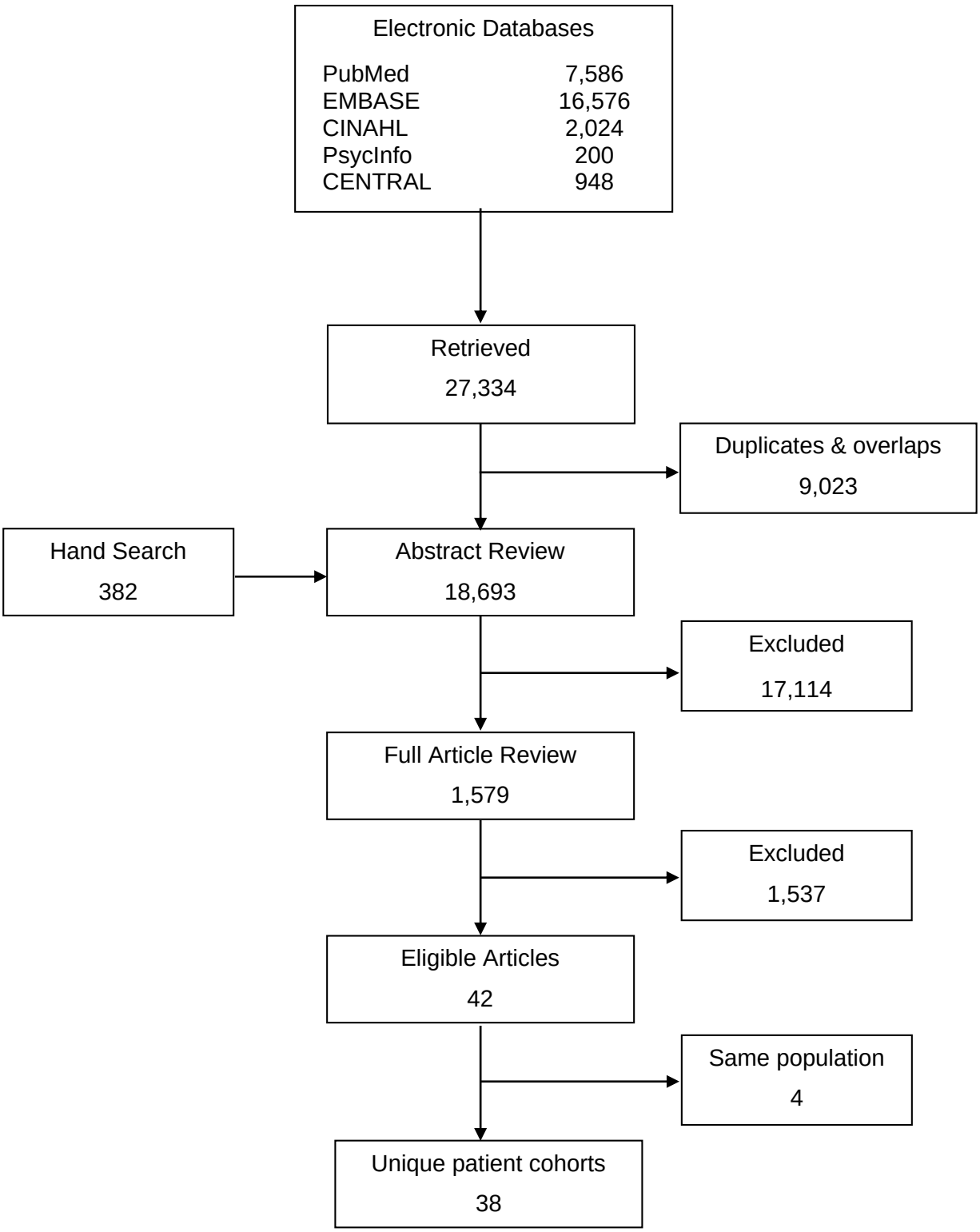

Figure S1: Flow chart for identifying eligible studies.
Abbreviations: CINAHL, Cumulative Index of Nursing and Allied Health Literature; CENTRAL, Cochrane Controlled Trials Registry.

Table S1: Search Terms and Strategies

Database	Search Terms	Results
Pubmed Search 1: 11/7/2013 Search 2: 3/13/2015	(intensive care[tiab] OR "intensive care"[MeSH Terms] OR intensive therapy[tiab] OR high dependency[tiab] OR critical care[tiab] OR "critical care"[MeSH Terms] OR intermediate care[tiab] OR step-up care[tiab] OR step-down care[tiab] OR respiratory distress syndrome[tiab] OR acute lung injury[tiab]) AND (outcome measure[tiab] OR "outcome assessment (health care)"[MeSH Terms] OR follow-up[tiab] OR "follow-up studies"[MeSH Terms] OR health status[tiab] OR "health status"[MeSH Terms] OR functional status[tiab] OR clinical outcome[tiab]) AND (organ failure[tiab] OR "multiple organ failure"[MeSH Terms] OR organ dysfunction[tiab] OR sequelae[tiab] OR quality of life[tiab] OR "quality of life"[MeSH Terms] OR impairment[tiab] OR morbidity[tiab] OR "morbidity"[MeSH Terms]) NOT (animals[mh] NOT humans[mh]) Limits: 1970 – present	Search 1: 6,391 Search 2: 1,195
Embase Search 1: 11/7/2013 Search 2: 3/13/2015	('intensive care'/exp OR 'intensive care':ti,ab OR 'intensive therapy':ti,ab OR 'high dependency':ti,ab OR 'critical care':ti,ab OR 'critical care':ti,ab OR 'intermediate care':ti,ab OR 'step-up care':ti,ab OR 'step-down care':ti,ab OR 'respiratory distress syndrome':ti,ab OR 'acute lung injury':ti,ab) AND ('outcome measure':ti,ab OR 'outcome assessment'/exp OR 'follow up':ti,ab OR 'follow up'/exp OR 'health status':ti,ab OR 'health status'/de OR 'functional status':ti,ab OR 'clinical outcome':ti,ab) AND ('organ failure':ti,ab OR 'multiple organ failure'/exp OR 'organ dysfunction':ti,ab OR 'multiple organ failure':ti,ab OR 'sequelae':ti,ab OR 'quality of life'/exp OR 'quality of life':ti,ab OR 'impairment':ti,ab OR 'morbidity':ti,ab OR 'morbidity'/exp) NOT ('animal'/exp NOT ('animal'/exp AND 'human'/exp)) Limits: 1970 – present	Search 1: 11,246 Search 2: 5,330
CINAHL Search 1: 11/7/2013 Search 2: 3/13/2015	(MH "intensive care units+" OR "intensive care" OR "intensive therapy" OR "high dependency" OR MH "critical care" OR "critical care" OR "intermediate care" OR "step-up care" OR "step-down care" OR "respiratory distress syndrome" OR "acute lung injury") AND ("outcome measure" OR MH "outcome assessment" OR "follow up" OR MH "prospective studies" OR MH "health status" OR "health status" OR "functional status" OR "clinical outcome") AND ("organ failure" OR "multiple organ failure" OR "organ dysfunction" OR MH "multiple organ dysfunction syndrome" OR "sequelae" OR "quality of life" OR MH "quality of life" OR "impairment" OR "morbidity" OR MH "morbidity")	Search 1: 1,677 Search 2: 232
PsycInfo Search 1: 11/7/2013 Search 2: 3/13/2015	(DE "intensive care" OR "intensive care" OR "intensive therapy" OR "high dependency" OR "critical care" OR "intermediate care" OR "step-up care" OR "step-down care" OR "respiratory distress syndrome" OR "acute lung injury") AND ("outcome measure" OR "outcome assessment" OR "follow up" OR DE "Followup Studies" OR "health status" OR "functional status" OR "clinical outcome") AND ("organ failure" OR "multiple organ failure" OR "organ dysfunction" OR "sequelae" OR "quality of life" OR DE "quality of life" OR "impairment" OR DE "morbidity" OR "morbidity")	Search 1: 159 Search 2: 41

Table S2. Risk of Bias Assessment for Observational Studies, Adapted from the Newcastle Ottawa

Study	Representativeness of exposed cohort [a]	Selection of non-exposed cohort [b]	Ascertainment of exposure (s) [c]	Demonstration that outcome was not present at start [d]	Comparability of cohorts [e]	Assessment of outcome	Was follow-up long enough? [f]	Adequacy of follow-up [g]
Chelluri et al (26)	?	+	+	NA	-	+	+	+
Broslawski et al (27)	-	NA	NA	NA	NA	+	+	+
Eddleston et al (28)	-	-	+	NA	-	+	+	-
Kress et al (49)	?	+	+	NA	-	+	+	-
Jones et al (29)	-	NA	NA	NA	-	+	+	?
Scragg et al (50) †	-	NA	NA	NA	++	+	+	-
Chelluri et al (32) (55)	+	NA	NA	NA	NA	+	+	+
Jackson et al (30)	+	+	+	NA	-	+	+	-
Boyle et al (31)	-	NA	NA	NA	-	+	+	-
Rattray et al (33)	+	NA	NA	NA	++	+	+	+
Weinert et al (34)	+	NA	NA	+	++	+	+	+
Samuelson et al (35)	+	NA	NA	NA	-	+	+	+
Sukantarat et al (36)	?	NA	NA	NA	-	+	+	?
McWilliams et al (37)	?	NA	+	NA	NA	+	+	+
Myhren et al (39)(56)	-	NA	NA	NA	++	+	+	-
Van der Schaaf et al (38)	-	NA	NA	NA	NA	+	+	-
Rattray et al (40)	+	NA	NA	NA	+	+	+	-
Schandl et al (43)	-	NA	NA	NA	+	+	+	-
Garrouste-Orgeas et al (41)	+	NA	+	NA	-	+	+	-
McKinley et al (42)	-	NA	NA	NA	-	+	+	+
Wade et al (44)	+	NA	NA	NA	++	+	+	+
Davydow et al (45)	-	NA	NA	NA	++	+	+	+
Kowalczyk et al (51) †	-	NA	NA	NA	++	+	+	-
Raveau et al (46)	+	NA	NA	NA	NA	+	+	+
Risnes et al (54)*	?	?	+	NA	-	+	+	?
Battle et al (53) †	?	NA	NA	-	++	+	+	?
Jackson et al (47)	-	NA	NA	NA	++	+	+	+
Paparrigopoulos et al (52) †	-	NA	NA	NA	++	+	+	-
Parsons et al (48)	-	-	+	+	++	+	+	+

Legend: "+" = low risk of bias; "?" = unclear risk of bias; "-" = high risk of bias; NA = not applicable; "†" = Cross-sectional studies; "*" = case series

a: Consecutive screening of patients for enrollment and a ≥70% consent rate were required.
b: Only applicable for studies with a single pre-defined exposure.
c: Only applicable for studies with a single pre-defined exposure.
d: Only applicable for studies reporting incidence of depression.
e: Using multivariable regression module or 2-tailed ANOVA.
f: More than 2 weeks.
g: Lost to follow-up at the time of assessment <20% if before 6 months, and <30% if at 6 months or later (lost to follow-up was calculated by dividing the number of alive patients without depression assessments by total number of alive patients at that time point).

Table S3: Study Characteristics. [a]

Study 1st author	Study type	N	Description of cohort	Male (%)	Mean (SD) or *median (IQR)* [absolute range]				
					Age in years	Days in hospital	Days in ICU	APACHE II score	Follow-up (mo.)
Chelluri et al (26)[b]	Cohort	97	Age ≥ 65 yrs	44 52	69 (2) 81 (4)	17 (16) 21 (21)	5 (7) 7 (11)	18 (6) 20 (6)	1,6,12
Broslawski et al (27)	Cohort	45	Age > 65 yrs	53	77 (7)	27 (29)	7 (8)	16 (7)	6
Eddleston et al (28)	Cohort	143	ICU admission	52	49 (12)	-	*4 (2, 13)*	19 (6)	3
Kress et al (49)[c]	Cohort	105	MV, received IV drip sedation	30 42	50 (16) 47 (20)	18 (13) 19 (10)	7 (6) 13 (10)	16 (6) 18 (7)	14 12
Jones et al (29)	Cohort	45	ICU LOS ≥ 24 hrs, MV	44	*57*	-	*8*	*17*	2
Scragg et al (50)	Cross Sectional	80	ICU survivor	53	*57*	-	[1-33]	-	13 (6)
Chelluri et al (32)(55)	Cohort	817	MV ≥ 48 hrs	54	60 (19)	*20 (13, 31)*	*11 (6, 19)*	68 (28) [d]	2, 12
Jackson et al (30)	Cohort	34	MV	53	53 (15)	-	-	25 (9)	6
Jones et al (17)[c]	RCT	126	MV, ICU LOS > 48 hrs	54 58	57 (17) 59 (16)	-	14 (20) 13 (18)	17 (5) 16 (5)	2, 6
Boyle et al (31)	Cohort	99	ICU LOS ≥ 48 hrs	63	59 (15)	26 (30)	7 (6)	16 (7)	1,6
Rattray et al (33)	Cohort	109	ICU LOS ≥ 24 hrs	64	55 (18)	*30 (14, 57)*	*6 (2, 13)*	18 (5)	6,12
Weinert et al (34)	Cohort	277	MV > 36 hrs	52	*54 (47, 63)*	*22*	-	-	2,6
Samuelson et al (35)	Cohort	250	MV, ICU LOS ≥ 24 hrs	52	63 (13)	-	6 (6)	*18*	2
Sukantarat et al (36)	Cohort	51	ICU LOS ≥ 72 hrs	43	57 (14)	-	17 (17)	15 (6)	3,9
McWilliams et al (37)	Cohort	43	MV ≥ 48 hrs, E: terminally ill	55	57(17)	*39 (31, 45)*	*11 (6, 17)*	*15 (11, 22)*	1 w, 2
Cuthbertson et al (18)[c]	RCT	286	Survived to hospital d/c	60 60	*59 (46, 49)* *60 (46, 71)*	-	*3 (2, 10)* *3 (1, 8)*	*19 (15, 24)* *19 (15, 24)*	6,12
Knowles et al (19) [c]	RCT	36	ICU LOS ≥ 48 hrs; Age 18-85 yrs,	56 61	-	-	*10* *8*	*17* *14*	1 [1-8], 2 [2-10]
Myhren et al (39)(56)	Cohort	255	ICU LOS ≥ 24 hrs; Age 18-75	63	48 (16)	-	12 (14)	-	1,3,12
Peek et al (20) [c]	RCT	180	Severe respiratory failure	57 59	40 (13) 40 (13)	*35 (16, 74)* *17 (5, 45)*	*24 (13, 41)* *13 (11, 16)*	20 (6) 20 (6)	6
Treggiari et al (21) [c]	RCT	137	MV ≥ 12 hrs	75 78	63 (16) 60 (16)	*16 (13, 33)* *20 (13, 38)*	*4* *6*	60 (28) [d] 60 (27) [d]	1
Van der Schaaf et al (38)	Cohort	255	ICU LOS ≥ 48 hrs	66	59 (16)	-	9 (10)	15 (6)	12
Jackson et al (22) [c]	RCT	180	MV ≥ 12 hrs	54 45	*65 (53, 73)* *68 (56, 76)*	-	-	*28 (22, 34)* *28 (21, 33)*	3, 12
Rattray et al (40)	Cohort	103	MV, ICU LOS ≥ 24 hrs	63	60	*13 (0, 368)*	*7 (0, 63)*	*19*	2,6

Table S3: Study Characteristics. ***(Continued)***

Study 1st author	Study type	N	Description of cohort	Male (%)	Mean (SD) or *median (IQR)* [absolute range]				
					Age in years	Days in hospital	Days in ICU	APACHE II score	Follow-up (mo.)
Strøm et al (23)[c]	RCT	113	MV ≥ 24 hrs, E: needing sedation	31 38	*71 (58, 74)* *63 (56, 67)*	-	-	*20 (16, 29)* *25 (21, 26)*	24
Garrouste-Orgeas et al (41)[e]	Cohort	143	ICU LOS ≥ 96 hrs	52 67 54	68 (14) 65 (17) 62 (16)	35 (67) [f] 20 (30) 14 (19)	21 (16) 18 (23) 13 (18)	-	3
McKinley et al (42)	Cohort	195	ICU LOS ≥48 hrs, MV ≥24 hrs	21	57 (16)	*18 (12, 29)*	*6 (4-11)*	19 (7)	1wks, 2, 7
Schandl et al (43) [g]	Cohort	258	ICU LOS ≥ 96 hrs	65 63	53(17); 52(18) 52(17); 54(21)	-	11 (7); 10 (7) 9 (7); 9 (8)	23 (9); 21 (8) 21(8);19 (10)	3,6,12,14
Wade et al (44)	Cohort	157	MV>24 hrs or ≥2 organ support	52	57 (17)	*27*	*8*	22 (7)	3
Davydow et al (45)	Cohort	150	ICU LOS ≥ 24 hrs	58	49 (15)	17 (12)	8 (8)	-	3,12
Kowalczyk et al (51)	Cross Sectional	195	survived ≥ 24 hrs in ICU	58	48 (19)	-	18 (24)	15 (7)	60
Raveau et al (46)	Cohort	52	Age ≥ 75 yrs	67	*81 (78, 83)*	*16 (9, 28)*	*6 (13, 10)*	-	3
Risnes et al (54)	Case-Series	28	ECMO	46	38 [19 - 64]	-	-	-	60
Jackson et al (47)	Cohort	826	Respiratory failure or shock	50	*59 (49, 69)*	*10 (6, 18)*	*5 (3, 10)*	*24 (19, 30)*	3,12
Paparrigopoulos et al (52)	Cross sectional	48	ICU LOS ≥ 24 hrs	69	53 (3)	36 (8) [f]	13 (3)	12 (5)	21 (3)
Battle et al (53)	Cross sectional	63	ICU LOS ≥ 96 hrs	56	*66 (49, 76)*	-	*7 (4, 19)*	*17 (11, 20)*	3
Jones et al (24)[c]	RCT	93	Age ≥ 45 yrs, pre–ICU or ICU LOS ≥ 5 d	50 64 64 48	*60* *64* *64* *62*	-	*10* *8* *13* *13*	*14* (4) *17* (10) *18* (6) *14* (10)	3
Parsons et al (48) [h]	Cohort	150	ICU LOS ≥ 24 hrs, E: life expectancy <12 m	45 41	48 (13) 48 (14)	*15 (8, 23)* *16 (10, 24)*	*5 (2, 9)* *5 (3, 9)*	-	12
Walsh et al (25) [c]	RCT	240	MV ≥ 48 hrs	56 58	*62 (51, 71)* *62 (53, 69)*	*11 (6, 22)* [f] *10 (6, 23)*	*11 (6, 18)* *11 (6, 18)*	*20 (17, 24)* *19 (15, 26)*	3,6,12

Abbreviations: N: number enrolled; APACHE II: acute physiology and chronic health evaluation II score; d: days; d/c: discharge; hrs: hours; ICU: intensive care unit; IQR: interquartile range; LOS: length-of-stay; mo.: months; MV: mechanical ventilation; ECMO: Extracorporeal membrane oxygenation; "-": not reported; E: excluding

a: When study characteristics of the responders at follow-up were not available we used characteristics of the entire cohort enrolled in the study.
b: Patients aged 65-74 yrs vs patients aged ≥ 75 yrs.
c: Intervention group vs control group.
d: APACHE III.
e: Pre-ICU diary vs ICU diary vs post-ICU diary.
f: Post-ICU hospital LOS.
g: Follow-up group (men; women) vs control group (men; women).
h: Patients with insomnia vs patients without insomnia.

Table S4. Risk of Bias Assessment For Randomized Controlled Trials.

Study	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data addressed (attrition bias)	Selective reporting (reporting bias)
Jones et al (17)	+	+	+	+	+/-	+
Cuthbertson et al (18)	+	+	-	-	+	+
Knowles et al (19)	?	+	-	-	+	+
Peek et al (20)	+	?	-	+	-	+
Treggiari et al (21)	+	+	-	+	-	-
Jackson et al (22)	+	+	-	+	-	+
Strøm et al (23)	?	+	-	+	-	+
Jones et al (24)	+	+	-	+	-	+
Walsh et al (25)	+	+	-	+/-	+	+

Legend: Based on Cochrane criteria for assessing risk of bias in randomized controlled trials. “+” low risk of bias; "-" means high risk of bias; “?” means unclear risk of bias; "+/-" means results were low risk for the first time point but high risk for the subsequent ones