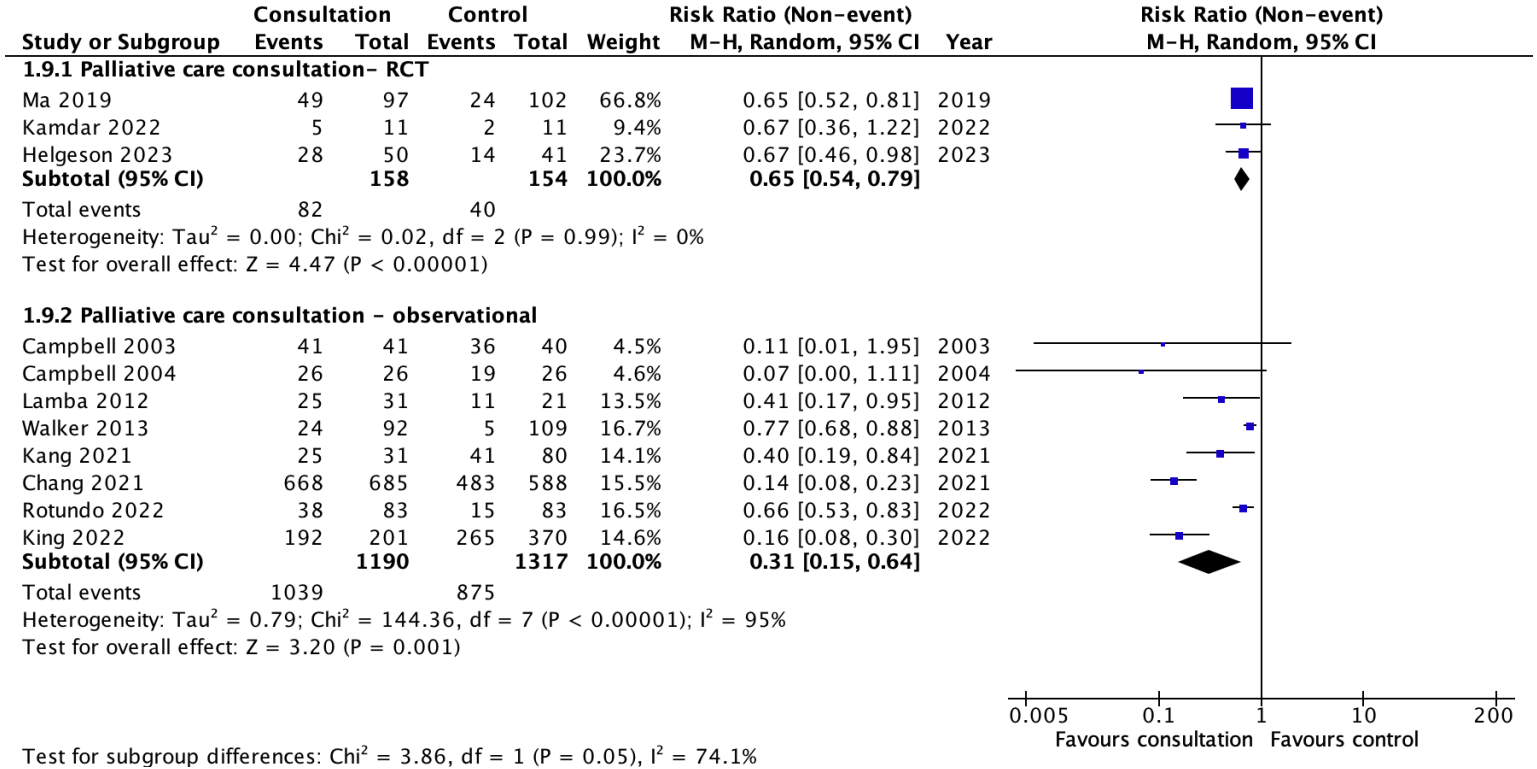
2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

8. Family mental health symptoms - post traumatic stress, measured with Impact of Events Scale or Post-Traumatic Stress Disorder Checklist



Test for subgroup differences: $Chi^2 = 44.47$, df = 2 (P < 0.00001), $I^2 = 95.5\%$

9. Decisions to limit treatments (withholding or withdrawing treatments)



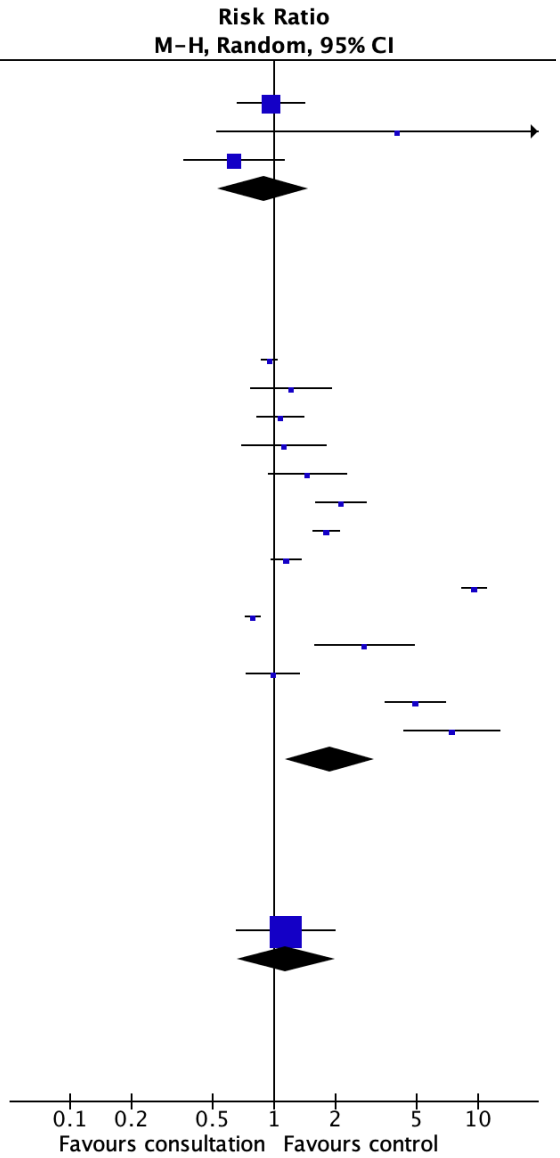
Test for subgroup differences: $Chi^2 = 3.86$, df = 1 (P = 0.05), $I^2 = 74.1\%$

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

10. Patient mortality at longest follow-up

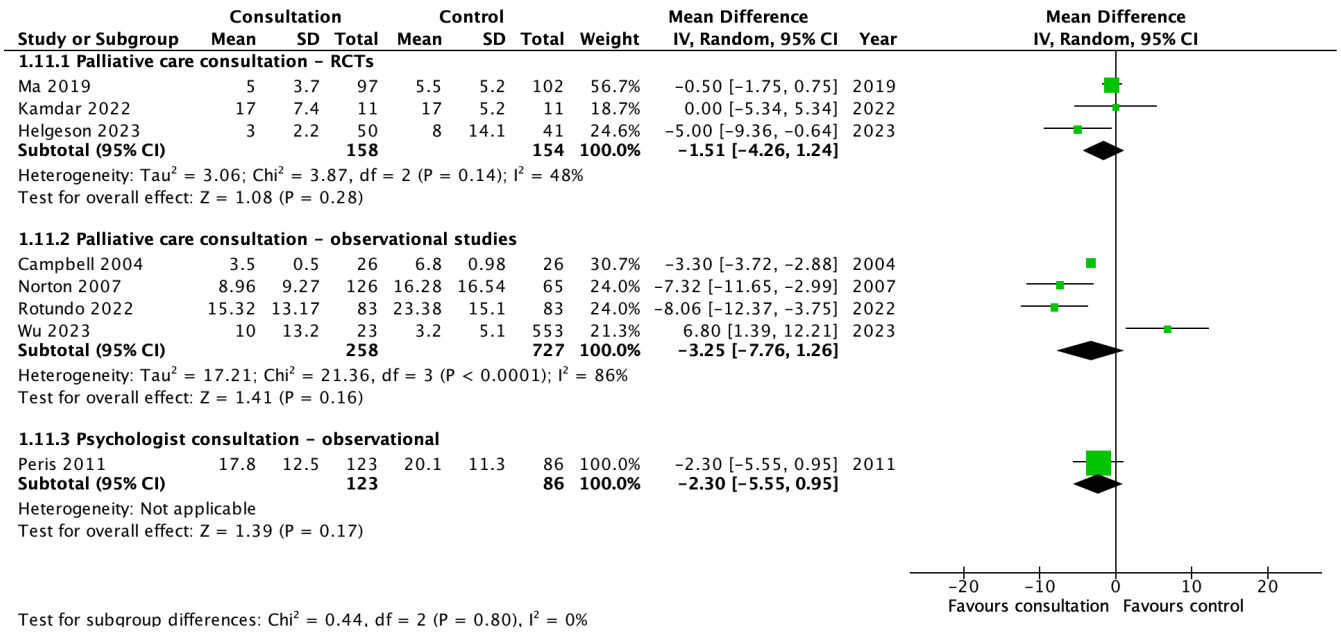
Study or Subgroup	Consultation Events	Consultation Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
1.10.1 Palliative care consultation - RCT							
Ma 2019	34	97	37	102	54.2%	0.97 [0.67, 1.40]	2019
Kamdar 2022	4	11	1	11	6.0%	4.00 [0.53, 30.33]	2022
Helgeson 2023	14	50	18	41	39.8%	0.64 [0.36, 1.12]	2023
Subtotal (95% CI)		**158**		**154**	**100.0%**	**0.89 [0.53, 1.49]**	
Total events	52		56				
Heterogeneity: $Tau^2 = 0.09$; $Chi^2 = 3.67$, df = 2 (P = 0.16); $I^2 = 45\%$							
Test for overall effect: Z = 0.44 (P = 0.66)							
1.10.2 Palliative care consultation - observational							
Campbell 2003	38	40	41	41	7.4%	0.95 [0.87, 1.03]	2003
Campbell 2004	17	26	14	26	7.0%	1.21 [0.77, 1.91]	2004
Norton 2007	75	126	36	65	7.2%	1.07 [0.83, 1.40]	2007
Lamba 2012	31	104	21	79	6.9%	1.12 [0.70, 1.79]	2012
Walker 2013	32	92	26	109	7.0%	1.46 [0.94, 2.26]	2013
Sheehan 2020	49	59	36	92	7.2%	2.12 [1.60, 2.81]	2020
Chang 2021	362	685	172	588	7.3%	1.81 [1.56, 2.09]	2021
Kang 2021	28	31	63	80	7.3%	1.15 [0.98, 1.35]	2021
Chung 2022	284	739	332	8252	7.3%	9.55 [8.31, 10.98]	2022
King 2022	152	201	355	370	7.4%	0.79 [0.73, 0.85]	2022
Rotundo 2022	36	83	13	83	6.8%	2.77 [1.59, 4.83]	2022
Shemme 2022	56	144	51	130	7.2%	0.99 [0.74, 1.33]	2022
Wu 2023	16	23	78	553	7.1%	4.93 [3.51, 6.93]	2023
Nomitch 2024	38	100	16	313	6.8%	7.43 [4.34, 12.74]	2024
Subtotal (95% CI)		**2453**		**10781**	**100.0%**	**1.87 [1.13, 3.08]**	
Total events	1214		1254				
Heterogeneity: $Tau^2 = 0.89$; $Chi^2 = 1373.37$, df = 13 (P < 0.00001); $I^2 = 99\%$							
Test for overall effect: Z = 2.43 (P = 0.01)							
1.10.3 Spiritual Care Consultation - RCT							
Torke 2023	22	97	18	91	100.0%	1.15 [0.66, 1.99]	2023
Subtotal (95% CI)		**97**		**91**	**100.0%**	**1.15 [0.66, 1.99]**	
Total events	22		18				
Heterogeneity: Not applicable							
Test for overall effect: Z = 0.48 (P = 0.63)							

Test for subgroup differences: $Chi^2 = 4.19$, df = 2 (P = 0.12), $I^2 = 52.2\%$

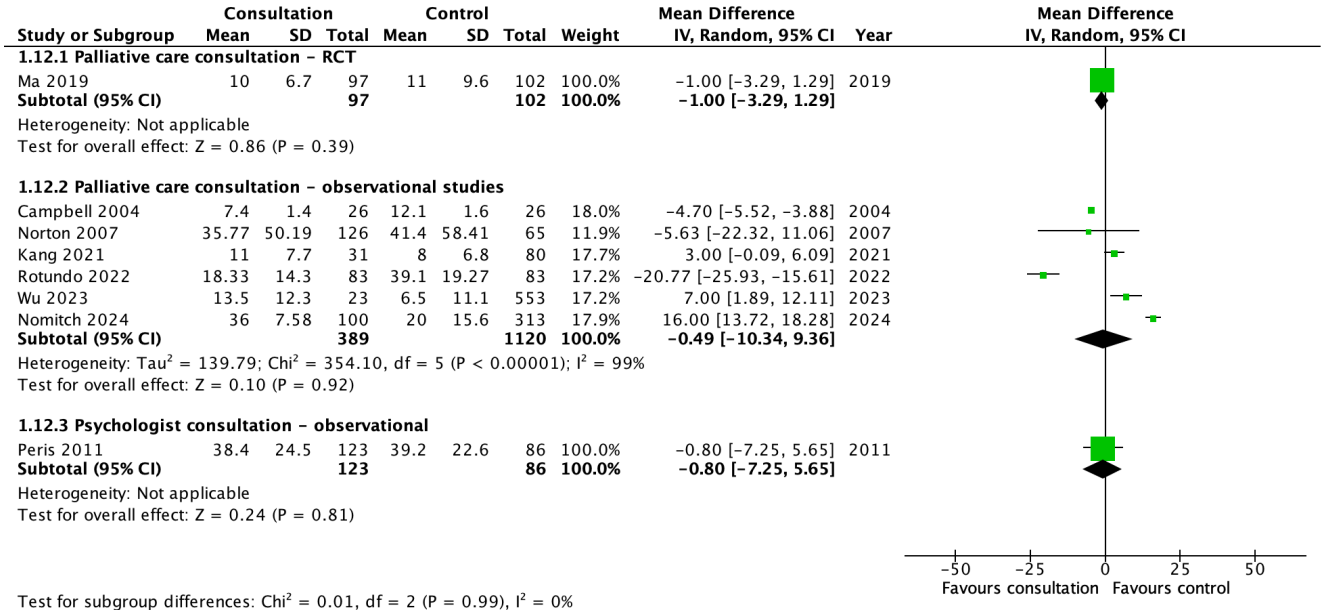


2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

11. ICU length of stay



12. Hospital length of stay



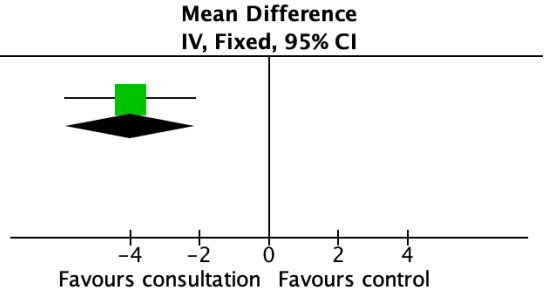
2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

13. Non-beneficial treatment, ICU length of stay in patients who died

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.13.1 Palliative care consultation – observational									
Golob 2022	0	3	107	4	8.9	96	100.0%	-4.00 [-5.87, -2.13]	2022
Subtotal (95% CI)			**107**			**96**	**100.0%**	**-4.00 [-5.87, -2.13]**	

Heterogeneity: Not applicable
Test for overall effect: Z = 4.19 (P < 0.0001)

Test for subgroup differences: Not applicable

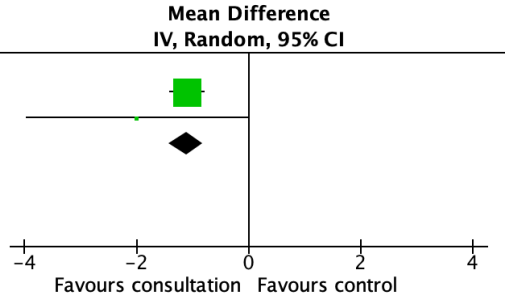


14. Non-beneficial treatment, hospital length of stay in patients who died

Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.14.2 Palliative care consultation– observational									
Maley 2020	12	15.4736	15370	13.1	15.4736	30498	97.7%	-1.10 [-1.40, -0.80]	2020
Golob 2022	8	5.6	107	10	8.3	96	2.3%	-2.00 [-3.97, -0.03]	2022
Subtotal (95% CI)			**15477**			**30594**	**100.0%**	**-1.12 [-1.42, -0.82]**	

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.78$, df = 1 (P = 0.38); $I^2 = 0\%$
Test for overall effect: Z = 7.40 (P < 0.00001)

Test for subgroup differences: Not applicable



15. Hospital costs

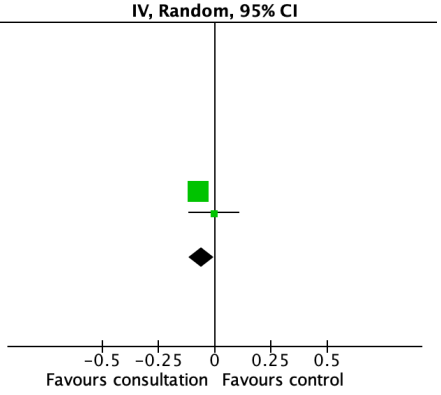
Study or Subgroup	Consultation Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
1.15.1 Palliative care consultation – RCT									
Ma 2019	37,310	0	97	45,790	0	102		Not estimable	2019
Subtotal (95% CI)			**97**			**102**		**Not estimable**	

Heterogeneity: Not applicable
Test for overall effect: Not applicable

1.15.2 Palliative care consultation – observational									
Maley 2020	68,200	113,472.9385	15370	76,600	113,472.9385	30498	80.3%	-0.07 [-0.09, -0.05]	2020
Chang 2021	293,169	350,043	685	294,161	315,276	588	19.7%	-0.00 [-0.11, 0.11]	2021
Wu 2023	390,266.76	0	23	170,256.11	0	553		Not estimable	2023
Subtotal (95% CI)			**16078**			**31639**	**100.0%**	**-0.06 [-0.12, -0.00]**	

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 1.55$, df = 1 (P = 0.21); $I^2 = 35\%$
Test for overall effect: Z = 2.13 (P = 0.03)

Test for subgroup differences: Not applicable



2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Narrative Evidence

Theme/topic	Findings	Sources
Impact of spiritual care on length of stay	• Spiritual care involvement is associated with longer length of stay in one study, but the cause of this association was unclear • Patients randomized to spiritual care consultation had a lower length of ICU and hospital stay	Labuscagne 2021 Torke 2023
Spiritual care consult timing	• Median from ICU admission to chaplain was 2 days; chaplain visitation was median 1 day before death or ICU discharge	Choi 2015
Aspects of chaplaincy	• Comfort at end of life; prayers; support decision-making; connection to resources	McCurry 2011
Psychologists	• In-ICU psychologist involvement may result in improved scores in HADS (anxiety and depression) and improvements in health-related quality of life measured with EQ 5-d, as well as a reduced number of psychiatric medications after hospital discharge	Peris 2021

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Evidence-to-Decision Framework

QUESTION

Should expert consultation (eg. ethics, palliative care, spiritual care, etc.) vs. usual care be used for adult ICU patients at end of life?	
POPULATION:	adult ICU patients at end of life
INTERVENTION:	expert consultation (eg. ethics, palliative care, spiritual care, etc.)
COMPARISON:	usual care
MAIN OUTCOMES:	Quality of communication - Palliative care consultation - RCT; Decisional conflict - Palliative care consultation - RCT; Patient satisfaction with care - Palliative care consultation - RCT; Family satisfaction with care - Palliative care consultation - RCT; Mental health symptoms - anxiety and depression - Palliative care consultation - RCT; Mental health symptoms- anxiety - Palliative care consultation - RCT; Mental health symptoms - depression - Palliative care consultation - RCT; Mental health symptoms - PTS - Palliative care consultation - RCT; Decisions to limit treatments - Palliative care consultation- RCT; Decisions to limit treatments - Palliative care consultation - observational; Mortality - Palliative care consultation - RCT; Mortality - Palliative care consultation - observational; ICU length of stay - Palliative care consultation - RCTs; ICU length of stay - Palliative care consultation - observational studies; Hospital length of stay - Palliative care consultation - RCT; Hospital length of stay - Palliative care consultation - observational studies; Nonbeneficial treatment - ICU length of stay - Palliative care consultation - observational; Nonbeneficial treatment - hospital days - Palliative care consultation- observational; Hospital costs - Palliative care consultation - RCT; Hospital costs - Palliative care consultation - observational; Quality of communication - Spiritual Care Consultation - RCT; Decisional conflict - Spiritual Care Consultation - RCT; Family satisfaction with care - Spiritual Care Consultation - RCT; Mental health symptoms- anxiety - Spiritual Care Consultation - RCT; Mental health symptoms - PTS - Spiritual Care Consultation - RCT; Mortality - Spiritual Care Consultation - RCT; Mental health symptoms - PTS - Psychologist consultation - observational; ICU length of stay - Psychologist consultation - observational; Hospital length of stay - Psychologist consultation -

ASSESSMENT

Problem Is the problem a priority?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		While ICU teams are capable of providing end of life care, other clinical specialists (eg. palliative care, spiritual care, psychology) may bring other skills which could address the suffering of patients, families, and staff in the ICU. Involving these specialists alongside ICU may enhance care and share the work of providing end of life care.

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Desirable Effects

How substantial are the desirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ○ Small ● Moderate ○ Large ○ Varies ○ Don't know	**Palliative Care Consultation** • may result in better family-rated quality of communication • may result in higher family satisfaction with care • may result in reduced family mental health symptoms of anxiety, depression, and post-traumatic stress • may result in more decisions to limit treatments **Spiritual Care Consultation** • results in lower decisional conflict for family members • results in higher satisfaction with care • results in reduced symptoms of anxiety and post-traumatic stress **Psychologist Consultation** • possible reduction in family symptoms of post-traumatic stress • possibly improved health-related quality of life for patient survivors • very uncertain effects on ICU length of stay and hospital length of stay	

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Trivial ○ Small ○ Moderate ○ Large ○ Varies ○ Don't know	**Palliative Care Consultation** • may result in increased decisional conflict for families • very uncertain impact upon patient mortality • very uncertain impact upon length of stay (ICU and hospital) • very uncertain impact upon non-beneficial treatments and costs **Spiritual Care Consultation** • none identified • likely results in little to no difference in quality of communication • likely results in little to no difference in patient mortality **Psychologist Consultation** • none identified	There may be some undesirable effects of introducting palliative care in the ICU if there is not associated education around what 'palliative care' entails; some families may have negative reactions to it.

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ● Low ○ Moderate ○ High ○ No included studies	**Palliative care consultation:** Low **Spiritual care consultation:** Low **Psychologist consultation:** Very low	No intervention specifically reported on quality of symptom management -- potential research priority?

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ● Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		Some patients coming from a vulnerable or marginalized population may have some distrust of health care providers and value these outcomes differently.

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ● Favors the intervention ○ Varies ○ Don't know		There is a consistent signal across studies and interventions that consultation with palliative care and spiritual care and psychology are likely helpful, but the panel also recognized that more evidence would be useful to quantify these effects and how best to implement them.

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ● Varies ○ Don't know	Observational studies of palliative care interventions suggest costs may be higher with palliative care consultaiton, however our certainty of this evidence is very low due to the high liklihood of residual confounding in the included studies and imprecision in this estimate. The study by Peris et al. noted that the annual cost of the Clinical Psychological Service is €30,000.	The financial impact of these interventions may be on the back end/downstream effects. Reducing length of stay, number of treatments etc. On the other hand, these interventions also require resources to provide and implement. The impact upon resources likely varies depending on the intervention, setting, and who is providing the resource.

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Very low ○ Low ○ Moderate ○ High ○ No included studies		

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies		

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Reduced ○ Probably reduced ○ Probably no impact ● Probably increased ○ Increased ○ Varies ○ Don't know		Potentially increased equity by having ICU collaborate with other consultation services in providing end of life care, educating families on these services and what they can provide. Differential access to end-of-life consultation services currently exists, more frequent and regular use of consultants may reduce discrepencies in access and empower patients and families.

Acceptability

Is the intervention acceptable to key stakeholders?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		Acceptability of these interventions to patients or families may vary depending on where the consultation happens (in the room vs. elsewhere) and timing with respect to ICU admission. ICU teams with embedded palliative care may be more acceptable to ICU clinicians and families than external consultants who may be less familiar to the team, and helps to normalize incorporation of palliative care with critical care.

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ○ Yes ● Varies ○ Don't know		Feasibility of consultation in ICU may vary depending on system resources; the embedding of consultants in the ICU can range from continually present, to occasional consultation, to rarely consulted. Composition of the palliative care team can vary, including physicians, nurses, social workers, etc.

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	**Moderate**	Large		Varies	Don't know
UNDESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	**Low**	Moderate	High			No included studies
VALUES	Important uncertainty or variability	**Possibly important uncertainty or variability**	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	**Favors the intervention**	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	**Varies**	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED	**Very low**	Low	Moderate	High			No included studies

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

	JUDGEMENT						
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	**Probably increased**	Increased	Varies	Don't know
ACCEPTABILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	Probably yes	Yes		**Varies**	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

CONCLUSIONS

Recommendation

We suggest consultation and collaboration with Ethics Consult Service, Palliative Care/Palliative Medicine, and/or Behavioral Health, when available, to address the suffering of ICU patients and families at the end of life, when there are challenges in mitigating conflicts, distress, or suffering. (conditional recommendation, low

Justification

The panel chose to make a conditional recommendation. There is low certainty evidence however it almost uniformly favours the involvement of palliative and spiritual care consultants. The effects are seen in patient and family outcomes with little data on staff outcomes. There is a small amount of data on psychologist consultation as well. There is substantial uncertainty around the costs and feasibility of these interventions, although they appear helpful.

Research priorities

- more research on clinical psychology consultation of patients, families, and staff
- more research on the impacts of consultative services upon staff members suffering

2.3 Consultations to address suffering for patients, families, and staff during end-of-life care

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3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Evidence Summary

Question 3.1 Should we recommend strategies and policies to identify, prevent, and mitigate inequities based upon gender, gender identity, sexual orientation, race, ethnicity, faith traditions, country of origin or socioeconomic status at the end of life?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Interventions to mitigate inequity	usual care	Relative (95% CI)	Absolute (95% CI)		
Unmet palliative care needs (assessed with: NEST)												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	55	56	-	MD **5.4 points lower** (10.7 lower to 0)	⨁⨁◯◯ Low	CRITICAL
Quality of communication (assessed with: Quality of Communication Score)												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	55	56	-	MD **0.5 points lower** (1.23 lower to 0.23 higher)	⨁⨁◯◯ Low	CRITICAL
Symptoms of depression for families (assessed with: Patient Health Questionnaire-9)												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	55	56	-	MD **0 units** (1.27 lower to 1.27 higher)	⨁⨁◯◯ Low	CRITICAL
Symptoms of anxiety for families (assessed with: Generalized Anxiety Disorder-7 scale)												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	55	56	-	MD **0.8 points higher** (1.1 lower to 2.7 higher)	⨁⨁◯◯ Low	CRITICAL
Symptoms of posttraumatic stress for families (assessed with: Posttraumatic Stress Syndrome Inventory)												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	55	56	-	MD **2.4 points higher** (3.12 lower to 7.92 higher)	⨁⨁◯◯ Low	CRITICAL
Goal concordant care												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	47/55 (85.5%)	47/56 (83.9%)	**RR 1.02** (0.87 to 1.19)	**17 more per 1,000** (from 109 fewer to 159 more)	⨁⨁◯◯ Low	IMPORTANT
Decisions to limit treatments												
1	randomised trials	not serious	not serious	not serious	very serious[a]	none	14/55 (25.5%)	8/56 (14.3%)	**RR 0.87** (0.72 to 1.05)	**19 fewer per 1,000** (from 40 fewer to 7 more)	⨁⨁◯◯ Low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio

Explanations

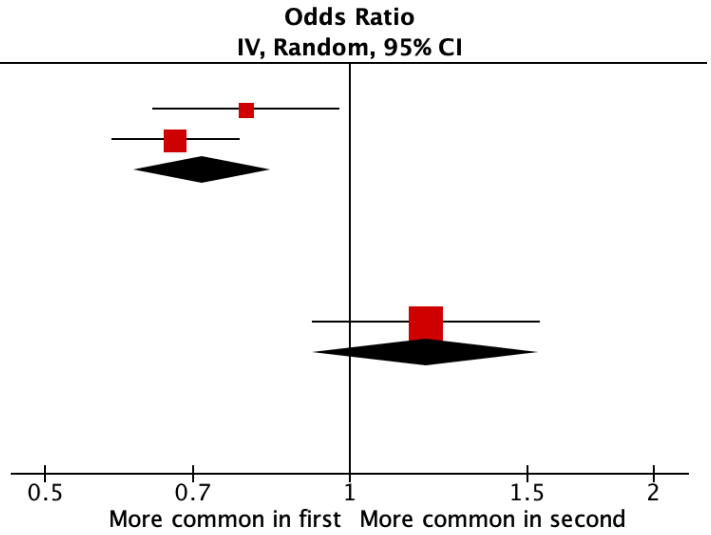
a. Very wide confidence intervals and small sample size resulting in very serious imprecision.

Forest plots

3.1 Strategies to identify and address discrimination and inequities in end-of-life care

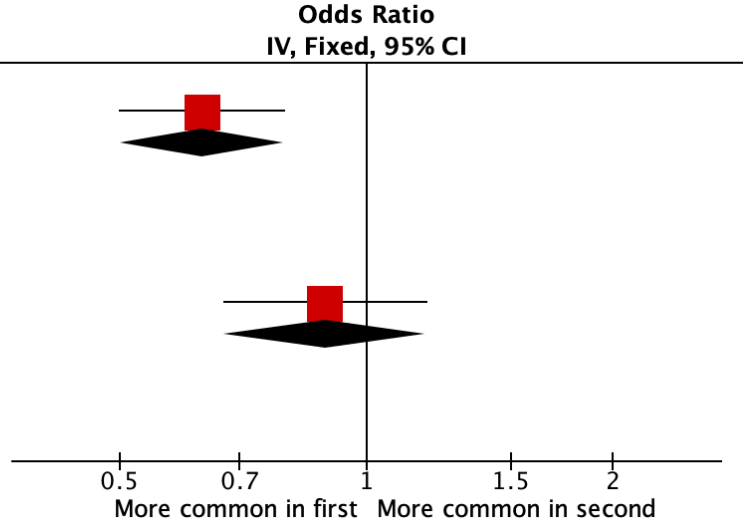
1. Recorded symptoms of pain or dyspnea at end of life

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI	Year
1.1.1 White vs. nonwhite					
Muni 2011	-0.2357	0.1074	38.2%	0.79 [0.64, 0.98]	2011
Barwise 2018	-0.3974	0.0734	61.8%	0.67 [0.58, 0.78]	2018
Subtotal (95% CI)			**100.0%**	**0.71 [0.61, 0.83]**	
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 1.55$, df = 1 (P = 0.21); $I^2 = 35\%$					
Test for overall effect: Z = 4.27 (P < 0.0001)					
1.1.2 High vs. low SES					
Muni 2011	0.174	0.1313	100.0%	1.19 [0.92, 1.54]	2011
Subtotal (95% CI)			**100.0%**	**1.19 [0.92, 1.54]**	
Heterogeneity: Not applicable					
Test for overall effect: Z = 1.33 (P = 0.19)					



2. Goal concordant care

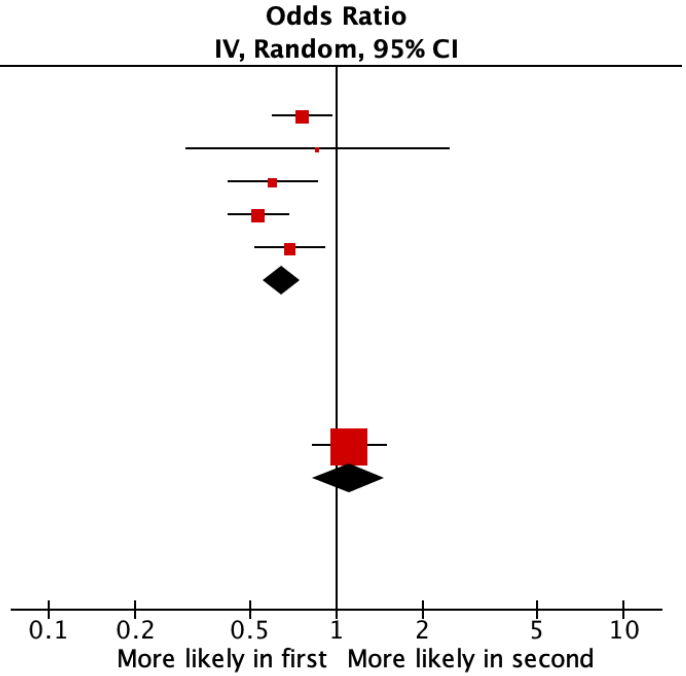
Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Fixed, 95% CI	Year
1.2.1 White vs. non-white					
Muni 2011	-0.462	0.1179	100.0%	0.63 [0.50, 0.79]	2011
Subtotal (95% CI)			**100.0%**	**0.63 [0.50, 0.79]**	
Heterogeneity: Not applicable					
Test for overall effect: Z = 3.92 (P < 0.0001)					
1.2.2 High vs. low SES					
Muni 2011	-0.1165	0.1449	100.0%	0.89 [0.67, 1.18]	2011
Subtotal (95% CI)			**100.0%**	**0.89 [0.67, 1.18]**	
Heterogeneity: Not applicable					
Test for overall effect: Z = 0.80 (P = 0.42)					



3. Decisions to limit treatments

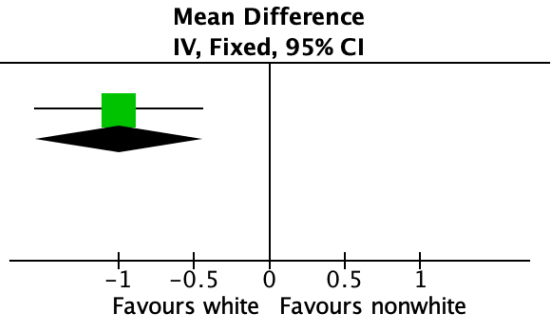
3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI	Year
1.3.1 White vs. non-white					
Muni 2011	-0.2744	0.1206	29.7%	0.76 [0.60, 0.96]	2011
Gutirrez 2014	-0.1542	0.5356	2.0%	0.86 [0.30, 2.45]	2014
Lee 2016	-0.5105	0.1813	15.4%	0.60 [0.42, 0.86]	2016
Chertoff 2017	-0.6259	0.1223	29.0%	0.53 [0.42, 0.68]	2017
Barwise 2018	-0.3728	0.139	23.9%	0.69 [0.52, 0.90]	2018
Subtotal (95% CI)			**100.0%**	**0.65 [0.56, 0.75]**	
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 4.86$, df = 4 (P = 0.30); $I^2 = 18\%$					
Test for overall effect: Z = 5.66 (P < 0.00001)					
1.3.2 High vs. low SES					
Muni 2011	0.1044	0.1483	100.0%	1.11 [0.83, 1.48]	2011
Subtotal (95% CI)			**100.0%**	**1.11 [0.83, 1.48]**	
Heterogeneity: Not applicable					
Test for overall effect: Z = 0.70 (P = 0.48)					



4. Quality of dying and death scores

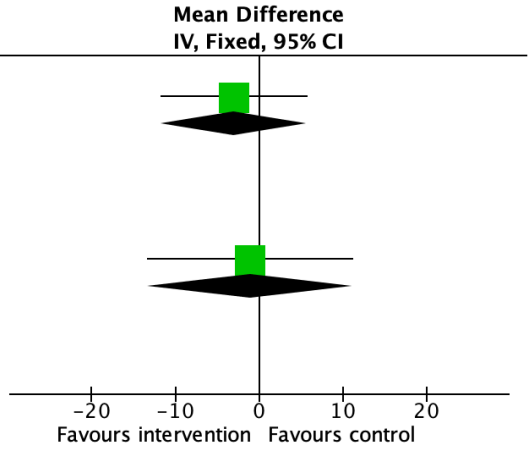
Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.4.1 White vs. Nonwhite									
Lee 2016	6.1	3.6	181	7.1	3	1068	100.0%	-1.00 [-1.55, -0.45]	2016
Subtotal (95% CI)			**181**			**1068**	**100.0%**	**-1.00 [-1.55, -0.45]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 3.53 (P = 0.0004)									



1. Unmet palliative care needs of families, measured using Needs at the End-of-Life Screening Tool (NEST), higher is worse

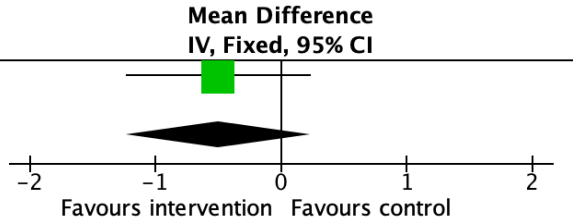
Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
2.1.1 White patients								
Cox 2024	-12.5	18.9153	36	-9.5	13.0709	18	100.0%	-3.00 [-11.64, 5.64]
Subtotal (95% CI)			**36**			**18**	**100.0%**	**-3.00 [-11.64, 5.64]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 0.68 (P = 0.50)								
2.1.2 Black patients								
Cox 2024	-1.4	18.7014	18	-0.3	22.751	27	100.0%	-1.10 [-13.28, 11.08]
Subtotal (95% CI)			**18**			**27**	**100.0%**	**-1.10 [-13.28, 11.08]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 0.18 (P = 0.86)								

Test for subgroup differences: $Chi^2 = 0.06$, df = 1 (P = 0.80), $I^2 = 0\%$



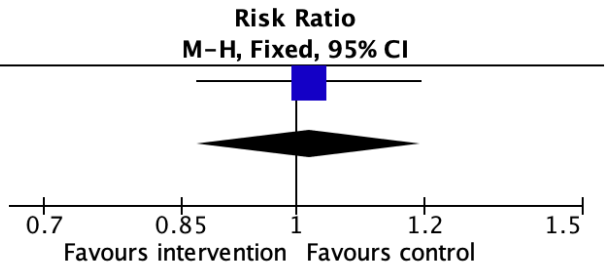
2. Quality of communication rated by families (single item of Quality of Communication questionnaire, range 1-10, higher is better)

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
Cox 2024	-8.9	1.8	55	-8.4	2.1	56	100.0%	-0.50 [-1.23, 0.23]
Total (95% CI)			**55**			**56**	**100.0%**	**-0.50 [-1.23, 0.23]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 1.35 (P = 0.18)								



3. Goal concordant care, rated by families

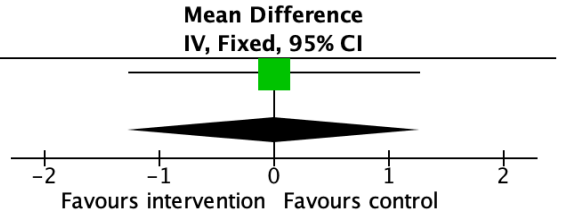
Study or Subgroup	Intervention Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Cox 2024	47	55	47	56	100.0%	1.02 [0.87, 1.19]
Total (95% CI)		**55**		**56**	**100.0%**	**1.02 [0.87, 1.19]**
Total events	47		47			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.22 (P = 0.82)						



4. Symptoms of depression for families, measured using Patient Health Questionnaire-9, range 0-27, higher is worse

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
Cox 2024	6	3.4	55	6	3.4	56	100.0%	0.00 [-1.27, 1.27]
Total (95% CI)			**55**			**56**	**100.0%**	**0.00 [-1.27, 1.27]**

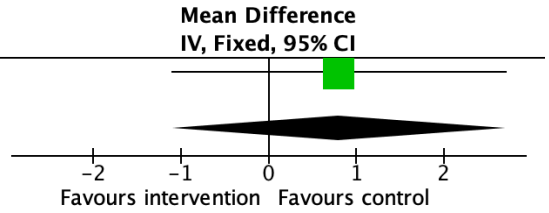
Heterogeneity: Not applicable
Test for overall effect: Z = 0.00 (P = 1.00)



5. Symptoms of anxiety for families, measured with Generalized Anxiety Disorder 7 scale, range -21, higher is worse

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
Cox 2024	6.1	5.2	55	5.3	5	56	100.0%	0.80 [-1.10, 2.70]
Total (95% CI)			**55**			**56**	**100.0%**	**0.80 [-1.10, 2.70]**

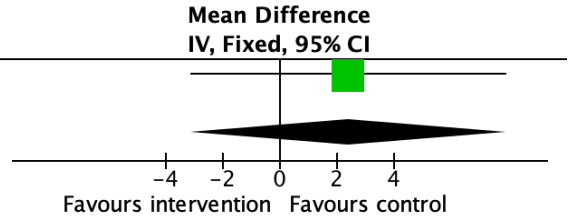
Heterogeneity: Not applicable
Test for overall effect: Z = 0.83 (P = 0.41)



6. Symptoms of posttraumatic stress disorder for families, measured using Posttraumatic Stress Syndrome Inventory, range 10-70, higher is worse

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI
Cox 2024	25.4	15.7	55	23	13.9	56	100.0%	2.40 [-3.12, 7.92]
Total (95% CI)			**55**			**56**	**100.0%**	**2.40 [-3.12, 7.92]**

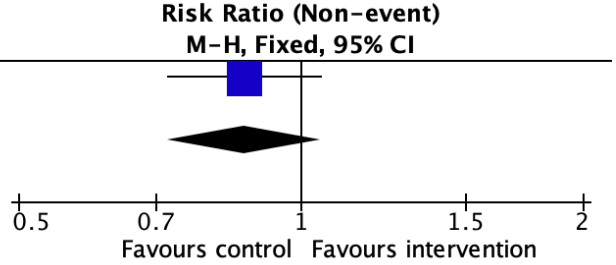
Heterogeneity: Not applicable
Test for overall effect: Z = 0.85 (P = 0.39)



7. Decisions to limit treatments

Study or Subgroup	Intervention Events	Total	Control Events	Total	Weight	Risk Ratio (Non-event) M-H, Fixed, 95% CI
Cox 2024	14	55	8	56	100.0%	0.87 [0.72, 1.05]
Total (95% CI)		**55**		**56**	**100.0%**	**0.87 [0.72, 1.05]**
Total events	14		8			

Heterogeneity: Not applicable
Test for overall effect: Z = 1.46 (P = 0.15)



3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Narrative Evidence

Theme/topic	Findings	Sources
Benefits of language-specific end of life care	A palliative care team dedicated to Spanish-speaking ICU patients during COVID-19 may provide an opportunity for earlier palliative care consultation	Davila 2023
	In an observational study, a culturally-adapted palliative care consultation using the SPIKES model was associated with a higher rate of conversion of patients code status to DNR than without the culturally-adaptive consultation; this included involvement a Spanish speaking team member, and inclusion of a chaplain who was a Catholic priest	Patel 2022
Differences in communication	In a simulation study, physicians demonstrated fewer positive rapport-building nonverbal cues when discussing end of life care with black patients vs. with white patients	Elliott 2016
	In a observational study of recorded ICU family conferences, conferences where an interpreted was required were shorter, with less clinician speech, and fewer statements of providing support for families, seeking input, addressing emotional burdens, and active listening.	Thornton 2009
	In a qualitative study in 3 ICUs in USA, ICU staff raised concerns risks of suboptimal communication for families of limited English proficiency (suboptimal assessment and treatment of symptoms; unmet patient/family expectations; decreased patient autonomy; unmet end of life wishes; and clinician moral distress. They recommended education and training; better integration of interpreters into ICU team; standardized timelines for goals of care conversations.	Suarez 2020
Intensity of treatment	In a retrospective observational study in Ontario, Canada individuals who died who were immigrants in the preceeding 30 years were more likely to die in intensive care than non-immigrants	Yarnell 2017
	In a retrospective observational study in Ontario, Canada, individuals of Chinese and South Asians decent more likely to die in intensive care than non-immigrants	Yarnell 2020
	In a large retrospective observational study of stroke patients in USA who died, during their last 6 months of life, black patients were more likely than white patients to receive intensive treatment (intubation, tracheostomy, gastrostomy tube, dialysis, artificial feeding, or CPR) and less likely to use hospice	Ornstein 2020

3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Evidence-to-Decision Framework

QUESTION

Should interventions to identify and address discrimination and inequities in end of life care vs. usual care be used for adult ICU patients at risk of dying?	
POPULATION:	adult ICU patients at risk of dying
INTERVENTION:	interventions to identify and address discrimination and inequities in end-of-life care
COMPARISON:	usual care
MAIN OUTCOMES:	Unmet palliative care needs; Quality of communication; Symptoms of depression for families; Symptoms of anxiety for families; Symptoms of posttraumatic stress for families; Goal concordant care; Decisions to limit treatments ;

ASSESSMENT

Problem
Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know	Evidence that patients in ICU receive different care at EOL on the basis of characteristics including race, ethnicity, immigration status, and likely other factors, although there is less evidence for those.	Difficult to study given widely different cultural views that underlie possible explanations for the differences found. Evidence that there are differences in other aspects of healthcare based on race, ethnicity, immigration status, etc. so likely will be happening with EOL care as well. Non-ICU evidence supports inequities in healthcare. Were different races, ethnicities, etc. involved in protocol development, etc.? If not, this may partially explain the differences post-intervention between white and black participants. Consider evidence about white vs nonwhite pain management (e.g., black sickle cell patients).

3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Desirable Effects How substantial are the desirable anticipated effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Trivial ● Small ○ Moderate ○ Large ○ Varies ○ Don't know	Improvement in unmet palliative care needs, measured using NEST at day 3 and day 7 of intervention.	Unclear what MCID is for NEST score—while there are changes in the Cox 2024 study the importance of these changes is unclear. Overall study quality weak as it was underpowered. Also, it is only one study and one outcome.
Undesirable Effects How substantial are the undesirable anticipated effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Trivial ○ Small ○ Moderate ○ Large ○ Varies ● Don't know	In RCT, no negative effects seen, however, the effect was larger for white participants vs. black participants. Overall group improved, no one got worse over time.	RCT study results suggest that the intervention may have widened inequities - however, this may be due to a lack of statistical power given the smaller number of black participants included. Need to consider belief systems/values of families involved because that may underlie the difference in why white participants had much larger improvement than black participants. Need to consider the diversity of individuals conducting the research and addressing unmet palliative care needs --- these may impact the outcome of any approach to identifying palliative care needs.
Certainty of evidence What is the overall certainty of the evidence of effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Very low ● Low ○ Moderate ○ High ○ No included studies	Onee small RCT only, certainty of evidence rated down for imprecision.	

3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Values Is there important uncertainty about or variability in how much people value the main outcomes?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Important uncertainty or variability ● Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		Populations with low health literacy and varying SES (do all have phones and cell service - did this impact recruitment?) - this would decrease value of this type of intervention. Face-to-face communication still important How effective is something (i.e., the app) that is devoid of humanity going to be? Need more robust sociologic methodologies to address these issues
Balance of effects Does the balance between desirable and undesirable effects favor the intervention or the comparison?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● Don't know		Big difference between white and non-white participants – the intervention seems to improve palliative care needs in the white population only, potentially increasing inequities, but unclear what the reasons for this are.
Resources required How large are the resource requirements (costs)?"		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ○ Varies ● Don't know	Cost not reported in study or protocol	Cost to download from app store, develop an app, license, etc Even the phone and internet (wifi, data, hotspot, etc.) are costs...especially need to consider low resource areas

3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Certainty of evidence of required resources What is the certainty of the evidence of resource requirements (costs)?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Very low ○ Low ○ Moderate ○ High ● No included studies	Not reported in RCT	
Cost effectiveness Does the cost-effectiveness of the intervention favor the intervention or the comparison?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies	Not reported in RCT or protocol	
Equity What would be the impact on health equity?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Reduced ○ Probably reduced ○ Probably no impact ○ Probably increased ○ Increased ○ Varies ● Don't know	Both groups improved, but intervention did not do a lot for the group it was designed to address the unmet needs of (improved more for white participants than black participants).	Uneven group sizes. Difficult to understand if it truly increased inequities or something else underlying

3.1 Strategies to identify and address discrimination and inequities in end-of-life care

Acceptability Is the intervention acceptable to key stakeholders?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ● Probably no ○ Probably yes ○ Yes ○ Varies ○ Don't know		Need more robust sociologic methodologies to address these issues and if an app to address palliative care needs would be acceptable. With an intervention like the app, you lose the face-to-face interaction which may not be acceptable to some. Acceptability of how study was done may have impacted the difference in outcomes for white vs black participants
Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		Likely feasible given the large shift to tele-medicine, e-medicine, etc. but may introduce more inequities again because require internet, phone/ tablet/computer, etc. that not everyone has access to. Feasible, but should we? Maybe not - lose face-to-face and can increase challenges with difficult conversations

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	**Probably yes**	Yes		Varies	Don't know
DESIRABLE EFFECTS	Trivial	**Small**	Moderate	Large		Varies	Don't know
UNDESIRABLE EFFECTS	Trivial	Small	Moderate	Large		Varies	**Don't know**
CERTAINTY OF EVIDENCE	Very low	**Low**	Moderate	High			No included studies
VALUES	Important uncertainty or variability	**Possibly important uncertainty or variability**	Probably no important uncertainty or variability	No important uncertainty or variability			

3.1 Strategies to identify and address discrimination and inequities in end-of-life care

BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**Don't know**
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	Varies	**Don't know**
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	Very low	Low	Moderate	High			**No included studies**
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no	Probably	Increased	Varies	**Don't know**
ACCEPTABILITY	No	**Probably no**	Probably yes	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	**Conditional recommendation for either the intervention or the comparison**	Conditional recommendation for the intervention	Strong recommendation for the intervention
○	○	●	○	○

CONCLUSIONS

Recommendation
We have insufficient evidence to recommend for or against specific interventions to identify and reduce unmet palliative care needs in EOL care in the ICU. (No recommendation, low certainty evidence) ICU clinicians providing EOL care should explore and address individual patient and family palliative care needs, which may vary between and within communities. (Good practice statement)
Justification
We identified multiple observational studies which suggest that processes and outcomes of end-of-life care in the ICU vary on the basis of race, immigration status, and language. There is robust evidence of inequities in other aspects of healthcare, it is reasonable to assume that inequities are also present in EOL care in the ICU. Further research is needed to understand the origin of the inequities, the prevalence of the inequities, and how to neutralize them. Some of these may be due to distrust in the ICU and health care system, variations in values and preferences between and within populations, and possibly local variations in clinician practice. We identified one RCT which used a an app-based approach to identify unmet palliative care needs in the ICU, an approach which aims to systematically address unique, individual patient/family needs, however this study was small and underpowered. Furthermore, the intervention seemed to have a larger effect in the white population— so while effective, the intervention may serve to exacerbate inequalities by only addressing palliative care needs of white patients and families. Our overall certainty of these effects are low, and more research is needed to understand which approaches to identifying palliative care needs work best, and how to actually meet identified needs so as to reduce inequities in care. Such research may benefit from being participatory in nature -- working with people rather than doing research “to” or “for” them, with a diverse care and research team. While app-based approaches hold promise, the panel had concern for navigating away from human interaction, and technology interfering with relationship between provider and patient impacts outcome. In the absence of a clear ‘best’ approach to reducing inequities in end of life care in the ICU, the panel made a good practice statement, that clinicians providing EOL care explore and address individual patient and family palliative care needs, recognizing that these may vary between and within populations. This statement meets GRADE criteria for a good practice statement: i) it is clear and actionable; ii) it is really necessary (some clinicians may not explore palliative care needs); iii) it will result in large net positive consequences (identifying palliative care needs, building relationships between clinicians and patients/families); iv) collecting and summarizing evidence is a large opportunity cost (clinicians exploring patient and family needs is not likely to have much research); and v) there is indirect evidence (exploring patient needs is likely to result in more effective care for those patients; there is evidence that culturally- and linguistically- tailored end of life care is acceptable and effective)

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3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Evidence Summary

Question 3.2: Should we recommend education to increase capacity of ICU staff in providing EOL care?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	EOL Education	usual care	Relative (95% CI)	Absolute (95% CI)		
Quality of Death and Dying - RCTs												
2	RCTs	not serious	not serious[a]	not serious	serious[b]	none	1040	1021	-	SMD **0.16 higher** (0.01 lower to 0.33 higher)	⨁⨁⨁◯ Moderate	CRITICAL
Quality of Death and Dying - Observational												
2	obs studies	not serious	not serious	not serious	serious[b]	none	205	180	-	SMD **0.16 lower** (0.36 lower to 0.04 higher)	⨁◯◯◯ Very low	CRITICAL
Quality of communication - RCTs												
2	RCTs	not serious	serious[c]	not serious	serious[b]	none	284	282	-	SMD **0.1 lower** (0.46 lower to 0.26 higher)	⨁⨁◯◯ Low	CRITICAL
Quality of communication - Observational												
4	obs studies	not serious	not serious[a]	not serious	serious[b]	none	240	204	-	SMD **0.28 lower** (0.65 lower to 0.1 higher)	⨁◯◯◯ Very low	CRITICAL
Family satisfaction with care - RCT												
1	RCT	not serious	not serious	not serious	not serious	none	792	742	-	SMD **0.03 higher** (0.07 lower to 0.13 higher)	⨁⨁⨁⨁ High	IMPORTANT
Family satisfaction with care - Observational												
4	obs studies	not serious	not serious	not serious	not serious	none	338	343	-	SMD **0.17 lower** (0.33 lower to 0.02 lower)	⨁⨁◯◯ Low	IMPORTANT
Proportion of patients with a family meeting - RCT												

1	RCT	serious [d]	not serious	not serious	not serious	none	1338/2238 (59.8%)	1629/2238 (72.8%)	**RR 1.48** (1.36 to 1.61)	**349 more per 1,000** (from 262 more to 444 more)	⨁⨁⨁◯ Moderate	IMPORTANT
Proportion of patients with a family meeting - Observational												
5	obs studies	not serious	not serious [a]	not serious	not serious	none	394/1075 (36.7%)	306/1700 (18.0%)	**RR 0.68** (0.48 to 0.98)	**58 fewer per 1,000** (from 94 fewer to 4 fewer)	⨁⨁◯◯ Low	IMPORTANT
Time until family conference - Observational												
2	obs studies	not serious	not serious	not serious	not serious	none	397	916	-	MD **34.5 lower** (40.93 lower to 28.07 lower)	⨁⨁◯◯ Low	IMPORTANT
Decisions to withhold/withdraw treatments - RCTs												
1	RCT	not serious	not serious	not serious	serious [b]	none	359/514 (69.8%)	412/565 (72.9%)	**RR 0.96** (0.89 to 1.03)	**29 fewer per 1,000** (from 80 fewer to 22 more)	⨁⨁⨁◯ Moderate	IMPORTANT
Decisions to withhold/withdraw treatments - Observational												
2	obs studies	not serious	not serious	not serious	serious [b]	none	30/118 (25.4%)	24/104 (23.1%)	**RR 1.01** (0.66 to 1.56)	**2 more per 1,000** (from 78 fewer to 129 more)	⨁◯◯◯ Very low	IMPORTANT
Completion of ACP/code status - RCT												
1	RCT	not serious	not serious	not serious	serious [b]	none	1699/2236 (76.0%)	1626/2195 (74.1%)	**RR 0.93** (0.84 to 1.03)	**52 fewer per 1,000** (from 119 fewer to 22 more)	⨁⨁⨁◯ Moderate	IMPORTANT
Completion of ACP/code status - Observational												
4	obs studies	not serious	not serious [a]	not serious	serious [b]	none	342/544 (62.9%)	237/1089 (21/8%)	**RR 0.57** (0.34 to 0.96)	**9420 fewer per 1,000** (from 144 fewer to 9 fewer)	⨁◯◯◯ Very low	IMPORTANT
Mortality - RCTs												
1	RCT	not serious	not serious	not serious	serious [b]	none	67/412 (16.3%)	76/486 (15.6%)	**RR 1.04** (0.77 to 1.41)	**6 more per 1,000** (from 36 fewer to 64 more)	⨁⨁⨁◯ Moderate	IMPORTANT

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Mortality - Observational

8	obs studies	not serious	not serious	not serious	not serious	none	141/831 (17.0%)	227/1419 (16.0%)	**RR 0.77** (0.63 to 0.95)	**37 fewer per 1,000** (from 59 fewer to 8 fewer)	⨁⨁◯◯ Low	IMPORTANT

Living independently at home - Observational

2	obs studies	not serious	not serious	not serious	serious[b]	none	49/374 (13.1%)	125/907 (13.8%)	**RR 0.84** (0.62 to 1.14)	**22 fewer per 1,000** (from 52 fewer to 19 more)	⨁◯◯◯ Very low	IMPORTANT

Family HADS score - Observational

1	obs study	not serious	not serious	not serious	serious[b]	none	19	17	-	MD **5.01 higher** (0.39 lower to 10.41 higher)	⨁◯◯◯ Very low	IMPORTANT

ICU length of stay - RCT

2	RCTs	not serious	not serious	not serious	not serious	none	2268	2265	-	MD **1.01 lower** (1.57 lower to 0.44 lower)	⨁⨁⨁⨁ High	CRITICAL

ICU length of stay - Observational

7	obs studies	not serious	serious[c]	not serious	not serious	none	820	1389	-	MD **0.96 lower** (2.12 lower to 0.2 higher)	⨁◯◯◯ Very low	CRITICAL

Hospital length of stay - Observational

5	obs studies	not serious	not serious	not serious	not serious	none	725	1256	-	MD **2.3 lower** (4.31 lower to 0.29 lower)	⨁⨁◯◯ Low	CRITICAL

Financial cost - Observational

1	obs study	not serious	not serious	not serious	not serious	none	98	105	-	SMD **0.44 lower** (0.71 lower to 0.16 lower)	⨁⨁◯◯ Low	IMPORTANT

Staff self-efficacy - RCT

1	RCT	not serious	not serious	not serious	not serious	none	40	40	-	SMD **2.41 lower** (2.99 lower to 1.83 lower)	⨁⨁⨁⨁ High	CRITICAL

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Staff self-efficacy - Observational

10	obs studies	not serious	not serious[a]	not serious	not serious	none	259	257	-	SMD **1.47 lower** (2.07 lower to 0.86 lower)	⨁⨁◯◯ Low	CRITICAL

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

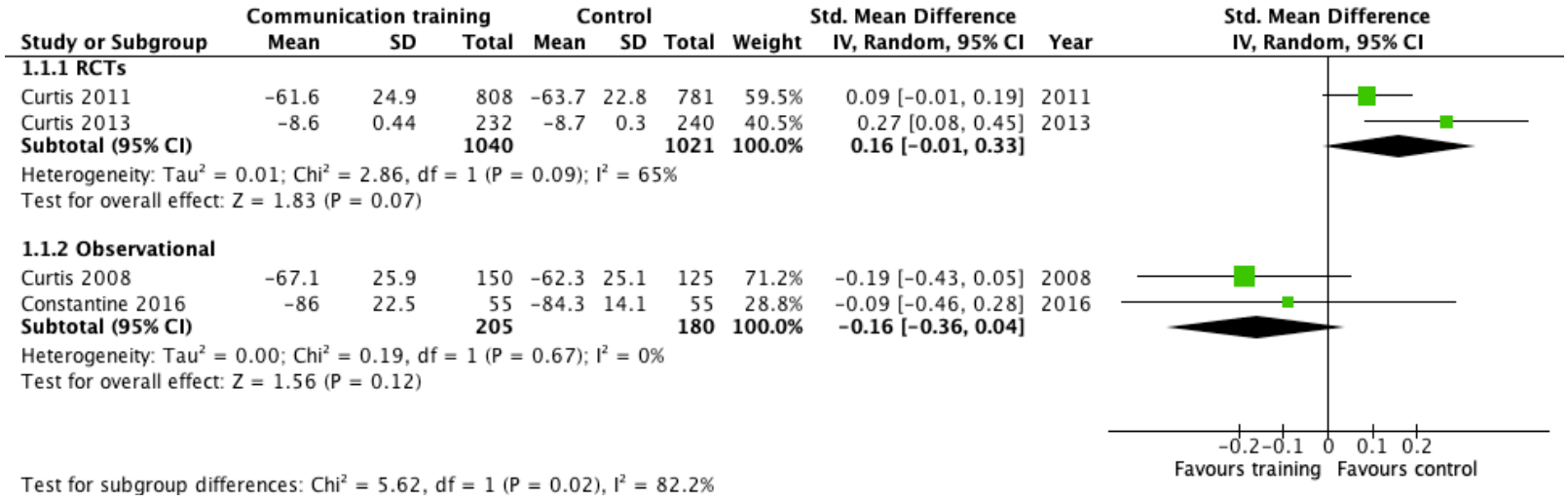
Explanations

a. Although significant statistical heterogeneity (I2 > 60%), the studies show a similar direction of effect, so we did not rate down for inconsistency.
b. Wide 95% confidence intervals which do not rule out significant benefit, harm, or no effect, resulting in serious imprecision.
c. Significant statistical heterogeneity (I2>60%) with studies showing different effects, resulting in serious inconsistency.
d. It is unclear whether clinician practice of documenting family meetings changed because of the study; ie. clinicians may have documented fewer meetings in the intervention arm, recognizing data was being collected for study purposes as well. This increases the risk of bias in the single non-blinded study.

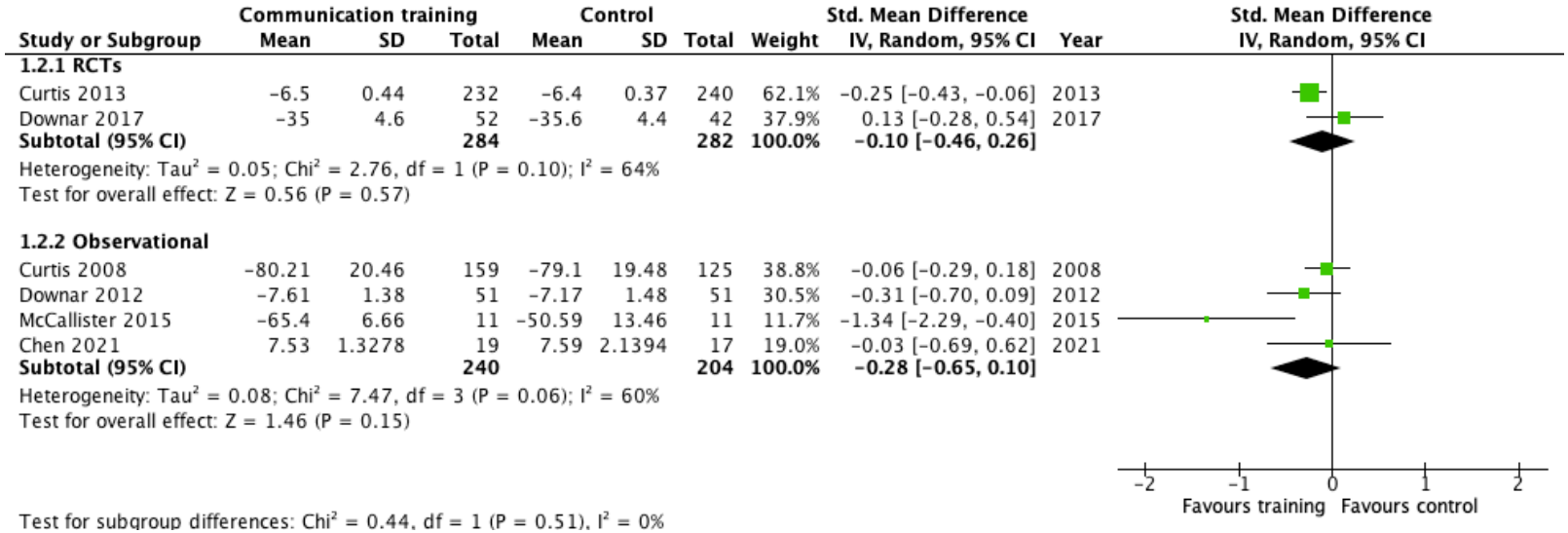
3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Forest plots

1. Quality of Death and Dying, measured with QODD or Quality of End of Life Care Score

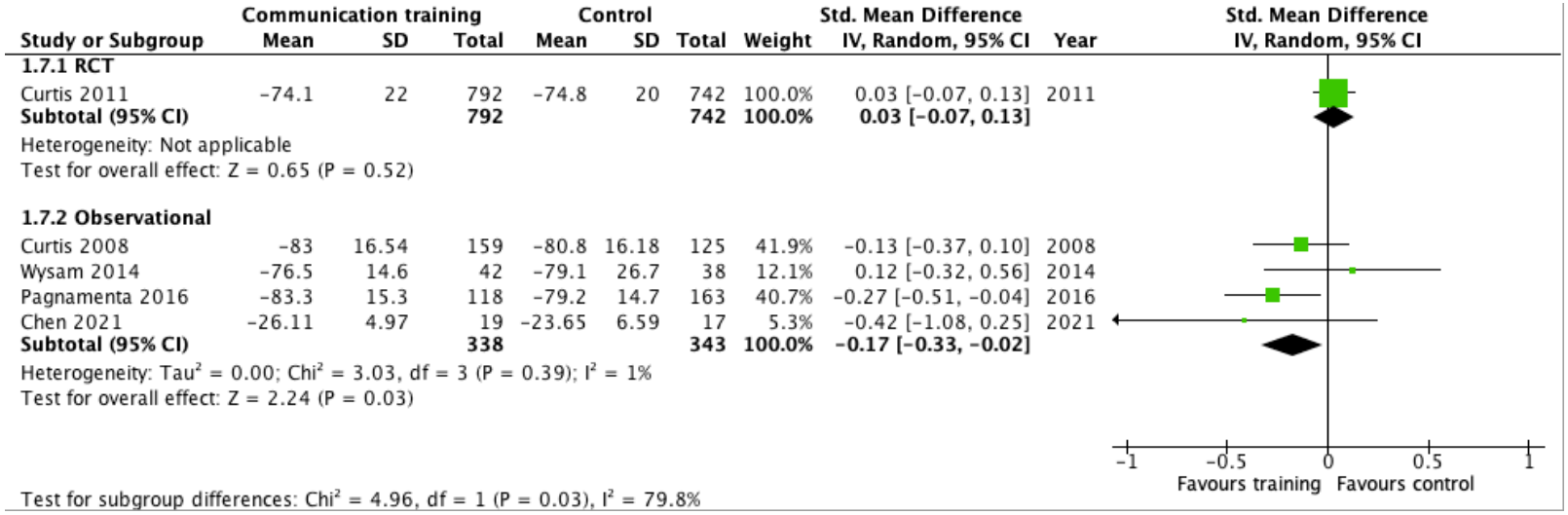


2. Quality of communication, measured with QOC score or CARE score

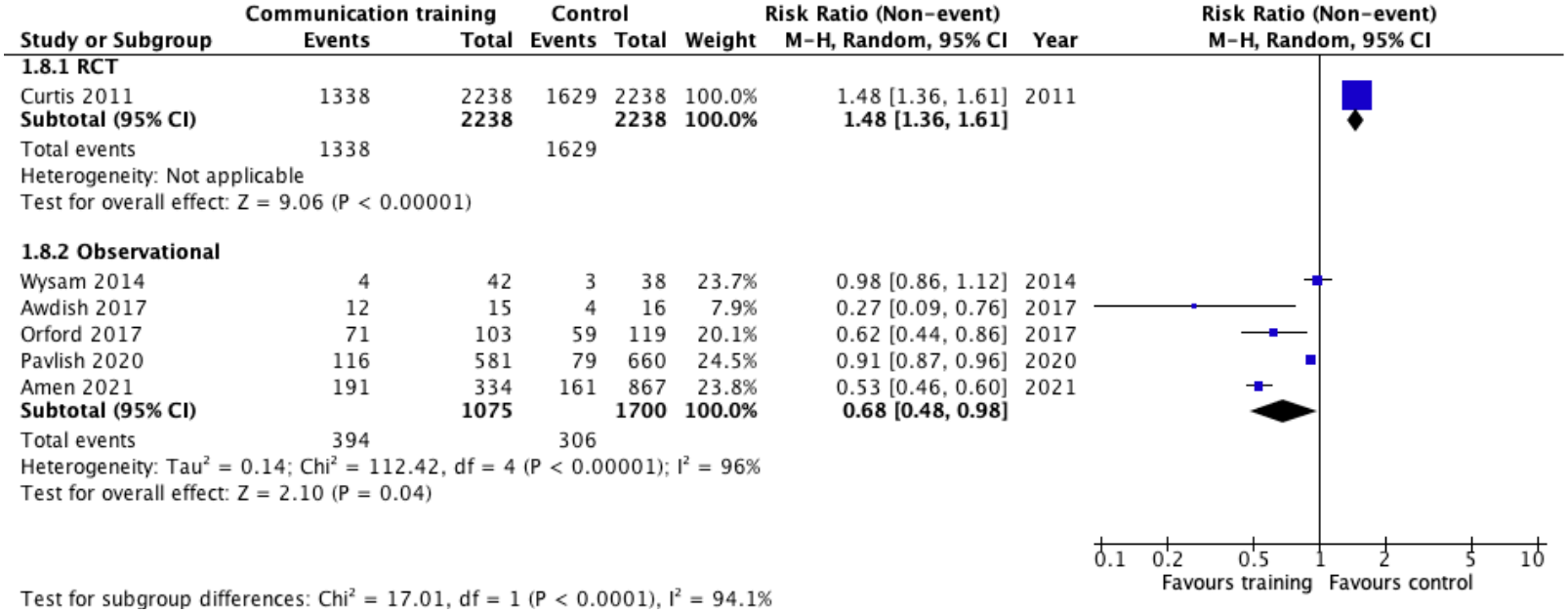


3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

3. Family satisfaction with care, measured with FS-ICU or CSQ-8



4. Proportion of patients with documented family meeting



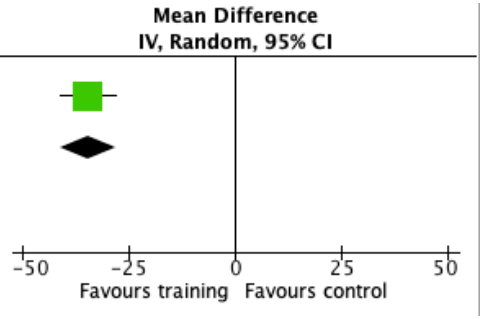
3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

5. Time until family meeting

Study or Subgroup	Communication training Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.10.1 Observational									
Amen 2021	13.1	26	334	47.6	87	867	100.0%	-34.50 [-40.93, -28.07]	2021
You 2021	3	0	63	4	0	49		Not estimable	2021
Subtotal (95% CI)			**397**			**916**	**100.0%**	**-34.50 [-40.93, -28.07]**	

Heterogeneity: Not applicable
Test for overall effect: Z = 10.52 (P < 0.00001)

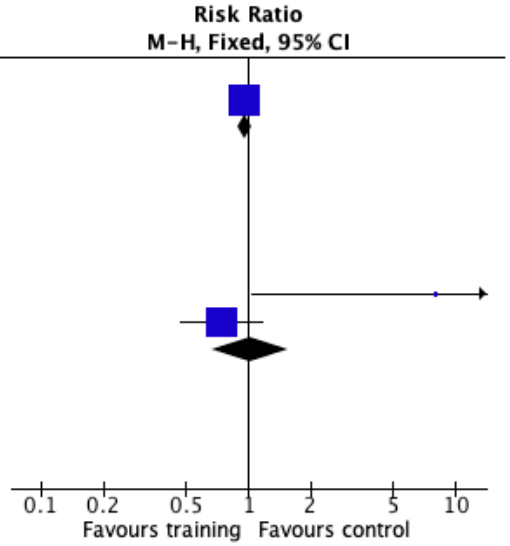
Test for subgroup differences: Not applicable



6. Decisions to withhold/withdraw treatments in ICU

Study or Subgroup	Communication training Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI	Year
1.11.1 RCTs							
Curtis 2011	359	514	412	565	100.0%	0.96 [0.89, 1.03]	2011
Subtotal (95% CI)		**514**		**565**	**100.0%**	**0.96 [0.89, 1.03]**	
Total events	359		412				
Heterogeneity: Not applicable							
Test for overall effect: Z = 1.11 (P = 0.27)							
1.11.2 Observational							
Constantine 2016	8	55	1	55	3.7%	8.00 [1.04, 61.83]	2016
You 2021	22	63	23	49	96.3%	0.74 [0.47, 1.17]	2021
Subtotal (95% CI)		**118**		**104**	**100.0%**	**1.01 [0.66, 1.56]**	
Total events	30		24				
Heterogeneity: Chi^2 = 5.74, df = 1 (P = 0.02); I^2 = 83%							
Test for overall effect: Z = 0.06 (P = 0.95)							

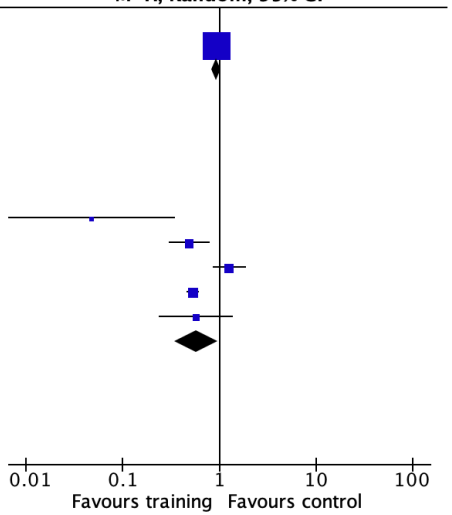
Test for subgroup differences: Chi^2 = 0.07, df = 1 (P = 0.80), I^2 = 0%



3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

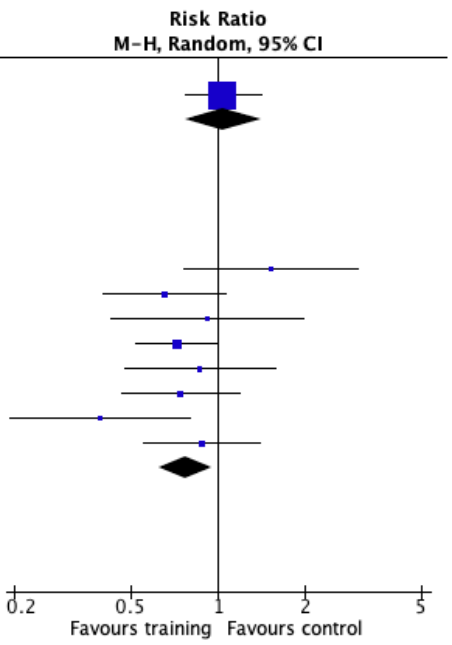
7. Completion of code status or advance care planning

Study or Subgroup	Communication training Events	Total	Control Events	Total	Weight	Risk Ratio (Non-event) M-H, Random, 95% CI	Year
1.12.1 RCT							
Curtis 2011	1699	2236	1626	2195	100.0%	0.93 [0.84, 1.03]	2011
Subtotal (95% CI)		**2236**		**2195**	**100.0%**	**0.93 [0.84, 1.03]**	
Total events	1699		1626				
Heterogeneity: Not applicable							
Test for overall effect: Z = 1.47 (P = 0.14)							
1.12.2 Observational							
Wysam 2014	41	42	19	38	5.6%	0.05 [0.01, 0.34]	2014
Constantine 2016	39	55	22	55	23.8%	0.48 [0.30, 0.77]	2016
Orford 2017	65	103	84	119	25.5%	1.25 [0.86, 1.83]	2017
Amen 2021	191	334	169	867	29.0%	0.53 [0.47, 0.60]	2021
Kaminski 2022	6	10	3	10	16.2%	0.57 [0.24, 1.35]	2022
Subtotal (95% CI)		**544**		**1089**	**100.0%**	**0.57 [0.34, 0.96]**	
Total events	342		297				
Heterogeneity: $Tau^2 = 0.23$; $Chi^2 = 24.78$, df = 4 (P < 0.0001); $I^2 = 84\%$							
Test for overall effect: Z = 2.13 (P = 0.03)							
Test for subgroup differences: $Chi^2 = 3.24$, df = 1 (P = 0.07), $I^2 = 69.1\%$							



8. Mortality

Study or Subgroup	Communication training Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
1.14.1 RCTs							
Curtis 2013	67	412	76	486	100.0%	1.04 [0.77, 1.41]	2013
Subtotal (95% CI)		**412**		**486**	**100.0%**	**1.04 [0.77, 1.41]**	
Total events	67		76				
Heterogeneity: Not applicable							
Test for overall effect: Z = 0.25 (P = 0.80)							
1.14.2 Observational							
Hatler 2012	17	98	12	105	7.8%	1.52 [0.76, 3.01]	2012
Constantine 2016	17	55	26	55	14.1%	0.65 [0.40, 1.06]	2016
Pagnamenta 2016	10	118	15	163	6.4%	0.92 [0.43, 1.98]	2016
Orford 2017	35	103	56	119	24.6%	0.72 [0.52, 1.00]	2017
Sviri 2019	13	40	15	40	9.9%	0.87 [0.48, 1.58]	2019
You 2021	21	63	22	49	14.9%	0.74 [0.47, 1.18]	2021
Chen 2021	6	20	16	21	7.3%	0.39 [0.19, 0.80]	2021
Amen 2021	22	334	65	867	14.9%	0.88 [0.55, 1.40]	2021
Subtotal (95% CI)		**831**		**1419**	**100.0%**	**0.77 [0.63, 0.95]**	
Total events	141		227				
Heterogeneity: $Tau^2 = 0.02$; $Chi^2 = 8.56$, df = 7 (P = 0.29); $I^2 = 18\%$							
Test for overall effect: Z = 2.49 (P = 0.01)							
Test for subgroup differences: $Chi^2 = 2.58$, df = 1 (P = 0.11), $I^2 = 61.3\%$							



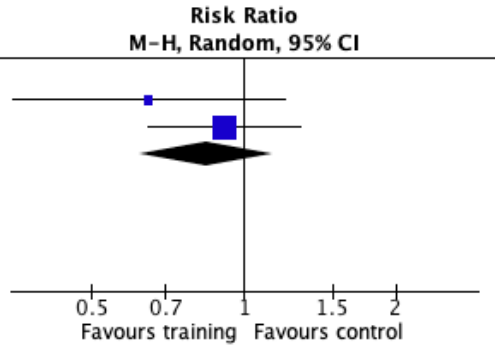
3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

9. Patients living independently at home

Study or Subgroup	Communication training Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
1.16.2 Observational							
Sviri 2019	11	40	17	40	24.0%	0.65 [0.35, 1.20]	2019
Amen 2021	38	334	108	867	76.0%	0.91 [0.65, 1.29]	2021
Subtotal (95% CI)		**374**		**907**	**100.0%**	**0.84 [0.62, 1.14]**	
Total events	49		125				

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.92$, df = 1 (P = 0.34); $I^2 = 0\%$

Test for overall effect: Z = 1.12 (P = 0.26)



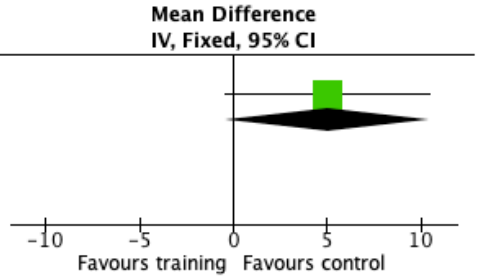
Test for subgroup differences: Not applicable

10. Family mental health symptoms, measured using HADS

Study or Subgroup	Communication training Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Fixed, 95% CI	Year
1.18.1 Observational									
Chen 2021	19.07	9.2327	19	14.06	7.2741	17	100.0%	5.01 [-0.39, 10.41]	2021
Subtotal (95% CI)			**19**			**17**	**100.0%**	**5.01 [-0.39, 10.41]**	

Heterogeneity: Not applicable

Test for overall effect: Z = 1.82 (P = 0.07)



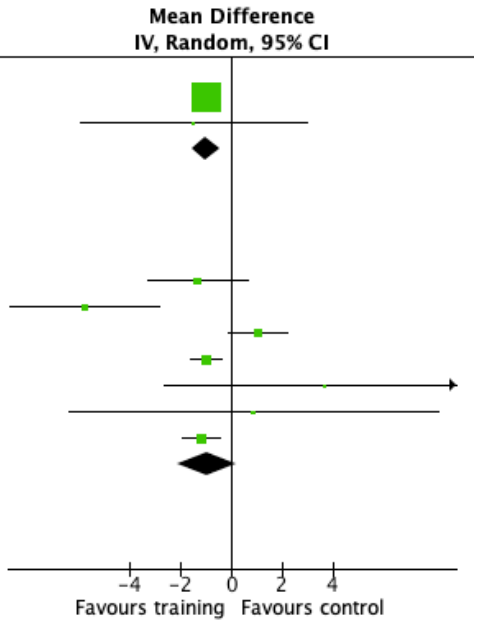
Test for subgroup differences: Not applicable

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

11. ICU length of stay

Study or Subgroup	Communication training Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.19.1 RCT									
Curtis 2011	5	6.3	2250	6	12.3	2250	98.4%	-1.00 [-1.57, -0.43]	2011
Noome 2016	5.6	6.7	18	7.1	6.4	15	1.6%	-1.50 [-5.98, 2.98]	2016
Subtotal (95% CI)			**2268**			**2265**	**100.0%**	**-1.01 [-1.57, -0.44]**	
Heterogeneity: Tau² = 0.00; Chi² = 0.05, df = 1 (P = 0.83); I² = 0%									
Test for overall effect: Z = 3.49 (P = 0.0005)									
1.19.2 Observational									
Curtis 2008	5.83	7.76	150	7.19	8.81	125	15.0%	-1.36 [-3.34, 0.62]	2008
Constantine 2016	4.89	7.415	55	10.69	8.322	55	9.8%	-5.80 [-8.75, -2.85]	2016
Pagnamenta 2016	6.04	5.2	118	5	4.5	163	21.0%	1.04 [-0.13, 2.21]	2016
Orford 2017	2	2.96	103	3	1.48	119	24.7%	-1.00 [-1.63, -0.37]	2017
Sviri 2019	15.7	17.3	40	12	11.1	40	2.9%	3.70 [-2.67, 10.07]	2019
Chen 2021	19.15	13.35	20	18.29	10	20	2.3%	0.86 [-6.45, 8.17]	2021
Amen 2021	4.8	5.2	334	6	7	867	24.2%	-1.20 [-1.93, -0.47]	2021
Subtotal (95% CI)			**820**			**1389**	**100.0%**	**-0.96 [-2.12, 0.20]**	
Heterogeneity: Tau² = 1.31; Chi² = 24.46, df = 6 (P = 0.0004); I² = 75%									
Test for overall effect: Z = 1.63 (P = 0.10)									

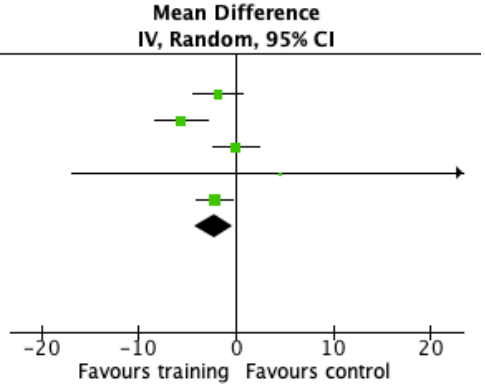
Test for subgroup differences: Chi² = 0.00, df = 1 (P = 0.95), I² = 0%



12. Hospital length of stay

Study or Subgroup	Communication training Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
1.20.2 Observational									
Curtis 2008	7.54	9.37	150	9.38	12	125	23.4%	-1.84 [-4.42, 0.74]	2008
Hatler 2012	15.45	8.8	98	21.1	10.9	105	22.5%	-5.65 [-8.37, -2.93]	2012
Orford 2017	9	7.4	103	9	11.1	119	24.4%	0.00 [-2.45, 2.45]	2017
Sviri 2019	39.8	59.6	40	35.3	35.2	40	0.9%	4.50 [-16.95, 25.95]	2019
Amen 2021	9.5	13.7	334	11.7	16.9	867	28.9%	-2.20 [-4.05, -0.35]	2021
Subtotal (95% CI)			**725**			**1256**	**100.0%**	**-2.30 [-4.31, -0.29]**	
Heterogeneity: Tau² = 2.76; Chi² = 9.73, df = 4 (P = 0.05); I² = 59%									
Test for overall effect: Z = 2.24 (P = 0.03)									

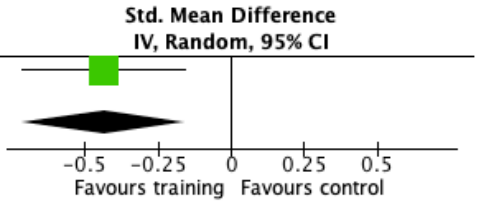
Test for subgroup differences: Not applicable



13. Financial cost of hospital stay

Study or Subgroup	Communication training Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI
Hatler 2012	241,332	135,067	98	305,448	156,376	105	100.0%	-0.44 [-0.71, -0.16]
Total (95% CI)			**98**			**105**	**100.0%**	**-0.44 [-0.71, -0.16]**

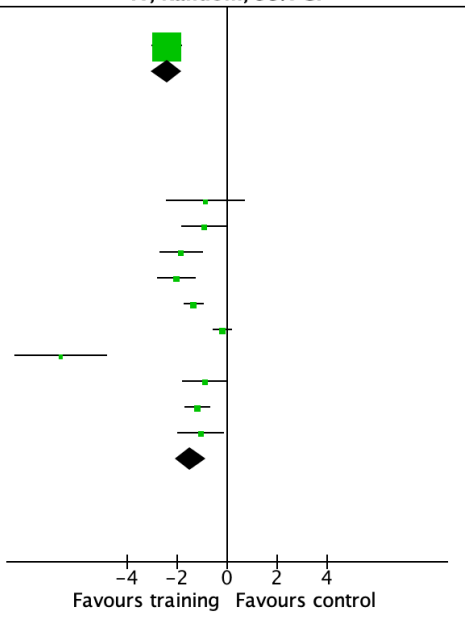
Heterogeneity: Not applicable
Test for overall effect: Z = 3.07 (P = 0.002)



14. Staff self-efficacy ratings, measured using variety of scales

Study or Subgroup	Communication training Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
1.23.1 RCT									
Shushtari 2022	-38.43	4.47	40	-26.13	5.57	40	100.0%	-2.41 [-2.99, -1.83]	2022
Subtotal (95% CI)			**40**			**40**	**100.0%**	**-2.41 [-2.99, -1.83]**	
Heterogeneity: Not applicable									
Test for overall effect: Z = 8.12 (P < 0.00001)									
1.23.2 Observational									
DeVita 2003	-4	1	5	-3	1	3	7.0%	-0.87 [-2.42, 0.68]	2003
McCallister 2015	-77.71	12.86	11	-64.74	14.43	11	10.0%	-0.91 [-1.80, -0.03]	2015
Choi 2016	-4.56	0.51	16	-3.31	0.79	16	10.2%	-1.83 [-2.68, -0.99]	2016
Yang 2021	-3.37	0.49	23	-2.52	0.31	21	10.7%	-2.02 [-2.75, -1.28]	2021
Lamiani 2021	-3.2	0.71	69	-2.3	0.63	69	12.2%	-1.33 [-1.70, -0.96]	2021
Myers 2021	-3.91	0.596	59	-3.76	0.998	59	12.2%	-0.18 [-0.54, 0.18]	2021
Kaminski 2022	-75.25	14.33	17	53.8	22.69	17	6.0%	-6.64 [-8.45, -4.83]	2022
Marckiewicz 2023	48.27	9.8504	11	56.36	7.9599	11	10.0%	-0.87 [-1.75, 0.01]	2023
Tamura 2023	-2.5	0.69	37	-1.8	0.46	39	11.8%	-1.19 [-1.68, -0.70]	2023
Shah 2024	-4.36	0.67	11	-3.73	0.47	11	9.9%	-1.05 [-1.95, -0.14]	2024
Subtotal (95% CI)			**259**			**257**	**100.0%**	**-1.47 [-2.07, -0.86]**	
Heterogeneity: $Tau^2 = 0.75$; $Chi^2 = 71.64$, df = 9 (P < 0.00001); $I^2 = 87\%$									
Test for overall effect: Z = 4.74 (P < 0.00001)									

Test for subgroup differences: $Chi^2 = 4.84$, df = 1 (P = 0.03), $I^2 = 79.3\%$



3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Narrative Evidence

Theme/topic	Findings	Sources
Communication	Increase of self-efficacy in communication skills after training	Awdish 2017; Barbour 2016; Choi 2016; Defunsco 2022; DeVita 2003; Downar 2012; Downar 2017; Hope 2015; Karlsen 2017; Krimshtein 2011; McCallister 2015; Miller 2018; Myers 2021; Shushtari 2021; Seoane 2012; Sullivan 2016; Tamura 2023; Wessman 2017; Yang 2021
	Improvement in varied communication skills, measured during simulation	Downar 2012; Downar 2017; Hope 2015; McCallister 2015
Acceptability	Clinicians found communication skills training to useful/acceptable	Downar 2012; Krimshtein 2011; Marles 2020; Myers 2021; Shushtari 2022
Use of end of life resources	Staff education programs may increase uptake of available end of life resources	McAndrew 2020, Pavlish 2020
Symptom control	Use of the Psychosocial Assessment and Communication Evaluation (PACE) may result in better symptom control	Higginson 2013
Staff knowledge	Knowledge scores of nursing staff improved after an educational intervention ICU trainees palliative care knowledge scores improved after an education intervention	Shushtari 2022, Thanoon 2021, Yang 2021 DeVita 2003
Family outcomes	Families were more satisfied with communcation	Sullivan 2016; Sviri 2019

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Evidence-to-Decision Framework

QUESTION

Should interventions to increase ICU team capacity of providing EOL care vs. usual care be used for adult ICU staff members?	
POPULATION:	adult ICU staff members
INTERVENTION:	interventions to increase ICU team capacity of providing EOL care
COMPARISON:	usual care
MAIN OUTCOMES:	Quality of Death and Dying - RCTs; Quality of Death and Dying - Observational; Quality of communication - RCTs; Quality of communication - Observational; Family satisfaction with care - RCT; Family satisfaction with care - Observational; Proportion of patients with a family meeting - RCT; Proportion of patients with a family meeting - Observational; Time until family conference - Observational; Decisions to withhold/withdraw treatments - RCTs; Decisions to withhold/withdraw treatments - Observational; Completion of ACP/code status - RCT; Completion of ACP/code status - Observational; Mortality - RCTs; Mortality - Observational; Living independently at home - Observational; Family HADS score - Observational; ICU length of stay - RCT; ICU length of stay - Observational; Hospital length of stay - Observational; Financial cost - Observational;

ASSESSMENT

Problem Is the problem a priority?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		ICU clinicians and teams may benefit from palliative care education and capacity-building programs These may have downstream effects upon patient and family outcomes, and improve staff outcomes such as burnout, moral distress, and job satisfaction.

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Desirable Effects

How substantial are the desirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Trivial ○ Small ● Moderate ○ Large ○ Varies ○ Don't know	• Possible improvement in family-rated quality of communication • Possible improvement in family satisfaction with care • Likely reduction in ICU length of stay • Possible reduction in hospital length of stay • Possible reduction in financial costs • Improvement in ICU staff self-efficacy for end of life care skills	There is a descrepency between the results of the large multi-centre trial by Curtis et al (2011) and the other smaller RCTs and observational studies. This may be due to differences in the risk of bias/study quality as well as heterogeneity in the interventions studied (eg. not all educational interventions will be equally effective at changing practice and outcomes in all ICUs).

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Trivial ○ Small ○ Moderate ○ Large ○ Varies ○ Don't know	• Little to no impact upon patient mortality • Unclear impact upon quality of death and dying (inconsistent effects between RCTs showing potential harm and observational studies showing potential benefit) • Unclear impact upon number of family meetings and time until family meetings	There is potential for harm after training due to overconfidence in skills, especially amongst junior trainees and staff whose confidence may be greater than their actual skill level. This is one of the hypothesized mechanisms for the lower QODD ratings seen in the education RCT by Curtis et al (2013).

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Very low ○ Low ○ Moderate ○ High ○ No included studies	Overall low certainty of evidence for most outcomes, other than staff self-efficacy. Very low certainty of evidence for other staff outcomes, which were not reported in many studies.	

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ● Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		There are potential differences in how individuals value these outcomes eg. staff self-efficacy and confidence (perceived or real) vs. the actual communication skills and impact upon patients and families. Clinicians will value the education and patients and families may not if it does not lead to better communication at the bedside.

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ● Probably favors the intervention ○ Favors the intervention ○ Varies ○ Don't know		Overall, likely favours the intervention-- there is improved staff self-efficacy and low certainty evidence that these programs have a positive impact on clinical outcomes as well. We did not address the more complex EOL quality improvement study by Curtis et al (2011), which evaluated a multi-component intervention that included clinician education along with 4 other components, so unable to disentangle the education intervention effects. operated at a systematic level and is distinct from the other studies of EOL education in the ICU.

Resources required

How large are the resource requirements (costs)?"

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ● Varies ○ Don't know		ICU educational interventions can vary in the resources required (educator time, staff time, financial costs) and these can have varied impacts on costs in the ICU depending on the perspective taken (eg. system-level costs).

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Very low ○ Low ○ Moderate ○ High ● No included studies		As above.

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies		

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Reduced ○ Probably reduced ○ Probably no impact ● Probably increased ○ Increased ○ Varies ○ Don't know		There is indirect evidence that palliative care consultation outside of ICU may reduce discrepancies in care (PMID:26324373). Equipping ICU clinicians with better EOL skills may increase equity by raising the overal skill of ICU clinicians in providing palliative care to patients in the unit.

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

Acceptability Is the intervention acceptable to key stakeholders?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know	In multiple studies clinicians found educational interventions acceptable.	Acceptability of the intervention likely relates to timing and setting of educational efforts as much as the content itself.
Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know		There are some barriers to educational interventions, but the existing body of literature demonstrates that these interventions are probably feasible in many settings. It may be dependent upon available resources (eg. academic vs. community setting; large vs. smaller hospital). Most ICUs are likely able to provide some measure of ICU palliative skill training.

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	**Moderate**	Large		Varies	Don't know
UNDESIRABLE EFFECTS	**Trivial**	Small	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	**Very low**	Low	Moderate	High			No included studies

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

	JUDGEMENT						
VALUES	Important uncertainty or variability	**Possibly important uncertainty or variability**	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	**Probably favors the intervention**	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	**Varies**	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED	Very low	Low	Moderate	High			**No included studies**
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	**Probably increased**	Increased	Varies	Don't know
ACCEPTABILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care
CONCLUSIONS

Recommendation

We suggest providing education and training in palliative care for all ICU team members to improve the capacity for providing end-of-life care in the ICU. (conditional recommendation, very low certainty evidence)

Justification

Educational interventions may improve staff self-efficacy and have positive effects upon clinical outcomes, but the certainty of evidence is very low. The resources required and feasibility of educational efforts in the short and long term are likely to vary widely between centres but an approach adapted to the needs and culture of the local ICU is also the most likely to be effective. Given the low certainty of evidence for many outcomes, panel chose to make a conditional recommendation and made suggestions for future research.

There was less certainty about the potential role more complex systematic efforts to improve EOL care in ICU, such as that demonstrated in the quality improvement study by Curtis et al.; this recommendation does not refer to these efforts.

Implementation considerations

The educational interventions should be adapted to the unique needs and culture of the site and the staff as well as consider locally-available resources. This can increase the acceptabiltiy and feasibility of the intervention.

3.2 Interventions to enhance capacity of intensive care unit staff in providing end-of-life care

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3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Evidence Summary

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Intervention	usual care	Relative (95% CI)	Absolute (95% CI)		
Decisions to limit treatments												
9	RCTs	serious[a]	serious[b]	not serious	not serious	none	360/1078 (33.4%)	238/1037 (23.0%)	**RR 1.51** (1.17 to 1.95)	**117 more per 1,000** (from 39 more to 218 more)	⨁⨁◯◯ Low	CRITICAL
Documented goals of care discussions												
10	RCTs	serious[a]	serious[b]	not serious	not serious	none	894/2319 (38.6%)	605/2200 (27.5%)	**RR 1.88** (1.37 to 2.57)	**242 more per 1,000** (from 102 more to 432 more)	⨁⨁◯◯ Low	CRITICAL
Goal-concordant care												
3	RCTs	serious[a]	not serious	not serious	serious[c]	none	111/118 (94.1%)	87/115 (75.7%)	**RR 1.44** (0.81 to 2.55)	**333 more per 1,000** (from 144 fewer to 1000 more)	⨁⨁◯◯ Low	CRITICAL
Length of stay												
3	RCTs	serious[a]	not serious	not serious	serious[c]	none	1353	1358	-	MD **0.24 higher** (0.57 lower to 1.04 higher)	⨁⨁◯◯ Low	CRITICAL
Knowledge												
4	RCTs	not serious[d]	serious[b]	not serious	not serious	none	254	265	-	SMD **0.93 lower** (1.39 lower to 0.47 lower)	⨁⨁⨁◯ Moderate	CRITICAL
Decisional conflict												
4	RCTs	not serious[d]	serious[b]	not serious	serious[c]	none	168	184	-	MD **7.84 lower** (15.72 lower to 0.04 higher)	⨁⨁◯◯ Low	CRITICAL
Quality of communication												
1	RCTs	not serious[d]	not serious	not serious	very serious[e]	none	75	75	-	SMD **0.21 lower** (0.53 lower to 0.11 higher)	⨁⨁◯◯ Low	CRITICAL
Mortality												

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other	Intervention	usual care	Relative (95% CI)	Absolute (95% CI)		
7	RCTs	serious[a]	not serious	not serious	not serious	none	1400/4340 (32.3%)	1091/3882 (28.1%)	**RR 1.08** (1.02 to 1.14)	**22 more per 1,000** (from 6 more to 39 more)	⨁⨁⨁◯ Moderate	IMPORTANT
Patient anxiety symptoms												
3	RCTs	serious[a]	serious[b]	not serious	serious[c]	none	81	87	-	SMD **0.41 lower** (0.99 lower to 0.16 higher)	⨁◯◯◯ Very low	IMPORTANT
Patient depression symptoms												
2	RCTs	serious[a]	serious[b]	not serious	serious[c]	none	74	83	-	SMD **0.23 lower** (0.55 lower to 0.09 higher)	⨁◯◯◯ Very low	IMPORTANT

CI: confidence interval; **MD:** mean difference; **RR:** risk ratio; **SMD:** standardised mean difference

Explanations

a. Most studies had significant loss to follow-up, resulting in serious risk of bias.
b. High statistical heterogeneity (I2>60%), with markedly different effect estimates between studies, resulting in serious inconsistency.
c. Small number of studies and events resulting in optimal information size not being met, resulting in serious imprecision.
d. Rates of loss to follow-up in studies was low for outcomes measured immediately post-intervention.
e. All data comes from a single small study, resulting in serious imprecision.

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

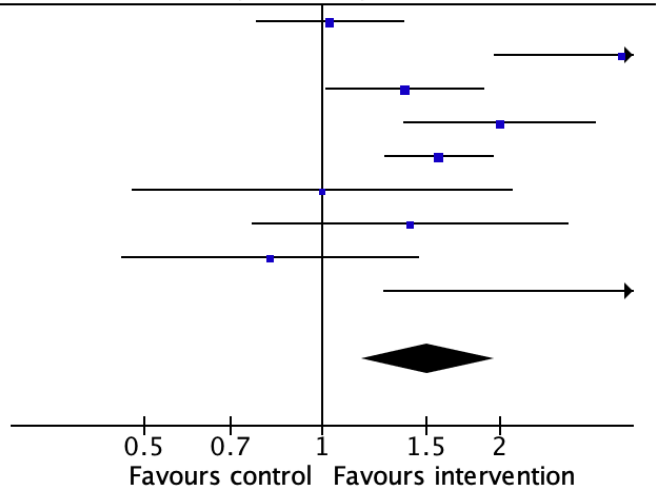
Forest plots

1. Decisions to limit/withhold treatment

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
Ahronheim 2000	32	48	33	51	14.9%	1.03 [0.77, 1.37]	2000
Detering 2010	29	70	20	155	10.9%	3.21 [1.96, 5.27]	2010
Jacobsen 2011	99	517	53	382	14.5%	1.38 [1.02, 1.87]	2011
El-Jawahri 2015	48	75	24	75	13.2%	2.00 [1.38, 2.90]	2015
El-Jawahri 2016	93	123	59	123	16.3%	1.58 [1.28, 1.94]	2016
Richardson-Royer 2018	11	50	11	50	7.3%	1.00 [0.48, 2.09]	2018
Krones 2022	18	57	13	58	8.9%	1.41 [0.76, 2.60]	2019
Kobewka 2021	17	99	21	100	9.5%	0.82 [0.46, 1.45]	2021
Lin 2021	13	39	4	43	4.6%	3.58 [1.27, 10.07]	2021
Total (95% CI)		**1078**		**1037**	**100.0%**	**1.51 [1.17, 1.95]**	
Total events	360		238				

Heterogeneity: $Tau^2 = 0.09$; $Chi^2 = 26.84$, df = 8 (P = 0.0008); $I^2 = 70\%$

Test for overall effect: Z = 3.16 (P = 0.002)

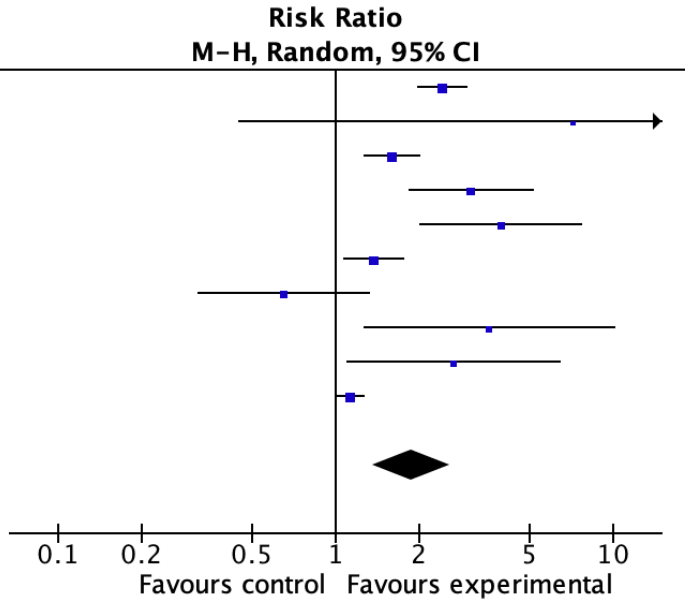


2. Documented goals of care discussions/advanced directives

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
Nicolasora 2006	125	136	61	161	14.4%	2.43 [1.98, 2.97]	2006
Sampson 2010	7	22	0	10	1.2%	7.17 [0.45, 114.61]	2010
Jacobsen 2011	175	517	81	382	14.2%	1.60 [1.27, 2.00]	2011
El-Jawahri 2015	43	75	14	75	10.9%	3.07 [1.84, 5.12]	2015
El-Jawahri 2016	40	66	8	52	9.1%	3.94 [2.02, 7.67]	2016
Krones 2022	31	35	29	45	14.0%	1.37 [1.07, 1.76]	2019
Kobewka 2021	11	99	17	100	8.6%	0.65 [0.32, 1.32]	2021
Lin 2021	13	39	4	43	5.8%	3.58 [1.27, 10.07]	2021
Lee 2022	16	75	6	75	6.9%	2.67 [1.10, 6.44]	2022
Curtis 2023	433	1255	385	1257	15.0%	1.13 [1.01, 1.26]	2023
Total (95% CI)		**2319**		**2200**	**100.0%**	**1.88 [1.37, 2.57]**	
Total events	894		605				

Heterogeneity: $Tau^2 = 0.17$; $Chi^2 = 72.40$, df = 9 (P < 0.00001); $I^2 = 88\%$

Test for overall effect: Z = 3.94 (P < 0.0001)

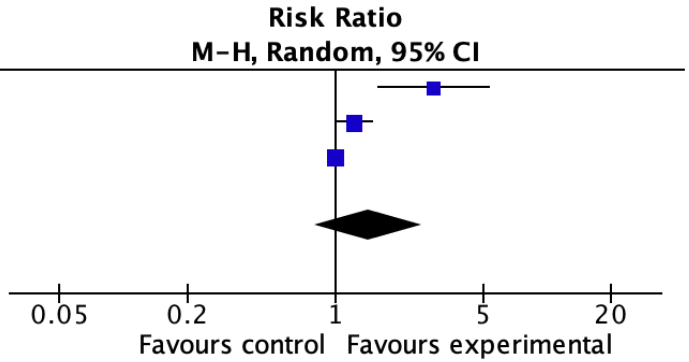


3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

3. Goal-concordant care

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
Detering 2010	25	29	8	27	26.6%	2.91 [1.60, 5.30]	2010
El-Jawahri 2015	52	54	25	32	36.1%	1.23 [1.02, 1.49]	2015
Krones 2022	34	35	54	56	37.3%	1.01 [0.93, 1.09]	2019
Total (95% CI)		**118**		**115**	**100.0%**	**1.44 [0.81, 2.55]**	
Total events	111		87				

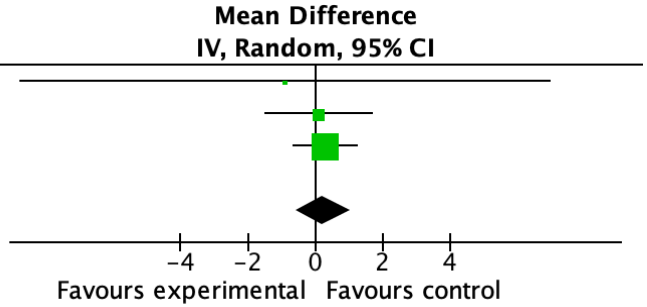
Heterogeneity: $Tau^2 = 0.23$; $Chi^2 = 47.63$, df = 2 ($P < 0.00001$); $I^2 = 96\%$
Test for overall effect: Z = 1.24 (P = 0.21)



4. Length of stay

Study or Subgroup	Experimental Mean	Experimental SD	Experimental Total	Control Mean	Control SD	Control Total	Weight	Mean Difference IV, Random, 95% CI	Year
Ahronheim 2000	8.8	23	48	9.7	16	51	1.0%	-0.90 [-8.75, 6.95]	2000
Richardson-Royer 2018	4.5	4.9	50	4.4	2.83	50	26.1%	0.10 [-1.47, 1.67]	2018
Curtis 2023	8.4	11.9	1255	8.1	12.1	1257	72.9%	0.30 [-0.64, 1.24]	2023
Total (95% CI)			**1353**			**1358**	**100.0%**	**0.24 [-0.57, 1.04]**	

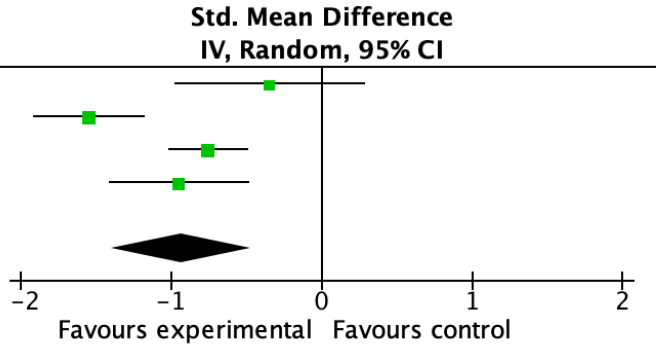
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.13$, df = 2 ($P = 0.94$); $I^2 = 0\%$
Test for overall effect: Z = 0.58 (P = 0.56)



5. Knowledge of end of life treatment options

Study or Subgroup	Experimental Mean	Experimental SD	Experimental Total	Control Mean	Control SD	Control Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
Matlock 2011	-4.7	1.3	17	-3.7	3.5	24	20.1%	-0.35 [-0.97, 0.28]	2011
El-Jawahri 2015	-4.11	1.13	75	-2.45	1	75	26.6%	-1.55 [-1.91, -1.18]	2015
El-Jawarhri 2016	-4.1	1.4	123	-3	1.5	123	29.0%	-0.76 [-1.01, -0.50]	2016
Lin 2021	-4.9	2.6	39	-2.6	2.2	43	24.3%	-0.95 [-1.41, -0.49]	2021
Total (95% CI)			**254**			**265**	**100.0%**	**-0.93 [-1.39, -0.47]**	

Heterogeneity: $Tau^2 = 0.17$; $Chi^2 = 15.96$, df = 3 ($P = 0.001$); $I^2 = 81\%$
Test for overall effect: Z = 3.95 ($P < 0.0001$)

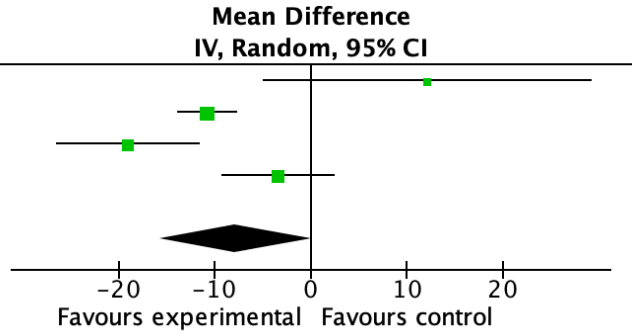


3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

6. Decisional Conflict

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Year
Sampson 2010	30.9	20	7	18.8	8.6	4	13.1%	12.10 [-4.95, 29.15]	2010
Matlock 2011	5	1	17	15.8	7.5	24	32.2%	-10.80 [-13.84, -7.76]	2011
Krones 2022	14.44	13.1	45	33.51	23.99	56	26.1%	-19.07 [-26.43, -11.71]	2019
Kobewka 2021	18.6	18.9	99	22	22.4	100	28.6%	-3.40 [-9.16, 2.36]	2021
Total (95% CI)			**168**			**184**	**100.0%**	**-7.84 [-15.72, 0.04]**	

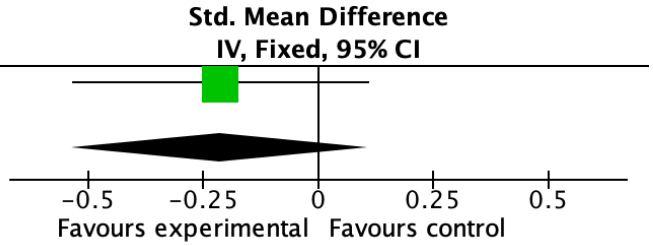
Heterogeneity: Tau² = 47.87; Chi² = 17.60, df = 3 (P = 0.0005); I² = 83%
Test for overall effect: Z = 1.95 (P = 0.05)



7. Quality of communication, measured using Quality of Communication Score

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Fixed, 95% CI	Year
Lee 2022	-28.5	22.8	75	-23.9	20.2	75	100.0%	-0.21 [-0.53, 0.11]	2022
Total (95% CI)			**75**			**75**	**100.0%**	**-0.21 [-0.53, 0.11]**	

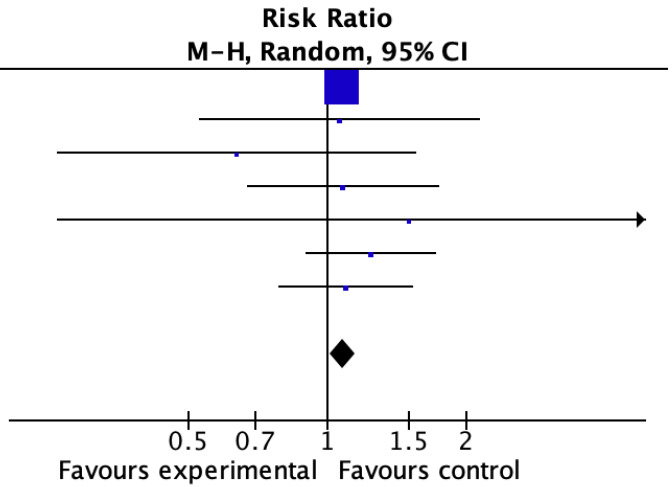
Heterogeneity: Not applicable
Test for overall effect: Z = 1.30 (P = 0.19)



8. Mortality

Study or Subgroup	Experimental Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
SUPPORT 1995	1249	2652	943	2152	90.4%	1.07 [1.01, 1.14]	1995
Ahronheim 2000	12	48	12	51	0.7%	1.06 [0.53, 2.13]	2000
Nicolasora 2006	7	136	13	161	0.4%	0.64 [0.26, 1.55]	2006
Detering 2010	29	154	27	155	1.6%	1.08 [0.67, 1.74]	2010
Richardson-Royer 2018	3	50	2	50	0.1%	1.50 [0.26, 8.60]	2018
Krones 2022	30	45	30	56	3.5%	1.24 [0.90, 1.71]	2019
Curtis 2023	70	1255	64	1257	3.3%	1.10 [0.79, 1.52]	2023
Total (95% CI)		**4340**		**3882**	**100.0%**	**1.08 [1.02, 1.14]**	
Total events	1400		1091				

Heterogeneity: Tau² = 0.00; Chi² = 2.28, df = 6 (P = 0.89); I² = 0%
Test for overall effect: Z = 2.50 (P = 0.01)



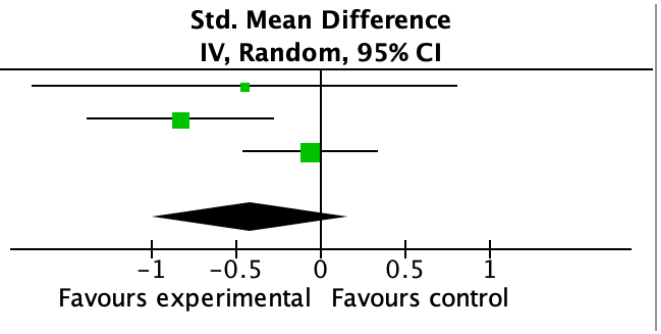
3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

9. Patient anxiety symptoms, measured using HADS-A, GAD-7 or STAXI

	Experimental			Control				Std. Mean Difference	
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**Weight**	**IV, Random, 95% CI**	**Year**
Sampson 2010	10.4	0.9	7	11	1.7	4	15.5%	−0.45 [−1.70, 0.80]	2010
Detering 2010	0	2.6	29	3	4.4	27	38.3%	−0.83 [−1.37, −0.28]	2010
Krones 2022	4.22	3.87	45	4.44	3.25	56	46.2%	−0.06 [−0.45, 0.33]	2019
Total (95% CI)			**81**			**87**	**100.0%**	**−0.41 [−0.99, 0.16]**	

Heterogeneity: $Tau^2 = 0.15$; $Chi^2 = 4.98$, df = 2 (P = 0.08); $I^2 = 60\%$

Test for overall effect: Z = 1.42 (P = 0.16)

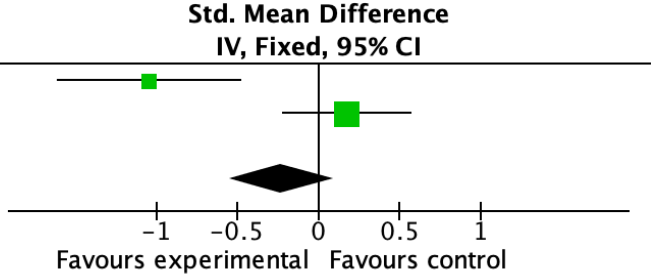


10. Patient depression symptoms, measured using HADS-D or PHQ-8

	Experimental			Control				Std. Mean Difference	
Study or Subgroup	**Mean**	**SD**	**Total**	**Mean**	**SD**	**Total**	**Weight**	**IV, Fixed, 95% CI**	**Year**
Detering 2010	0	1.1	29	5	6.7	27	32.9%	−1.05 [−1.61, −0.48]	2010
Krones 2022	5.73	4.24	45	5.04	3.67	56	67.1%	0.17 [−0.22, 0.57]	2019
Total (95% CI)			**74**			**83**	**100.0%**	**−0.23 [−0.55, 0.09]**	

Heterogeneity: $Chi^2 = 12.16$, df = 1 (P = 0.0005); $I^2 = 92\%$

Test for overall effect: Z = 1.38 (P = 0.17)



3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Evidence-to-Decision Framework

QUESTION

Should interventions to improve understanding and expectations of ICU and end of life care vs. usual care be used for hospitalized patients at risk of ICU admission?	
POPULATION:	hospitalized patients at risk of ICU admission
INTERVENTION:	interventions to improve understanding and expectations of ICU and end of life care
COMPARISON:	usual care
MAIN OUTCOMES:	Decisions to limit treatments; Documented goals of care discussions; Goal-concordant care; Length of stay; Knowledge; Decisional conflict; Quality of communication; Mortality; Patient anxiety symptoms; Patient depression symptoms;

ASSESSMENT

Problem
Is the problem a priority?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		Patients with serious illness (either acute or chronic) are at risk of ICU admission, which may or may not be congruent with their values and preferences for care. Interventions to educate and assist with decision-making in the inpatient setting, before ICU is needed, may help to limit unwanted treatments in ICU and allow incorporation of palliation of symptoms at end of life.

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Desirable Effects How substantial are the desirable anticipated effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Trivial ○ Small ○ Moderate ● Large ○ Varies ○ Don't know	• May result in a greater number of decisions to limit treatments (~12%) • May result in increased documented goals of care discussions (24%) • May result in more goal-concordant care (53%) • Likely results in greater knowledge of life-sustaining treatment and end of life options • May result in lower decisional conflict scores (8 point difference) • May result in improved communication scores	User manual for decisional conflict score states that scores <25 are associated with implementing decisions, and scores exceeding 37.5 are assocaited with decision delay (https://decisionaid.ohri.ca/docs/develop/User_Manuals/UM_Decisional_Conflict.pdf)
Undesirable Effects How substantial are the undesirable anticipated effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Trivial ● Small ○ Moderate ○ Large ○ Varies ○ Don't know	Likely increase in mortality (2.2% absolute risk).	Unclear if increase in mortality is an undesirable effect, especially if goal-concordant care is increased. The populations studied have high mortality rates. The intervention itself is not increasing mortality directly-- it can only do so by providing patients with information around choices and encouraging them to share those choices. The desirable effect to adhere to goals as set forth by the individual patient. It appears that it does tailor treatments as per the other outcomes measured.

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Certainty of evidence What is the overall certainty of the evidence of effects?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Very low ● Low ○ Moderate ○ High ○ No included studies	Certainty of evidence for most critical outcomes is low due to risk of bias (primarily from loss to follow-up), inconsistency, or imprecision.	
Values Is there important uncertainty about or variability in how much people value the main outcomes?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
● Important uncertainty or variability ○ Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability		Clinicians and patients may struggle to identify the best outcomes in these sorts of situations; values and preferences are likely to vary between individuals.

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Balance of effects Does the balance between desirable and undesirable effects favor the intervention or the comparison?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ● Favors the intervention ○ Varies ○ Don't know	There are few undesirable effects; most outcomes were positively impacted by the interventions. The small increase in mortality is of questionable importance and difficult to interpret without knowing the patients underlying values and preferences (which were also improved by these interventions)	There are going to be a small number of patients/families who may not wish to engage in these educational interventions, or find them to be coercive-- this was not seen in the current body of literature.
Resources required How large are the resource requirements (costs)?"		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ● Varies ○ Don't know		Intervention itself may have varied costs depending on the implementation approach (eg. staff costs vs. costs to develop and provide decision-aids). Avoiding unwanted treatments-- ICU admissions, CPR, intubation etc. may in fact be cost-saving. May also reduce moral distress. Overall costs are not likely to be large-- we are uncertain if this is moderate costs, or negligible, or cost saving, and it likely varies depending on the specific intervention.

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Certainty of evidence of required resources What is the certainty of the evidence of resource requirements (costs)?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Very low ○ Low ○ Moderate ○ High ● No included studies		Very low certainty due to lack of studies.
Cost effectiveness Does the cost-effectiveness of the intervention favor the intervention or the comparison?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ● No included studies	No included studies.	

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

Equity What would be the impact on health equity?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Reduced ○ Probably reduced ○ Probably no impact ○ Probably increased ● Increased ○ Varies ○ Don't know	One study demonstrated larger effect size for documented goals of care conversations in racialized and ethnically minoritized populations. (Curtis 2023)	Providing patients with education allows a more robust informed consent process, with better understanding of options and expectations. This is likely to increase health equity, especially for individuals with limited health literacy/experience. It may be empowering for these groups. It requires the educational materials to be accessible and understandable to the populations being cared for. Avoiding unwanted treatments in ICU may increase availability for others and equity in resource poor environments.
Acceptability Is the intervention acceptable to key stakeholders?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know	Lee et al. reported good acceptability and feasibility Matlock et al. --intervention was rated as acceptable	
Feasibility Is the intervention feasible to implement?		
JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know	Matlock et al. feasibility of implementation limited by late-life illness challenges (low eligibility, loss to follow up because of death)	Feasible to implement -- less data on sustainability over time.

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	Moderate	**Large**		Varies	Don't know
UNDESIRABLE EFFECTS	Trivial	**Small**	Moderate	Large		Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	**Low**	Moderate	High			No included studies
VALUES	**Important uncertainty or variability**	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	**Favors the intervention**	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	**Varies**	Don't know
CERTAINTY OF EVIDENCE OF REQUIRED	Very low	Low	Moderate	High			**No included studies**
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	**No included studies**
EQUITY	Reduced	Probably reduced	Probably no impact	Probably increased	**Increased**	Varies	Don't know
ACCEPTABILITY	No	Probably no	Probably yes	**Yes**		Varies	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

3.3 Interventions to improve understanding and expectations for treatments and end-of-life care for patients at risk of needing ICU

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

CONCLUSIONS

Recommendation

We suggest clinicians provide educational interventions to patients/families at risk of ICU admission to improve their understanding of ICU and end of life treatment options, realistic treatment outcomes, and advance care planning. (Conditional recommendation, low certainty evidence)

Justification

A variety of educational interventions (paper, video, etc) have been demonstrated to improve patient knowledge and decisional comfort, and result in more decisions to withhold or withdraw treatments, suggesting that in many cases, informed patients are likely to want to forgo ICU interventions. We did not identify any major downsides; the primary uncertainty is about resources and the impact of these, which is expected to vary with the type of intervention implemented. Patients and families who are struggling with decision-making and having discussions about end of life care may decline education, but in most instances it should be provided.

Implementation considerations

- interventions should be tailored to the population; needs to be accessible, understandable, relevant (eg. language, culture, visual/auditory materials) in order to be effective and equitable

Research priorities

- little data available on costs -- this may be important for justifying implementation; also important for patients and families who are financial stakeholders in care

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