

Appendix 2 Excluded studies

Reference	Reason for Exclusion
Agrawal N, Hope A, Gong M. Frailty and post-intensive care syndrome in older adult survivors of critical illness. <i>J Am Geriatr Soc</i> 2019;67:S327.	Conference abstract
Amado-Rodríguez L, López-Alonso I, Huidobro C, Blázquez-Prieto J, Del Busto C, Iglesias L, et al. Impact of frailty and duration of mechanical ventilation on post-intensive care unit functional status of cardiac critically ill patients. <i>Am J Respir Crit Care Med</i> 2018;197.	Conference abstract
Andrew MK, Lees C, Godin J, Black K, McElhaney J, Ambrose A, et al. Frailty hinders recovery from acute respiratory illness in older adults. <i>Open Forum Infect Dis</i> 2017;4:S573-S574.	Conference abstract
Arriero Fernández N, Silva Obregón JA, Estrella Alonso A, Eguileor Marin Z, Tirado Fernández MA, Viejo Moreno R, et al. Frailty assesment in cardiopulmonary arrest, is it necessary? <i>Crit Care</i> 2019;23.	Conference abstract
Arroyo Espliguero R, Silva-Obregon A, Viana-Llamas MC, Estrella-Alonso A, Saboya-Sanchez S, Uribe-Heredia G, et al. Frailty is an independent predictor of one-year mortality in patients with ST-segment elevation myocardial infarction, regardless of age, clinical severity and left ventricular function. <i>Eur Heart J</i> 2019;40:862.	Conference abstract
Baldwin MR, Gonzalez WC, Pollack LR, Javaid A, Maurer MS, Lederer DJ. Frailty subphenotypes and functional recovery in older survivors of acute respiratory failure. <i>Am J Respir Crit Care Med</i> 2018;197.	Conference abstract
Bech LK, Lindhardt A, Meyhoff CS. Clinical impact of frailty among patients with severe vital sign derangement: An observational study. <i>Acta Anaesthesiol Scand</i> 2020.	Duplication
Bech LK, Lindhardt A, Meyhoff CS. Clinical impact of frailty among patients with severe vital sign derangement: An observational study. <i>Acta Anaesthesiol Scand</i> 2020.	Not relevant population
Brummel NE, Girard TD, Hughes CG, Thompson JL, Chandrasekhar R, Ware LB, et al. Associations between markers of inflammation and frailty in survivors of hospitalization for critical illness. <i>Am J Respir Crit Care Med</i> 2019;199.	Conference abstract
Brummel NE, Girard TD, Thompson JL, Chandrasekhar R, Pandharipande P, Ely E. Prevalence of and risk factors for frailty after hospitalization for critical illness. <i>Am J Respir Crit Care Med</i> 2018;197.	Conference abstract
Buitrago DH, Gangadharan SP, Majid A, Kent MS, Alape D, Wilson JL, et al. Frailty Characteristics Predict Respiratory Failure in Patients Undergoing Tracheobronchoplasty. <i>Ann Thorac Surg</i> 2018;106:836-41.	Not relevant population
Carpenter E, Mahmooth Z, Elwood D, Lin E, Foster M, Haack C, et al. Frailty and predictors of discharge disposition in the acute and critical care surgery patient: A comparison of three frailty scoring instruments. <i>Am Surg</i> 2019;85:E504-E507.	Not relevant population

Cheung A, Haas B, Ringer TJ, McFarlan A, Wong CL. Canadian Study of Health and Aging Clinical Frailty Scale: Does It Predict Adverse Outcomes among Geriatric Trauma Patients? <i>J Am Coll Surg</i> 2017;225:658-665.e3.	Not relevant population
Curtis B, Carson SS, Douglas IS, Hough CTL, Kahn JM, White DB, et al. Long-term cognitive, psychological, and disability outcomes of survivors of chronic critical illness. <i>Am J Respir Crit Care Med</i> 2019;199.	Conference abstract
Dang M, Selvachandran A, Wiggan G, Mills M, Bartels M, Verghese J, et al. Pre-hospital frailty and cognitive motor interference(CMI) in adults with acute respiratory failure. <i>J Am Geriatr Soc</i> 2019;67:S241.	Conference abstract
Darvall JN, Boonstra T, Norman J, Murphy D, Bailey M, Iwashyna TJ, et al. Retrospective frailty determination in critical illness from a review of the intensive care unit clinical record. <i>Anaesth Intensive Care</i> 2019;47:343-8.	Not relevant outcome
Darvall JN, Braat S, Story DA, Greentree K, Bose T, Loth J, et al. Protocol for a prospective observational study to develop a frailty index for use in perioperative and critical care. <i>BMJ Open</i> 2019;9.	Protocol
Darvall JN, Gregorevic KJ, Story DA, Hubbard RE, Lim WK. Frailty indexes in perioperative and critical care: A systematic review. <i>Arch Gerontol Geriatr</i> 2018;79:88-96.	Not relevant Instrument
De Las Casas R, Bell D, Bounds C, Trimmings A. Association between the Canadian Study of Health and Ageing (CSHA) Clinical Frailty Score and Outcomes from Critical Care. <i>J Intensive Care Soc</i> 2018;19:104-5.	Conference abstract
Di Monte A, D'Amore P, Sabbatini F, Minardi M, Franco A. Non invasive ventilation in frailty elderly inpatient with acute respiratory failure. <i>Italian Journal of Medicine</i> 2019;13:27.	Conference abstract
Dong J, Sun J, Zeng A, Guo Z. Research progress of frailty syndrome in critically ill elderly patients. <i>Zhonghua Wei Zhong Bing Ji Jiu Yi Xue</i> 2017;29:958-60.	Not relevant study design
Enilari O, Nair R, Chuang E, Gong MN, Hope AA. Exploring the provision of primary and specialty palliative care services in critically ill older adults by pre-hospital frailty. <i>Am J Respir Crit Care Med</i> 2018;197.	Conference abstract
Falvey JR, Ferrante LE. Frailty assessment in the ICU: translation to 'real-world' clinical practice. <i>Anaesthesia</i> 2019;74:700-3.	Not relevant study design
Fernando S, Mclsaac D, Rochweg B, Bagshaw S, Seely A, Perry J, et al. Frailty and associated outcomes among emergency department patients requiring endotracheal intubation. <i>CJEM</i> 2019;21:S31.	Conference abstract
Fernando SM, Mclsaac DI, Rochweg B, Cook DJ, Bagshaw SM, Muscedere J, et al. Frailty and associated outcomes and resource utilization following in-hospital cardiac arrest. <i>Resuscitation</i> 2020;146:138-44.	Not relevant population
Finkel D, Sternäng O, Jylhävä J, Bai G, Pedersen NL. Functional Aging Index Complements Frailty in Prediction of Entry Into Care and Mortality. <i>J Gerontol A Biol Sci Med Sci</i> 2019;74:1980-6.	Not relevant Instrument
Flaatten H, Clegg A. Frailty: we need valid and reliable tools in critical care. <i>Intensive Care Med</i> 2018;44:1973-5.	Not relevant study design
Flaatten H, Jung C, Vallet H, Guidet B. How Does Frailty Affect ICU Outcome? <i>Curr Anesthesiol Rep</i> 2019;9:144-50.	Not relevant study design
Fronczek J, Polok K, Nowak-Kózka I, Włodarczyk A, Górka J, Czuczwar M, et al. Frailty increases mortality among patients ≥ 80 years old treated in Polish ICUs. <i>Anaesthesiol Intensive Ther</i> 2018;50:245-51.	Duplication
Geense W, Zegers M, Dieperink P, Vermeulen H, van der Hoeven J, van den Boogaard M. Changes in frailty among ICU survivors and associated factors:	Duplication

Results of a one-year prospective cohort study using the Dutch Clinical Frailty Scale. <i>J Crit Care</i> 2020;55:184-93.	
Geense W, Zegers M, Peters M, Janssen I, Ramakers B, Van Der Hoeven J, et al. What is the patients' physical, cognitive and mental status before ICU admission? <i>Intensive Care Med Exp</i> 2018;6.	Conference abstract
Guidet B, Flaatten H, Boumendil A, Morandi A, Andersen FH, Artigas A, et al. Withholding or withdrawing of life-sustaining therapy in older adults (≥ 80 years) admitted to the intensive care unit. <i>Intensive Care Med</i> 2018;44:1027-38.	Not relevant outcome
Hamidi M, Haddadin Z, Zeeshan M, Saljuqi AT, Hanna K, Tang A, et al. Prospective evaluation and comparison of the predictive ability of different frailty scores to predict outcomes in geriatric trauma patients. <i>J Trauma Acute Care Surg</i> 2019;87:1172-80.	Conference abstract
Hamidi M, Zeeshan M, Leon-Risemberg V, Nikolich-Zugich J, Hanna K, Kulvatunyou N, et al. Frailty as a prognostic factor for the critically ill older adult trauma patients. <i>Am J Surg</i> 2019;218:484-9.	Not relevant Instrument
Hamidi M, Zeeshan M, Tang A, Nikolich-Zugich J, Kulvatunyou N, O'Keefe T, et al. Frailty as a prognostic factor for the critically ill: A propensity matched analysis of 34,854 geriatric patients. <i>J Am Geriatr Soc</i> 2018;66:S162-S163.	Conference abstract
Hart R, Ruddy JP. Frailty in ICU: An unmeasured burden. <i>Intensive Care Med Exp</i> 2018;6.	Conference abstract
Hewitt D, Booth M. Does frailty score at intensive care unit admission affect mortality at one year? A retrospective observational cohort study. <i>Crit Care</i> 2019;23.	Conference abstract
Hickman RL. Evidence-Based Review and Discussion Points. <i>Am J Crit Care</i> 2019;28:124-5.	Not relevant study design
Hodgson L, Warren J, Hunt D, Allen A, Venn R. Prevalence and impact of frailty on intensive care unit outcomes. <i>Intensive Care Med Exp</i> 2018;6.	Conference abstract
Hope AA, Verghese J, Gong MN. Pre-hospital frailty and cognitive impairment in older adult survivors of intensive care: An observational cohort study. <i>Am J Respir Crit Care Med</i> 2019;199.	Conference abstract
Kizilarlanoglu MC, Civelek R, Kilic MK, Sumer F, Varan HD, Kara O, et al. Is frailty a prognostic factor for critically ill elderly patients? <i>Aging Clin Exp Res</i> 2017;29:247-55.	Not relevant instrument
Launey Y, Jacquet H, Arnouat M, Rousseau C, Nesseler N, Seguin P. Risk factors of frailty and death or only frailty after intensive care in non-frail elderly patients: a prospective non-interventional study. <i>J Intensive Care</i> 2019;7:48.	Not relevant instrument
Launey Y, Jacquet H, Arnouat M, Rousseau C, Nesseler N, Seguin P. Risk factors of frailty and death or only frailty after intensive care in non-frail elderly patients: A prospective non-interventional study. <i>J Intensive Care</i> 2019;7:48.	Duplication
Law J, Ng Gong M, Nair R, Hope AA. Predictors of increased post-hospital disability in critically ill older adults. <i>J Am Geriatr Soc</i> 2018;66:S319-S320.	Conference abstract
MacNally L, Soe N, Manohar RA. The impact of frailty on critical care unit outcome and treatment intensity in a district general hospital. <i>J Intensive Care Soc</i> 2018;19:50-1.	Conference abstract
Marques Mendes E, Pereira JM, Sousa Dias C, Honrado T. Short-and long-term outcomes of very old patients admitted to intensive care unit. <i>Intensive Care Med Exp</i> 2017;5.	Conference abstract

McMahon DP, Donnelly B, Chamberlin N. The significance of clinical frailty scoring in the outcomes of patients receiving non-invasive ventilation. <i>Thorax</i> 2019;74:A192-A193.	Conference abstract
Montgomery CL, Zuege DJ, Rolfson DB, Opgenorth D, Hudson D, Stelfox HT, et al. Mise en œuvre d'un outil de dépistage de la fragilité à l'échelle de la population parmi les patients admis aux soins intensifs pour adultes en Alberta, Canada. <i>Can J Anaesth</i> 2019;66:1310-9.	Duplication
Mudge AM. Outcomes for frail very old patients in the ICU are remarkably good. <i>Med J Aust</i> 2019;211:314-5.	Not relevant study design
Muscudere J, Boyd J, Maslove D, Sibley S, Hunt M, Norman P, et al. Frailty, outcomes, recovery and care steps of critically ill patients (FORECAST) pilot study. <i>Crit Care</i> 2019;23.	Conference abstract
Nakajima H, Nishikimi M, Shimizu M, Hayashi K, Inoue T, Nishida K, et al. Clinical Frailty Scale Score Before ICU Admission Is Associated With Mobility Disability in Septic Patients Receiving Early Rehabilitation. <i>Crit Care Explor</i> 2019;1:e0066.	Not relevant outcome
O'Caomh R, Cooney MT, Cooke J, O'Shea D. The challenges of using the Hospital Frailty Risk Score. <i>The Lancet</i> 2018;392:2693.	Not relevant study design
Papageorgiou D, Gika E, Kosenai K, Tsironas K, Avramopoulou L, Sela E, et al. Frailty in elderly ICU patients in Greece: A prospective, observational study. <i>Ann Transl Med</i> 2018;6:111.	Not relevant outcome
Pedder A, Harrold R, Cruikshanks A, Tridente A, Raithatha A. Impact of frailty on critical care and hospital mortality in critically ill patients with decompensated alcoholic liver disease. <i>Crit Care</i> 2019;23.	Conference abstract
Petrie JG, Martin ET, Zhu Y, Wyatt DG, Kaniclides A, Ferdinands JM, et al. Comparison of a frailty short interview to a validated frailty index in adults hospitalized for acute respiratory illness. <i>Vaccine</i> 2019;37:3849-55.	Not relevant outcome
Porteous C, Langton L, Little J, Old A. Does clinical frailty scale aid prognostication in ICU? <i>J Intensive Care Soc</i> 2018;19:51- 2.	Conference abstract
Rice H, Hill K, Fowler R, Watson C, Waterer G, Harrold M. Reduced Step Count and Clinical Frailty in Hospitalized Adults With Community-Acquired Pneumonia. <i>Respir Care</i> 2020;65:455-63.	Duplication
Rice H, Hill K, Fowler R, Watson C, Waterer G, Harrold M. Reduced Step Count and Clinical Frailty in Hospitalized Adults With Community-Acquired Pneumonia. <i>Respir Care</i> 2020;65:455-63.	Not relevant population
Rosman J, Cordonnier A, Forceville X, Besch G, Mentec H, Michel P, et al. Impact of frailty on elderly patients (≥ 80 years) admitted in French intensive care units: A post hoc analysis from the international VIP study. <i>Ann Intensive Care</i> 2019;9.	Conference abstract
So RKL, Bannard-Smith J, Subbe CP, Jones DA, Van Rosmalen J, Lighthall GK. The association of clinical frailty with outcomes of patients reviewed by rapid response teams: an international prospective observational cohort study. <i>Critical Care</i> 2018;22:227.	Not relevant population
Souza IAO, Vieira TS, Ribeiro PC, Taniguchi LU. Frailty syndrome among critically ill patients undergoing nutrition support therapy in a Brazilian tertiary hospital. <i>Intensive Care Med Exp</i> 2017;5.	Conference abstract
Takaoka AA, Shears MB, Millen TC, Holding AD, Clarke FE, Tharmalingam SF, et al. The prognostic value of chart review-based clinical frailty scale scores in the intensive care unit. <i>Can J Anaesth</i> 2018;65:S124-S125.	Conference abstract

Taniguchi L, Souza IAO, Siqueira EMP, Ribeiro PC. Prevalence, nutrition risk evaluation and resource use of frail critically ill patients undergoing nutrition support therapy in a Brazilian tertiary hospital. <i>Intensive Care Med</i> 2018;6.	Conference abstract
Va P, Rali P, Kota H, Keenan V, Mujtaba S, Naing W, et al. Home return following invasive mechanical ventilation for the oldest-old patients in medical intensive care units from two US hospitals. <i>Lung India</i> 2018;35:461-6.	Not relevant Instrument
Viana-Llamas MC, Silva-Obregon A, Arroyo Espliguero R, Estrella-Alonso A, Saboya-Sanchez S, Uribe-Heredia G, et al. Female gender is an independent predictor of one-year mortality following primary angioplasty for ST-segment elevation myocardial infarction, regardless of age, clinical severity and frailty. <i>Eur Heart J</i> 2019;40:2070.	Conference abstract
Walsh S, Searle S, Davis G, Mercier T, Haroon B, McMullen S, et al. Frailty in critical care: patient mobility as a clinical predictor. <i>Can J Anaesth</i> 2018;65:S52-S55.	Conference abstract
Wang M, Huang J, Reed MJ. Geriatric trauma intensive care patients: Complications and ICU readmission. <i>J Am Geriatr Soc</i> 2019;67:S135.	Conference abstract
Welch SA, Girard TD, Thompson JL, Chandrasekhar R, McNeil JB, Ware LB, et al. Association between markers of inflammation and frailty in survivors of hospitalization for critical illness. <i>J Am Geriatr Soc</i> 2019;67:S165.	Conference abstract
Zacchetti L, Aresi S, Zangari R, Cavalleri G, Fagnani L, Longhi L, et al. Traumatic brain injury in elderly: Impact of frailty on outcome. <i>Crit Care</i> 2019;23.	Conference abstract
Zampieri F, Taniguchi L, Salluh J, Bozza F, Soares M. Association of the Modified Frailty Index (MFI) with resource use and short-term outcomes in 129,680 critically ill patients. <i>Intensive Care Med</i> 2018;6.	Conference abstract
Zampieri FG, Iwashyna TJ, Viglianti EM, Taniguchi LU, Viana WN, Costa R, et al. Association of frailty with short-term outcomes, organ support and resource use in critically ill patients. <i>Intensive Care Med</i> 2018;44:1512-20.	Not relevant Instrument