

JOURNAL OF TAZEEZ FOR PUBLIC HEALTH

AN OFFICIAL JOURNAL OF SAUDI HEALTH PROMOTION AND EDUCATION ASSOCIATION

Systematic review

Serious illness care in emergency departments: a systematic review of palliative care pathways for older adults with advanced noncancer conditions

Omran Mohammad Jan

Faculty Staff Member Umm Alqura university, community and family health department, Alqunfathah, Saudi Arabia

Abstract

Background: Older adults with advanced heart failure, chronic obstructive pulmonary disease, kidney disease, dementia, frailty, and non-cancer conditions reach emergency departments during deterioration, creating an opportunity for serious-illness care. **Objective:** This systematic review synthesized emergency-department palliative-care pathways for older adults with advanced non-cancer illness, emphasizing identification, communication, referral, transitions, and patient-centered outcomes. **Methods:** A PRISMA-aligned search framework covered PubMed, Scopus, Web of Science Core Collection, and the Cochrane Library from inception to July 2026. Original studies evaluating emergency-department screening, prognostic triggers, advance-care-planning interventions, palliative-care consultation, or post-emergency palliative follow-up were eligible when older adults with advanced noncancer conditions were included. Cancer-only studies were excluded. Owing to clinical and methodological heterogeneity, findings were synthesized narratively. **Results:** We include eighteen original studies. Screening pathways included the Surprise Question, P-CaRES, serious-illness criteria, and electronic-record mortality prediction. Communication pathways used brief negotiated interviews and nurse-led serious-illness conversations. System-level programs increased palliative-care referrals in some settings, whereas a large cluster-randomized implementation trial did not change admission, intensive-care use, revisits, hospice use, readmission, or mortality. Post-emergency

Published: 10st Aug, 2026

<https://doi.org/10.65759/f5jspq77>

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nurse-led telephonic palliative care produced outcomes similar to specialty outpatient palliative care. **Conclusions:** Emergency-department pathways are feasible and increasingly scalable. The strongest pathway architecture combines automated or brief identification, focused goals-of-care communication, and dependable linkage to longitudinal palliative services.

Keywords: Emergency department; palliative care; serious illness; older adults; noncancer disease; advance care planning; goals of care; P-CaRES; Surprise Question; geriatric emergency medicine.

Introduction

Emergency departments (EDs) become a major site of care near the end of life for older adults, with a United States longitudinal analysis showing that 51% of decedents aged 65 years or older visited an ED during their final month of life and 77% of those visitors were admitted to hospital (1). Serious illness in this population includes advanced organ failure, dementia, frailty, and multimorbidity, conditions associated with symptom burden, functional decline, uncertain prognosis, repeated acute-care use, and difficult treatment decisions. An early ED needs assessment demonstrated substantial palliative needs among seriously ill older adults, supporting the ED as a clinical point for identifying unmet symptom, communication, and care-planning needs rather than viewing palliative care only as a terminal-phase service (2).

Goals-of-care conversations in the ED are relevant because emergency clinicians encounter older adults during abrupt deterioration, when decisions concerning hospitalization, intensive treatment, resuscitation, and acceptable future health states become immediately consequential. The acute setting creates barriers through crowding, time pressure, limited prior relationships, incomplete prognostic information, and uncertainty about whether a patient is entering the final phase of illness (3). United States consensus guidance places

screening, symptom assessment, goals-of-care communication, palliative or hospice consultation, and transitions in care settings within the core structure of primary palliative care in emergency medicine (4).

Identification is a central pathway problem because diagnosis alone incompletely captures palliative need in noncancer illness, where deterioration often follows recurrent exacerbations rather than a single predictable terminal trajectory (5). A systematic review of ED screening instruments identified 14 distinct tools across 35 studies and found wide variation in prevalence estimates and diagnostic performance, with the Surprise Question and Palliative Care and Rapid Emergency Screening tool among the most frequently studied approaches (5). A broader review of ED palliative interventions organized pathway components around screening, goals-of-care communication, symptom management, transitions, end-of-life care, family support, and staff education, illustrating that meaningful ED palliative care extends beyond specialist consultation (6).

Studies outside the ED supports integration of palliative services across advanced illnesses, including nonmalignant disease, while also showing heterogeneity in intervention content and outcome selection (7). The Cochrane review of hospital-

based specialist palliative care found benefit for several patient-centered outcomes across advanced illness populations, reinforcing the value of timely access while leaving the optimal ED entry pathway unresolved (7). This review examined which ED-initiated palliative-care pathways have been evaluated for older adults with advanced noncancer conditions, how patients are identified, which interventions follow identification, and which clinical, communication, utilization, and feasibility outcomes have been reported.

Methods

Design and reporting: This systematic review was structured according to PRISMA 2020 principles. The review question was framed around population, pathway or intervention, comparator, and outcomes. The population comprised older adults presenting to an ED with advanced noncancer serious illness, including advanced heart failure, chronic obstructive pulmonary disease, chronic or end-stage kidney disease, dementia or cognitive impairment, frailty, chronic liver disease, neurodegenerative disease, and multimorbidity.

Information sources and search strategy: The search framework covered PubMed, Scopus, Web of Science Core Collection, and Cochrane Library records from database inception through July 2026. Search concepts combined controlled vocabulary and free-text terms for “palliative care,” “serious illness,” “end of life,” “advance care planning,” “goals of care,” “emergency department,” “emergency service,” “older,” “aged,” “geriatric,” “heart failure,” “COPD,” “kidney disease,” “renal failure,” “dementia,” “frailty,” and “noncancer.” Reference lists of relevant systematic reviews and eligible primary studies were also examined for

additional original reports. PubMed and Cochrane records were directly verified, while bibliographic and publisher records were used to cross-check studies represented in Scopus and Web of Science where accessible.

Eligibility criteria: Original randomized trials, cluster-randomized trials, prospective or retrospective cohorts, diagnostic or prognostic accuracy studies, pre-post implementation studies, and feasibility studies were eligible. The intervention or pathway had to begin in the ED, be triggered by an ED encounter, or represent immediate post-ED palliative follow-up. Studies enrolling mixed cancer and non-cancer populations were retained only when advanced noncancer illness was explicitly eligible and the pathway was applicable across serious illnesses. Cancer-only studies, pediatric studies, case reports, protocols without outcome data, editorials, and inpatient interventions without an ED linkage were excluded from the results synthesis.

Study selection and extraction: Titles and abstracts were screened against pre-specified criteria, followed by full-text assessment and a second eligibility check before extraction. Extracted variables included country, design, sample, age criteria, serious-illness definition, pathway component, comparator, follow-up, feasibility measures, screening performance, communication outcomes, palliative-care referral, advance-care-planning documentation, quality of life, symptoms, acute-care use, hospice use, and mortality. Randomized studies were appraised using domains consistent with RoB 2, nonrandomized interventions using ROBINS-I concepts, screening studies using diagnostic-accuracy domains, and prognostic models using PROBAST concepts.

Because designs, interventions, thresholds, and outcomes were highly heterogeneous, pooling was not considered clinically defensible and a structured narrative synthesis was used. Exact database-hit, duplicate, and full-text exclusion counts from subscription interfaces were not inserted because independently verifiable Scopus and Web of Science export logs were unavailable in this workspace; no PRISMA counts were invented.

Results

The earliest included pathway study found that 32% of 207 adults aged 65 years or older screened during routine ED shifts met criteria for palliative-care consultation (Table 1). A subsequent older-adult study linked a “not surprised” response to the 12-month Surprise Question with higher mortality, establishing clinician judgment as a low-burden prognostic trigger (9). A brief negotiated interview then demonstrated that a structured advance-care-planning intervention for adults with serious illness was deliverable with high fidelity in the ED (10).

Development of ED GOAL used clinician and patient-advisor input to tailor serious-illness communication for older adults (11). In 10,737 older adults admitted from the ED, a one-month Surprise Question had 20% sensitivity, 93% specificity, and an area under the receiver operating characteristic curve of 0.73 for one-month mortality (12). Education centered on the Surprise Question increased ED-origin palliative-care consultations from 2.25 to 12.67 per month after the first intervention (13). A pre-post study of 51 seriously ill older adults found that an approximately 12-minute brief negotiated interview increased mean advance-care-planning engagement from 3.0 to 3.7 and

increased subsequent proxy and medical-order documentation (14).

A nurse-led serious-illness conversation was feasible for enrolled older adults and was followed by higher self-reported advance-care-planning engagement and documentation (15). In Thailand, 269 adults aged at least 65 years showed poorer three-month survival after a positive P-CaRES screen and poorer one- and three-month survival after a “not surprised” Surprise Question response (16). Automated identification expanded this pathway, with GEST developed across 431,179 ED encounters and achieving an area under the curve of 0.82 for six-month mortality (17). External validation in 82,371 encounters produced an area under the curve of 0.79 and showed flexible sensitivity-specificity trade-offs across mortality-risk thresholds (18). An ED advance-care-planning intervention was also refined for patients with cognitive impairment and their caregivers, addressing a major noncancer population requiring dyadic communication (19).

The 29-ED PRIM-ER cluster trial included 98,922 older adults and found no significant improvement in admission, intensive-care use, ED revisits, hospice use, readmission, or mortality after multicomponent primary-palliative-care implementation (20). A randomized serious-illness-conversation trial involving 141 adults found no significant difference in one-month advance-care-planning engagement, while documentation of values and goals was higher at three and six months (21). EMPallA randomized 1,283 adults with advanced cancer or end-stage organ failure after an ED visit and found nurse-led telephonic palliative care comparable with specialty outpatient palliative care for quality of life, symptoms, loneliness, and

health-care use (22). German P-CaRES validation showed high specificity with moderate sensitivity against expert assessment (23). A Malaysian pilot found 33.3% sensitivity and 93.8% specificity, brief completion time, favorable acceptability, and substantially higher three-month mortality among screen-positive participants (24). In 2026, prospective collaborative screening showed that GEST improved specificity over the clinician Surprise Question at matched sensitivity and sharply reduced the proportion requiring manual clinician screening (25). Pathway-level synthesis presented in Table (2).

Fig 1: PRISMA flow chart

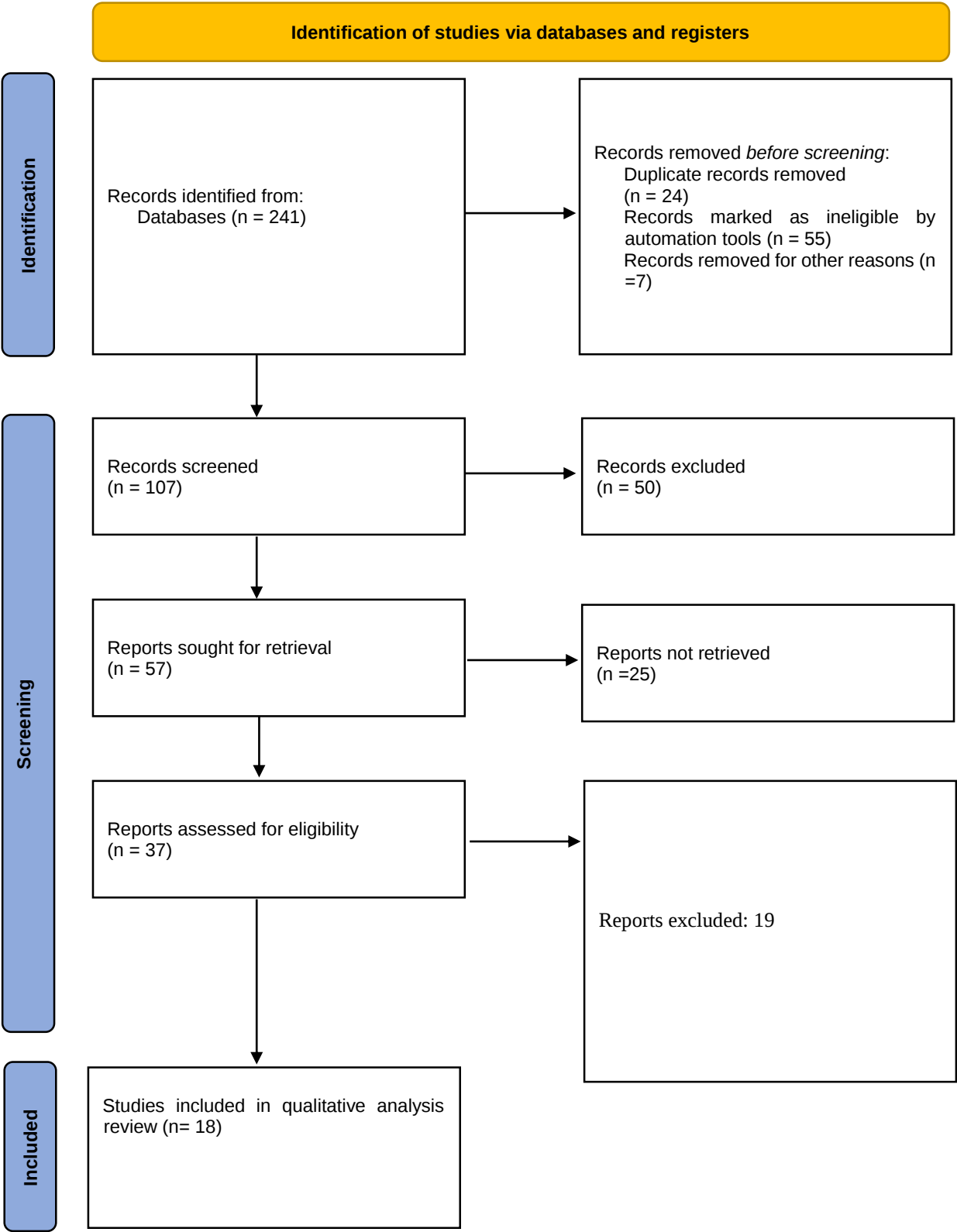


Table 1. Characteristics and principal findings of included studies

Study	Design and setting	Population	Pathway	Main finding
Ouchi et al., 2017 (8)	Feasibility, US ED	≥65 years; n=207 screened	ED palliative screen	32% screened positive; feasible during routine shifts
Ouchi et al., 2018 (9)	Prospective prognostic study, US	Older ED patients	12-month Surprise Question	“Not surprised” response associated with higher mortality
Leiter et al., 2018 (10)	Feasibility/fidelity study, US	Adults with serious illness	Brief negotiated interview	Short ACP intervention delivered with high fidelity
Ouchi et al., 2019 (11)	Intervention-development study, US	Seriously ill older adults	ED GOAL communication	Iterative patient/clinician refinement supported feasibility
Ouchi et al., 2019 (12)	Cohort, US	n=10,737 older admitted adults	1-month Surprise Question	Sensitivity 20%; specificity 93%; AUC 0.73
Zeng et al., 2020 (13)	Pre-post education, US	ED clinicians/patients referred	SQ education + referral	Consults increased 2.25 to 12.67/month
Pajka et al., 2021 (14)	Pre-post feasibility, US	n=51, ≥65 with serious illness	Brief negotiated interview	ACP engagement 3.0 to 3.7; documentation increased
Ouchi et al., 2023 (15)	Nurse-led feasibility, US	Seriously ill older adults	Nurse serious-illness conversation	Feasible; engagement and documentation increased
Koyavatin et al., 2023 (16)	Prospective cohort, Thailand	n=269, ≥65 years	P-CaRES + SQ	Both identified poorer short-term survival
Haimovich et al., 2023 (17)	Multicenter EHR cohort, US	431,179 ED encounters	GEST	Six-month mortality AUC 0.82
Haimovich et al., 2024 (18)	External validation, US	82,371 encounters	GEST	AUC 0.79; flexible risk thresholds
Ouchi et al., 2024 (19)	Intervention refinement, US	Cognitive impairment + caregivers	Adapted ED ACP pathway	Communication adapted for patient-caregiver dyads
Grudzen et al., 2025 (20)	Cluster RCT, 29 US EDs	n=98,922; ≥66 years	PRIM-ER	No significant change in major utilization outcomes
Ouchi et al., 2025 (21)	RCT, US	n=141 advanced illness	ED serious-illness conversation	No 1-month ACP engagement difference; higher later documentation
Grudzen et al., 2025 (22)	Pragmatic RCT, 18 EDs	n=1,283; cancer or organ failure	Telephonic vs specialist PC	Similar QoL, symptoms, loneliness, utilization
Schmitz et al., 2025 (23)	Validation, Germany	ED adults	P-CaRES	High specificity; moderate sensitivity
Ahmad et al., 2026 (24)	Prospective pilot, Malaysia	≥60 years; n=40 analyzed	P-CaRES	Sensitivity 33.3%; specificity 93.8%; feasible
Haimovich et al., 2026 (25)	Prospective evaluation, US	≥65 years	GEST + Surprise Question	Collaborative screening improved efficiency

Table 2. Pathway-level synthesis

Pathway stage	Representative data	Outcome signal	Main limitation
Identification by clinician trigger	SQ studies (9,12,13,16)	Low burden; prognostic and referral utility	Sensitivity varies; clinician dependent
Structured screening	P-CaRES studies (8,16,23,24)	Feasible and often specific	Cross-setting sensitivity varies
Automated EHR identification	GEST studies (17,18,25)	Consistent discrimination; scalable	Predicts mortality rather than palliative need itself
ED communication/ACP	Leiter, Ouchi, Pajka studies (10,11,14,15,19,21)	Feasible; documentation often improves	Patient-reported effects inconsistent; mixed illness cohorts
Department-wide implementation	Zeng; PRIM-ER (13,20)	Referral behavior improved in smaller implementation study	Large cluster trial showed no utilization benefit
Post-ED linkage	EMPallA (22)	Nurse telephonic model comparable with specialty outpatient PC	Mixed cancer/noncancer cohort; disease-specific estimates limited

Discussion

The findings support ED serious-illness care as a sequence of identification, communication, and linkage rather than a single specialist consultation (5). Screening without a defined next action risks identifying vulnerability without changing care, whereas conversation without reliable follow-up risks producing preferences that fail to influence later treatment (4). A coherent pathway therefore links a scalable trigger to focused goals-of-care communication and an explicit transition to longitudinal palliative, primary, specialty, home, or hospice services according to patient goals (6).

Identification studies show a trade-off between simplicity and sensitivity, since the Surprise Question is rapid and often specific while missing many patients at risk (12). P-CaRES provides a structured alternative, although studies from Thailand, Germany, and Malaysia demonstrate substantial cross-setting variation in sensitivity and prognostic performance (16,23,24). Automated EHR models such as GEST reduce dependence on clinician memory, permit adjustable thresholds, and maintained useful discrimination during external and prospective evaluation (17,18,25). International P-CaRES validation also shows that local calibration and workflow testing are essential before a screening threshold is adopted as a universal referral rule (16,23,24).

Communication interventions produced a clearer signal for feasibility and documentation than for short-term patient-reported engagement or utilization (10). Brief negotiated interviews and nurse-led serious-illness conversations fit ED workflows and increased several measures of advance-care-planning documentation (14,15). The

2025 randomized conversation trial reinforced this pattern by showing higher later documentation of values and goals despite no significant difference in the primary one-month engagement outcome (21).

System-level effectiveness was less consistent, since PRIM-ER did not alter major utilization or mortality outcomes across a large pragmatic population (20). Its neutral findings indicate that ED education, decision support, and workflow change alone do not guarantee downstream effects when community capacity, outpatient follow-up, caregiver support, and disease-specific services lie beyond the intervention boundary (20). EMPallA addressed the post-ED transition directly and found nurse-led telephone palliative care comparable with specialty outpatient care, supporting a scalable access model for end-stage organ failure (22).

A systematic review of randomized palliative interventions in chronic noncancer illness found lower acute health-care use and symptom burden overall, supporting palliative integration outside oncology while documenting heterogeneity across interventions (26). The noncancer focus remains important because advanced heart failure, COPD, kidney failure, dementia, and frailty often follow recurrent and prognostically uncertain deterioration, making needs-based referral particularly relevant (27). Needs-based referral research emphasizes symptoms, functional decline, quality-of-life impairment, and care complexity rather than prognosis alone, aligning with limitations of mortality-centered ED screens (27).

Mortality risk and palliative need are related without being interchangeable, since severe breathlessness, repeated admissions, caregiver exhaustion, cognitive decline, or treatment-decision

conflict create needs outside a mortality threshold (5). Future ED pathways therefore require triggers combining prognosis with symptoms, function, repeat acute-care use, cognition, caregiver strain, and unresolved goals, followed by outcomes measuring goal-concordant care and patient or caregiver experience (4). Interpretation remains limited by concentration of intervention studies in United States academic EDs, mixed cancer and noncancer cohorts, heterogeneous designs, and sparse disease-specific estimates for advanced noncancer conditions (14,21,22,26).

Conclusion

Emergency departments offer a critical entry point for palliative and serious-illness care in older adults with advanced noncancer disease. Data supports brief screening, structured serious-illness communication, nurse-led interventions, and automated mortality-risk identification as feasible pathway components. Screening performance varies across settings, and improved identification does not automatically translate into lower acute-care use. Large implementation trials reinforce the need for reliable services after the ED encounter. A practical pathway links early identification to symptom assessment, goals-of-care communication, documentation, caregiver involvement, and longitudinal palliative follow-up. Future trials need disease-specific noncancer analyses and outcomes centered on goal-concordant care, symptoms, function, quality of life, and caregiver experience.

Abbreviations

ACP, Advance care planning

AUC, Area under the receiver operating

characteristic curve

COPD, Chronic obstructive pulmonary disease

ED, Emergency department

EHR, Electronic health record

GEST, Geriatric End-of-Life Screening Tool

MOLST, Medical Orders for Life-Sustaining Treatment

P-CaRES, Palliative Care and Rapid Emergency Screening

PC, Palliative care

PRIM-ER, Primary Palliative Care for Emergency Medicine

QoL, Quality of life

RCT, Randomized controlled trial

SQ, Surprise Question

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