

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Dementia: Cognitive impairment[MMSE<24] - at discharge

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Ely 2004; Prospective study	adequate	selected group eg specific operations	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	63/12 (=5)	Exposed/non-exposed from same cohort	Unclear	Inadequate: ≥34% loss to follow up; 128 tested for cognitive impairment of the 179 survivors at time of discharge; missing data for: 51/179 [28%]; in addition,	Key RF: 2/3 (age, cognitive impairment [dementia]); Assuming the same 12 factors as in the mortality MV as not stated for what factors adjusted for; unclear how many patients with cognitive impairment/dementia at b/l; Cognitive impairment assessed with MMSE(<24= cognitive impairment)
Evidence quality: biased								

Consequence Dementia: Cognitive dysfunction - 7 days postop

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Rudolph 2008; Prospective study	inadequate	somewhat representative of the community	Confounding possible : not enough factors included	265/4 (=66)	Exposed/non-exposed from same cohort	Unclear	Acceptable: ≤20% loss to follow up; 143/1161 missing postop 7 day testing	Key RF:2/3 (age; cognitive impairment-MMSE<23 excluded so constant);Patients were assessed with MMSE & medical records until postop day 3, supplemented by medical record & nurse charts; From day 4 until discharge, evaluation based on medical record or nurse chart; interviewer recorded presence or absence of delirium according to DSMIII
Evidence quality: biased								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Dementia: Cognitive dysfunction - 3 months postop

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Rudolph 2008; Prospective study	inadequate	somewhat representative of the community	Confounding possible : not enough factors included	94/4 (=24)	Exposed/non-exposed from same cohort	Unclear	Acceptable: ≤20% loss to follow up; 112/1161 missed 3 month test in addition to 40 who missed 7 day test;	Delirium was not systematically reassessed at 3 months. Key RF: 2/3 (age, cognitive impairment:constant)

Evidence quality: biased

Consequence Dementia at 3 years

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Rockwood 1999; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	32/4 (=8)	Exposed/non-exposed from same cohort	Some patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Information on 25/164 missing; Of the 164,70 died-information on them obtained through IQCODE	Key RF: 2/3 (age,dementia). Dementia excluded from analysis;Cognition evaluated with MMSE, Blessed dementia and functional. Patients screening positive for cognitive impairment were examined by geriatrician to determine presence and type of dementia. The IQCODE was used to evaluate dementia status of patients who died or unavailble for clinical examination

Evidence quality: moderate

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence New admission to institution - discharge

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Balas 2009; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	35/13 (=3)	Exposed/non-exposed from same cohort	Some patients had outcome at start of study	Acceptable: ≤20% loss to follow up;	Key RF: 2/3 (age, ADL)
Evidence quality: low								
Bourdel-Marchasson 2004; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	117/12 (=10)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Patients deceased before discharge excluded from analysis= 55/847 [6.5%]	prevalent delirium patients ; Key RF: [2/3 (ADL,cognitive impairment)]
Evidence quality: moderate								
Bourdel-Marchasson 2004; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	117/12 (=10)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Patients deceased before discharge excluded from analysis= 55/847 [6.5%]	Key RFs [2/3 (ADL,cognitive impairment)]
Evidence quality: moderate								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence New admission to institution - discharge

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Inouye 1998; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	60/7 (=9)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 35/227 patients died in hospital;	Key RF: 2/3 (ADL, cognitive impairment[dementia]); Patients living in nursing home at baseline [4%] not included in the analysis

Evidence quality: moderate

Levkoff 1992; Prospective study	adequate	truly representative of the community eg, random	Confounding possible: not enough patients for multivariate analysis	30/5 (=6)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Unclear or not stated;	Key RF:1/3 (cognitive impairment); incident delirium only
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Evidence quality: low

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence New admission to institution - 3 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Inouye 1998; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	77/7 (=11)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 127/727 (17%) missing data at 3mo	Key RF: 2/3 (ADL, cognitive impairment);

Evidence quality: moderate

Consequence New admission to institution - 6 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
O'Keeffe 1997; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	35/7 (=5)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Results reported for only 165/170 patients for this outcome	Key RF 2/3 (ADL, cognitive impairment); Delirium assessed with DSM III, based solely on mental status history & exam; Criterion 5 not required ('evidence, from the history, physical examination, or laboratory tests of a specific organic factor judged to be etiologically related to the disturbance'); Report of primary caregiver or other informant used to identify symptoms that were new/ had worsened within week before

Evidence quality: moderate

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence New admission to institution - 2 years

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Pitkala 2005; Prospective study	adequate	truly representative of the community eg, random	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	72/7 (=10)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Missing data on 1/200 patient living in own home at baseline	Key RF: 2/3 (ADL, cognitive impairment [dementia]); Analysis restricted to those not in institution at baseline

Evidence quality: high

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - in hospital

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Inouye 1998; Prospective study	adequate	selected group eg specific operations	Confounding possible: not enough patients for multivariate analysis	35/7 (=5)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 3/3 (age, dementia, severity of illness)

Evidence quality: moderate

O'Keeffe 1997; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	22/7 (=3)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 3/3 (age, severity of illness, cognitive impairment [dementia]);
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Evidence quality: low

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - in ICU

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Lin 2004; Prospective study	adequate	selected group eg specific operations	Confounding possible : not enough factors included	40/7 (=6)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 7/109 patients who remained comatose were excluded from analysis	key RF: 1/3 (severity of illness). Patients with a history of chronic dementia excluded

Evidence quality: low

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality- in ICU & hospital

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Lin 2008; Prospective study	adequate	somewhat representative of the community	Confounding possible : not enough factors included	59/10 (=6)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up;	key RF: 1/3 (age)
Evidence quality: low								
Thomason 2005; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	32/7 (=5)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 1/260 patient with persistent coma unable to assess for delirium	Key RF: 2/3 included (Age, severity of illness)
Evidence quality: low								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - 1 month

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Marcantonio 2000; Prospective study	adequate	selected group eg specific operations	Biased	3/5 (=1)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RFs: 2/3 (age, cognitive impairment); Patients comprised of intervention and control groups in RCT; intervention group received proactive acute geriatrics consultation; Intervention status not taken into account in MV

Evidence quality: biased

Consequence Mortality - 6 weeks

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Drame 2008; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	135/12 (=11)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 58/1306 excluded because of missing data	Key RF: 2/3 (age, cognitive impairment [dementia]);

Evidence quality: moderate

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - 3 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Inouye 1998; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	98/7 (=14)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 47/727 (6.5%) lost to follow-up at 3mo- could not be located. Missing group did not differ sig	Key RF: 3/3 (age, cognitive impairment [dementia], severity of illness)

Evidence quality: moderate

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - 6 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Ely 2004; Prospective study	adequate	selected group eg specific operations	Confounding possible: not enough patients for multivariate analysis	69/12 (=6)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 51/275 patients excluded because persistent coma and could not determine delirium	Key RF: 3/3 (age, severity of illness, cognitive impairment[dementia]);
Evidence quality: moderate								
Francis 1990; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	24/6 (=4)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; missing data on 13/229 patients	Key RF: 2/3 (cognitive impairment, severity of illness)
Evidence quality: low								
Holmes 2000; Prospective study	adequate	somewhat representative of the community	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	195/22 (=9)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 3/3 (Age, cognitive impairment [dementia], physical illness)
Evidence quality: moderate								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - 6 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Levkoff 1992; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	59/5 (=12)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Unclear or not stated;	Key RF: 3/3 (age, cognitive impairment, severity of illness);
Evidence quality: moderate								
Marcantonio 2000; Prospective study	adequate	selected group eg specific operations	Confounding possible: not enough patients for multivariate analysis	15/5 (=3)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	2/3 (age, cognitive impairment); Patients comprised of intervention and control groups in RCT; intervention group recd proactive acute geriatrics consultation; Intervention status not taken into account in MV;
Evidence quality: low								
O'Keeffe 1997; Prospective study	adequate	somewhat representative of the community	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	49/7 (=7)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Unclear or not stated;	Mortality-6mo; 3/3 (age, severity of illness, cognitive impairment [dementia])
Evidence quality: moderate								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - 1 year

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Leslie 2005; Prospective study	adequate	truly representative of the community eg, random	Acceptable: confounders taken into account in analysis (multivariate)	208/6 (=35)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 14/919 people who died during the index hospitalisation were not included in the models.	Key RF: 1/3 (age); Cohort was part of an prevention intervention programme; (Inouye1999); intervention status was included in the initial model;
Evidence quality: low								
Pitkala 2005; Prospective study	adequate	truly representative of the community eg, random	Acceptable: confounders taken into account in analysis (multivariate)	106/7 (=15)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 2/3 (age, cognitive impairment [dementia])
Evidence quality: moderate								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - 2 years

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Dolan 2000; Prospective study	inadequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	369/6 (=62)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Missing data for 7/682 patients.	Key RFs: 2/3 (age, cognitive impairment[constant]) Patients with cognitive impairment were not included- treating it as a constant.
Evidence quality: biased								
Francis 1992; Prospective study	adequate	somewhat representative of the community	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	55/4 (=14)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Of 229 patients, followup information avail for 205 cases. % rates for mortality given for 182 patients in total, still just about 20% loss	Key RF: 1/3 [cognitive impairment];
Evidence quality: low								
Nightingale 2001; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	347/10 (=35)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 3/3 (Age, dementia, physical illness)
Evidence quality: high								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality - 2 years

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Pitkala 2005; Prospective study	adequate	truly representative of the community eg, random	Acceptable: confounders taken into account in analysis (multivariate)	198/7 (=28)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Unclear or not stated;	Key RF: 2/3 (age, cognitive impairment[dementia])

Evidence quality: moderate

Consequence Mortality - 3 years

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Rockwood 1999; Prospective study	adequate	somewhat representative of the community	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	101/9 (=11)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 2/3 (age, cognitive impairment [dementia])

Evidence quality: moderate

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Length of stay-hospital [early discharge]

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Holmes 2000; Prospective study	adequate	somewhat representative of the community	Comparable at baseline apart from study risk factor	731/22 (=33)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 2/3 (age, physical illness)

Evidence quality: high

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Length of stay- hospital

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Ely 2004; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	224/12 (=19)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 51/275 excluded from analysis; patients were comatose	3/3 (age, severity of illness, comorbidity)
Evidence quality: high								
Francis 1990; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	229/6 (=38)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; Missing data on 13/229 patients	Key RF: 1/3 (severity of illness)
Evidence quality: low								
Levkoff 1992; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	114/5 (=23)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Unclear or not stated;	Key RF: 2/3 (age, severity of illness)
Evidence quality: high								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Length of stay- hospital

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
O'Keeffe 1997; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	225/7 (=32)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 3/3 (age, illness severity, comorbid disease)
Evidence quality: high								
Thomason 2005; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	260/7 (=37)	Exposed/non-exposed from same cohort	Unclear	Acceptable: ≤20% loss to follow up; 1 patient with persistent coma not assessed	Key RF: 3/3 (age, comorbidity, severity of illness)
Evidence quality: high								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Length of stay - ICU

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Thomason 2005; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	260/7 (=37)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 1/261 patient with persistent coma not assessed	Key RF: 3/3 (age, comorbidity, severity of illness)

Evidence quality: high

Consequence Length of stay - post ICU

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Ely 2004; Prospective study	adequate	selected group eg specific operations	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	196/12 (=16)	Exposed/non-exposed from same cohort	Unclear	Possible bias: 21-33% loss to follow up; 79/275 missing data [51 persistent coma + 28 died in ICU]	3/3 (age, severity of illness, comorbidity);

Evidence quality: moderate

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Hospital acquired complications

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
O'Keeffe 1997; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	222/7 (=32)	Exposed/non-exposed from same cohort	Some patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 2/5 [age, cognitive impairment]; Patient with frequent incontinence or a catheter on admission and patients with grade 2 pressure sores on admission were excluded. History of falls not reported.

Evidence quality: low

Consequence Mortality or new admission to institution - discharge

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Inouye 1998; Prospective study	adequate	somewhat representative of the community	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	95/7 (=14)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 4/5 (age, ADL, cognitive impairment, severity of illness)

Evidence quality: high

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality or new admission to institution - 1 month

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Givens 2008; Prospective study	adequate	somewhat representative of the community	Confounding possible: some factors not comparable at baseline	33/7 (=5)	Non-exposed from different cohort (e.g. gen popn)	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 3/5 (age, ADL, comorbidity)
Evidence quality: low								
Marcantonio 2000; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	33/5 (=7)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF:4/5 (age, cognitive impairment, ADL, comorbidity)
Evidence quality: moderate								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality or new admission to institution - 3 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Inouye 1998; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	165/7 (=24)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 47/727 missing data	4/5 (ADL, age cognitive impairment[dementia], severity of illness)

Evidence quality: moderate

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality or new admission to institution - 6 month

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Givens 2008; Prospective study	adequate	selected group eg specific operations	Confounding possible: not enough patients for multivariate analysis	28/7 (=4)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF:3/5 (age, ADL, comorbidity)
Evidence quality: low								
Marcantonio 2000; Prospective study	adequate	somewhat representative of the community	Confounding possible: not enough patients for multivariate analysis	28/5 (=6)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF:4/5 (age, cognitive impairment, ADL, comorbidity)
Evidence quality: moderate								

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Incidence of Delirium

Consequence Mortality or new admission to institution -1 year

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
McAvay 2006; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	198/9 (=22)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Number of MVs: 7 variables + 2 levels for delirium (delirium at discharge, delirium resolved, never delirious); Key RF: 4/5 [age, ADL, cognitive impairment [dementia], comorbidity, severity of illness]

Evidence quality: high

Consequence Mortality or residing in institution- 2 years

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Pitkala 2005; Prospective study	adequate	truly representative of the community eg, random	Acceptable: confounders taken into account in analysis (multivariate)	336/7 (=48)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Unclear or not stated;	Key RF:4/5 (age,ADL, dementia,comorbidity)

Evidence quality: high

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Duration of delirium

Consequence Mortality - 6 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Ely 2004; Prospective study	adequate	selected group eg specific operations	Confounding possible: not enough patients for multivariate analysis	69/12 (=6)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 51/275 patients with persistent coma experienced mortality after a median of 3days (IQR 1 to 5), not included in any outcome analysis.	Key RF: 3/3 (age, dementia, severity of illness); Same key risk factors applied as for the incidence of delirium

Evidence quality: moderate

Consequence Length of stay- hospital

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Ely 2004; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	224/12 (=19)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 51/275 missing data;	Key RF: 3/3 (age, severity of illness, comorbidity); Same key risk factors applied as for the incidence of delirium

Evidence quality: high

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Duration of delirium

Consequence Length of stay - post ICU

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Ely 2004; Prospective study	adequate	somewhat representative of the community	Fairly acceptable: multivariate analysis with nearly enough patients (8-10 per covariate)	196/12 (=16)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Possible bias: 21-33% loss to follow up; 79/275 missing data	Key RF: 3/3 [age, severity of illness, comorbidity]; Same key risk factors applied as for the incidence of delirium

Evidence quality: moderate

Consequence Mortality or functional decline- discharge

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Andrew 2005; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	32/4 (=8)	Exposed/non-exposed from same cohort	Some patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 6/77 patients lost to follow up	Key RF: 1/3 [age]

Evidence quality: low

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Duration of delirium

Consequence Mortality or functional decline- 6 months

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Andrew 2005; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	48/4 (=12)	Exposed/non-exposed from same cohort	Some patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 6/77 missing data	Key RF: 1/3(age)

Evidence quality: low

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Severity of delirium

Consequence Mortality - 1 year

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Leslie 2005; Prospective study	adequate	somewhat representative of the community	Acceptable: confounders taken into account in analysis (multivariate)	208/7 (=30)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Adequate: all patients followed up;	Key RF: 1/3 (age)

Evidence quality: low

Consequence Mortality or new admission to institution - 1 month

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Marcantonio 2002; Prospective study	adequate	selected group eg specific operations	Confounding possible: not enough patients for multivariate analysis	22/3 (=7)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 4/122 patients lost to follow up because of lack of severity data.	Key RF: 2/5 (ADL, cognitive impairment)

Evidence quality: low

Appendix E: Cohort studies - methodological quality- Consequences of delirium

Risk factor: Severity of delirium

Consequence Mortality or new admission to institution - 6mo

<i>Study</i>	<i>Delirium assessment</i>	<i>Representativeness</i>	<i>Cohort comparability</i>	<i>pts per covariate</i>	<i>source of population</i>	<i>Initial exposure</i>	<i>Loss to follow up</i>	<i>Overall Comments</i>
Marcantonio 2002; Prospective study	adequate	selected group eg specific operations	Confounding possible: not enough patients for multivariate analysis	17/3 (=6)	Exposed/non-exposed from same cohort	No patients had outcome at start of study	Acceptable: ≤20% loss to follow up; 4/122 patients lost to follow up because of lack of severity data.	Key RF:2/5 (ADL, cognitive impairment)

Evidence quality: low