**Supplemental Table 1. Interventions in severe sepsis**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Authors (Reference No.), Year of Publication, Country** | **Target Population** | **Intervention or Practice** | **Comparator** | **Cost/QALY** | **Cost/Life Year Saved** | **Funding** | **Perspective** | **Time Horizon** | **Discount Rate, %** | **Sensitivity Analysis** |
| Manns et al. 2002, Canada; 55.8% men | Patients admitted to the ICU with severe sepsis (all patients) | Administration of activated protein C | Conventional care | 63,134 | 37,880 | Foundation | Purchaser | LIfetime | 5 | Yes |
| Fowler et al. 2003, Canada; assumed mean age of 61 yrs; 57% men | Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of one or more organ dysfunction | Drotrecogin alfa (activated) administered as a 96-hr intravenous infusion at 24 µg/kg/hr to adults presenting with severe sepsis in addition to usual care | Usual care + placebo | 27,183 | ICER 21,426 | No funding | Health Care | Lifetime | 3 | Yes |
| Angus et al. 2003, US; placebo mean age 61 (SD, 16.4 yrs) and treatment 60.2 yrs (SD, 17.3 yrs); 44.6% and 46.4% men, respectively | Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of one or more organ dysfunction | Drotrecogin alfa (activated) administered as a 96-hr intravenous infusion at 24 µg/kg/hr to adults presenting with severe sepsis in addition to usual care | Placebo | ICER 68,016 | ICER – Lifetime: 46,134  ICER – Short-term: 223,003 | Pharmaceutical Industry | Societal | Lifetime | 3 | Yes |
| Betancourt et al. 2003, US; -- | Adult patients who had severe sepsis with ≥1 organs failing  Adult patients who had severe sepsis with ≥2 organs failing  Adult patients who had severe sepsis with ≥3 organs failing  Adult patients who had severe sepsis with ≥4 organs failing | Drotrecogin alfa | Usual care | --a | -- | Not stated (not pharmaceutical industry) | Health Policy | 28 days | No | Yes |
| Neilson et al. 2003, Germany; placebo mean age 60.6 yrs (SD, 16.5 yrs) and 60.5 yrs (16.8 yrs); 58% and 56.1% men, respectively | Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of ≥1 organ failing  Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of ≥2 organs failing | Drotrecogin alfa (activated) administered as a 96-hr intravenous infusion at 24 µg/kg/hr to adults presenting with severe sepsis in addition to usual care | Placebo | -- | 20,832  15,072 | Pharmaceutical Industry | Health Care | Hospital stay (few months) | 3 | Yes |
| Davies et al. 2005, UK; placebo mean age 61.8 yrs (SD, 16.1 yrs) and treatment 61.2 yrs (16.8 yrs); 57.5 and 55.7% men, respectively | Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of one or more organ dysfunction; from PROWESS study  Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of one or more organ dysfunction | Drotrecogin alfa (activated) administered as a 96-hr intravenous infusion at 24 µg/kg/hr to adults presenting with severe sepsis in addition to usual care | Placebo | ICER 13,391  ICER 22,157 | -- | Pharmaceutical Industry | Health Care | Lifetime | 3.5 | Yes |
| Green et al. 2006, UK; mean age 60.8 yrs (SD, 16.9 yrs); 54.3% men | Adult patients who had severe sepsis or multiple organ systems failing  Adult patients who had severe sepsis | Drotrecogin alfa | Usual care | 18,047  20,094 | 10,816  12,053 | Government | Third Party Payer | Lifetime | Costs 6  Benefits 1.5 | Yes |
| Franca et al 2006, France; mean age 65.1 yrs; 64.2% men | Adult patients who had severe sepsis or multiple organ systems  failing  Adult patients who had severe sepsis with ≥ 3 organs failing  Adult patients who had severe sepsis with ≥ 2 organs failing | Drotrecogin alfa | Usual care | ICER 26,263  ICER 28,777  ICER 39,366 | ICER all patients 15,759  ICER 10,503 per life year gained  ICER 23,619 per life year gained | Pharmaceutical Industry | Hospital | Hospitalization period | No | Yes |
| Dhainaut et al. 2007, France; mean age 60.8 yrs (SD, 16.3 yrs); 62% men | Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of one or more organ dysfunction | Drotrecogin alfa (activated) administered as a 96-hr intravenous infusion at 24 ug/kg/hr to adults presenting with severe sepsis in addition to usual care | Placebo | ICER 66,713 | ICER 40,027 | Government | Health Care | Lifetime | 3.5 | No |
| Huang et al. 2007, US; -- | Adult patients with severe sepsis/septic shock | EDGT | Usual care | CER 3,378 | -- | Health Care Organization | Hospital | Lifetime | 3 | Yes |
| Talmor et al. 2008, US; usual care (n=51) mean age 72 yrs (SD, 16 yrs) and treatment 68 yrs (16 yrs); 43% and 47%, respectively | Adult patients with severe sepsis/septic shock | MUST protocol; integrated sepsis protocol the utilizes treatments of a) EDGT; b) antibiotics; c) steroids in adrenal suppression; d) assessment for activated protein C therapy; e) tight glycemic control; and f) low tidal volume ventilation for patients with lung injury | Usual care | ICER 20,721 | ICER 14,324 | Not stated | Health Care | Lifetime | 3 | Yes |
| Karlsson et al. 2009, Finland; mean age 60.4 (SD, 14.3 yrs); 64.7% men | Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of one or more organ dysfunction  Adults with severe sepsis defined as suspected or proven infection, evidence of systemic inflammation, and sepsis-included dysfunction of one or more organ dysfunction; age ≥55 years | ICU care for severe sepsis | None | 3,338  Older age groups: 507 to  19,429 | -- | Health Care Organization; Government | Provider | Not determined | No/not stated | No |
| Lehmann et al. 2010, Switzerland; -- | Adults admitted to an ICU with diagnosis of sepsis | PCR-based rapid adjustment of antimicrobial treatment | Usual care | ICER 4,534 | -- | Pharmaceutical Industry | Provider | Not determined | No/not stated | Yes |
| Jones et al. 2011, US; usual care (n=79) mean age 58 yrs (SD, 16 yrs) and protocol (n=2-6) 56 yrs (18 yrs); 495 and 59% men, respectively | Adults with sepsis requiring ICU admission | Emergency department based early sepsis resuscitation protocol | Usual care (prior to implementation of protocol) | CER 6,425 | -- | Government | Health Care | Lifetime | 3 | Yes |
| Sadique et al. 2011, UK (Wales and Northern Ireland); control group (n=1650) mean age 64.4 yrs and treatment (n=1076) 58.7 yrs | Adult patients who had severe sepsis or multiple organ systems failing  Adult patients who had severe sepsis with 3-5 organs failing  Adult patients who had severe sepsis with 2 organ systems failing  Adult patients who had severe sepsis with 2 organ systems failing receiving Drotrecogin alfa within 24 hours | Drotrecogin alfa | No drotrecogin alfa | ICER 51,598  ICER 26,302  ICER 18,593 | -- | Pharmaceutical Industry | Health Care | Lifetime | 3.5 | Yes |
| Suarez et al. 2011, Spain; usual care (n=854) mean age 62.4 yrs (SD, 16.4 yrs) and SSC protocol (n=1465) 62.1 yrs (16.3 yrs); 62% and 60% men, respectively | Adult patients with severe sepsis enrolled in an educational program in 59 medical/surgical ICUs located throughout Spain | SSC protocol after implementation of educational program | Usual care | --b | ICER 6619 per life year gained | Pharmaceutical Industry | Health Care | Not determined | 3 | Yes |
| Assuncao et al. 2014, Brazil; (n=414) mean age 66 yrs (SD, 19 yrs); 58% men | Adult patients with severe sepsis; single centre cohort with retrospective control | SSC protocol implementation; lectures, e-learning modules for multidisciplinary team, distribution of brochures | Usual care | --c | -- | No funding | Health Care | Not determined | No/not stated | No |
| Noritomi et al. 2014, Brazil; (n=2120) mean age 62 yrs (SD, 20 yrs); 48% men | Adult patients with severe sepsis and lactate <4 mmol/L (pre- and post- implementation)  Adult patients with septic shock with lactate ≥4 mmol/L (pre- and post- implementation) | Multifaceted, centrally coordinated quality improvement program to improve resuscitation bundle compliance (full compliance with the 6-hr bundle) | Usual care (prior to implementation of protocol) | ICER -10,075  ICER -5,144 | -- | Not stated | Health Care | 3 months | 3 | Yes |
| Harrison et al. 2015, US; -- | **Hypothetical cohort** of adult ICU patients with suspected bacterial infection and sepsis in a base case  Adult ICU patients with suspected bacterial infection and sepsis with  100% algorithm compliance  Adult ICU patients with suspected bacterial infection and sepsis with  procalcitonim tests/case=10  Adult ICU patients with suspected bacterial infection and sepsis with  no CDI or nephrotoxicity reduction | Pro-calcitonin guided treatment algorithm | Usual care | ICER 248,893  --d | -- | No funding | Hospital | 1 year | No/not stated | Yes |
| Mouncey et al. 2015, UK; usual care mean age 64.3 yrs and treatment 66.4 yrs; 58.6% and 57% men, respectively | Adult patients within 6 hours after emergency room presentation with sepsis | Early-goal directed therapy with a 6-hour resuscitation protocol | Usual care | --e | -- | Government | Health Care | 90 days and 1 year | No/not stated | No |

**a**Cost-effectiveness analysis after Monte Carlo simulation for drotrecogin alfa (activated) plus best standard care versus best standard care alone (placebo): No. of organ system failures ≥ 1 mean ICER $138,881 (95% CI: $33,181 – $261,585); No. of organ system failures ≥ 2 mean ICER $104,161 (95% CI: $25,922 – $195,330); No. of organ system failures ≥ 3 mean ICER $92,825 (95% CI: $22,731 – $174,423); and No. of organ system failures ≥ 4 mean ICER $75,680 (95% CI: $18,679 – $143,827).

bMean life years gained 0.54 years in SSC protocol group

cIncremental cost difference was lower than or equal to zero; cost of treatment during ICU stay reduced from 138237 +/- 202418 (control) to 85484 +/- 127471 (protocol); direct costs of hospitalization 6223 and 3893

dIncremental net benefit of -$1,440.

eIncremental cost $66, $358, $47 and $234 for base case, and secondary analyses of 100% algorithm compliance, procalcitonin tests/case=10, and no *Clostridium difficile* infection or nephrotoxicity, respectively.

**Supplemental Table 2. Interventions in respiratory intensive care**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Authors (Reference No.), Year of**  **Publication, Country** | **Target Population** | **Intervention or Practice** | **Comparator** | **Cost/QALY** | **Cost/Life Year Saved** | **Funding** | **Perspective** | **Time Horizon** | **Discount Rate, %** | **Sensitivity Analysis** |
| Wachter et al. 1995, US; non-ICU group (n=33) mean age 36.4 yrs (SD, 6 yrs) and ICU admission group (n=37) 37.5 yrs (8.7 yrs); 97% and 92% men, respectively | Patients admitted to the ICU with  AIDS-related Pneumocystis carinii pneumonia and severe respiratory failure, requiring mechanical ventilation | ICU admission for intubation and mechanical ventilation | Non-ICU admission (patients die if not admitted to the ICU) | -- | ICER 307,993 | Healthcare Organization | Payer | Hospital stay | No/not stated | No |
| Añón et al. 1999, Spain; (n=20) median age 64 yrs (range, 44-77 yrs); 90% men | Patients with exacerbations of chronic obstructive pulmonary disease treated with long-term oxygen therapy needing mechanical ventilation due to respiratory failure | Mechanical ventilation | None | 43,655 to 74,082 | -- | Not stated | Health Care | Lifetime | No/not states | No |
| Hamel et al. 2000, US; (n=963) 63 yrs (IQR, 46-75 yrs); 56% men | Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. Low- risk patients (>70% probability of surviving ≥2 months from the time of ventilator support)  Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. Medium-risk patients (>51-70% probability of surviving ≥2 months from the time of ventilator support)  Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. High- risk patients (>50% probability of surviving ≥2 months from the time of ventilator support) | Mechanical ventilation and continued aggressive care | Mechanical ventilation withheld | ICER 42,701  ICER 64,787  ICER 161,968 | -- | Foundation | Health Care | Lifetime | 3 | Yes |
| Mayer et al. 2000, US; (n=52) median age 52 yrs (range, 34-94 yrs); 46% men | Patients aged ≥40 years hospitalized for stroke | Mechanical ventilation | Mechanical ventilation withheld | 266,470 | 57,516 | Government | Health Care | Lifetime | 3 | Yes |
| Hamel et al. 2001, US; 56% men | Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. Low- risk patients (>50% probability of surviving ≥2 months from the time of ventilator support), age of <65 years  Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. Low- risk patients (>50% probability of surviving ≥2 months from the time of ventilator support), age 65-74 years  Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. Low- risk patients (>50% probability of surviving ≥2 months from the time of ventilator support), age of ≥75 years  Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. High- risk patients (<50% probability of surviving ≥2 months from the time of ventilator support), age of <65 years  Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. High- risk patients (<50% probability of surviving ≥2 months from the time of ventilator support), age 65-74 years  Patients with acute respiratory failure (pneumonia or acute respiratory distress syndrome and an APACHE II score of ≥10 requiring ventilator support. High- risk patients (<50% probability of surviving ≥2 months from the time of ventilator support), age of ≥75 years | Mechanical ventilation and continued aggressive care | Mechanical ventilation withheld | ICER 47,118  ICER 64,787  ICER 67,732  ICER 191,417  ICER 147,244  ICER 141,354 | -- | Foundation | Health Care | Lifetime | 3 | Yes |
| Cox et al. 2007, US; base case age 65 yrs | Patients who received prolonged mechanical ventilation | Mechanical ventilation ≥21 days with tracheostomy in place  Mechanical ventilation ≥4 days plus tracheostomy  Mechanical ventilation for  ≥2 days but ≤7 days | Withdrawal of ventilation from a patient receiving mechanical ventilation for ≥7 days but <21 days | ICER 101,276  ICER 90,484  ICER 35,045 | ICER 68,156  ICER 60,862  ICER 23,451 | Government | Health Care | Lifetime | 3 | Yes |
| Cooke et al. 2009, US; -- | Adult patients receiving mechanical ventilation for acute  lung injury | Low tidal volume ventilation strategy | Non-low tidal volume ventilation strategy | ICER 13,031 | -- | Health Organization | Societal | Lifetime | 3 | Yes |
| Peek et al. 2009, UK; conventional mechanical ventilation mean age 40.4 yrs (SD, 13.4 yrs) and ECMO 39.9 yrs (13.4 yrs); 59% and 57%, respectively | Adults with severe acute respiratory failure | ECMO | Conventional mechanical ventilation | ICER – lifetime (discounted):  43,040 | -- | Health Care Organization;  Government | Publicly Funded Health; Societal | Lifetime | 3.5 | Yes (for key cost variables) |
| Malmivaara et al. 2009, Finland; (n=346) median age 58 (IQR, 47-70 yrs); 62% men | Neurosurgical patients in poor condition discharged from the ICU requiring ongoing chronic ventilator support | Step-down unit care for ongoing ventilator support | None | 3,934 | -- | Health Care Organization; Government | Provider | Lifetime | No/not stated | No |
| Linko et al. 2010, Finland; (n=958) median age 63 (IQR, 51-74 yrs); 66.5% men | Adult patients with acute respiratory failure | Ventilatory support over 6 hours | None | 2,030 | -- | Health Care Organization; Government | Provider | Lifetime | No/not stated | No |
| Hung et al. 2012, Taiwan; mean age 75 yrs (SD, 15 yrs); 60% men | Adults admitted to the ICU requiring prolonged mechanical ventilation (≥21 days) | Continued mechanical ventilation | None | 74,843 (partial cognition);  148,293 (poor cognition) | -- | Government | Insurer; Patient | Not determined | No | Yes |
| Park et al. 2014, Brazil; conventional mechanical ventilation (n=90) mean age 40.4 yrs (13.4 yrs) and ECMO (n=90) 39.9 yrs (13.4 yrs); 59% and 57% men, respectively | **Hypothetical cohort** of adults patients with refractory hypoxemia and ARDS with expected survival rate of patients receiving ECMO of 40% and 60%, respectively  Adults patients with refractory hypoxemia and ARDS with expected survival rate of patients receiving ECMO of 40% and 60%, respectively | Extracorporeal membrane oxygenation | Conventional mechanical ventilation | -1,363, -51  -160, 4 | -194  -32 | No funding | Health Care | 6 months | 1 | No |
| Siddiqui et al. 2015, Pakistan; late tracheostomy mean age 31 yrs (SD, 16.9 yrs) and early tracheostomy 38.4 yrs (17.9 yrs) | Adult ICU patients with isolated severe TBI (defined as a GCS < 8) requiring airway control and mechanical ventilation | Early tracheostomy (within 7 days of intubation) | Late tracheostomy (>7 days after intubation) | --a | -- | Not stated | Not stated | Not determined | No/not stated | No |
| Herritt et al. 2018, Canada; -- | **Hypothetical cohort** based on literature | Early tracheostomy (within 10 days of intubation) | Late tracheostomy (>10 days after intubation) | ICU 4,316 (403 to 8229) cost difference (US$/patient)  Hospital 10,251 (-946 to 21449) (US$/patient) | -- | Not stated | Hospital | Not determined | No/not stated | Yes |
| Saunders et al. 2018, US and UK; US mean age 63.5 yrs (SD, 16.3 yrs) and 78% men; UK mean age 55.4 yrs (SD, 16.8 yrs) and 62% men | **Hypothetical cohort** of ICU patients defined by US and UK literature (Markov Model) | Proportional assist ventilation (PAVTM) | Pressure support ventilation | ICER 8,732 and 4,618 | -- | Commercial | Provider | 1 and 5 years | 3.5 | Yes |
| Turner and Jenks 2018, UK; -- | **Hypothetical cohort** of ICU patients who have acuterespiratory failure and have not previously undergone endotracheal intubation | Nasal high flow | Standard oxygen or non-invasive mechanical ventilation | --b | -- | Commercial | Publicly Funded Healthcare | 5 years | No/not stated | Yes |

aCost: 8977 (n=49) vs 11140 (n=51)

bCost difference: Pre-intubation, overall population, standard oxygen as comparator, -726; Pre-intubation, overall population, noninvasive ventilation (NIV) as comparator, -945; Pre-intubation, low-risk population, standard oxygen as comparator, -241; Pre-intubation, low-risk population, noninvasive ventilation (NIV) as comparator, -161

**Supplemental Table 3. Interventions in general intensive care**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Authors (Reference No.), Year of**  **Publication, Country** | **Target Population** | **Intervention or Practice** | **Comparator** | **Cost/QALY** | **Cost/Life Year Saved** | **Funding** | **Perspective** | **Time Horizon** | **Discount Rate, %** | **Sensitivity Analysis** |
| Fenton-Lee et al. 1993, UK; median age 63 yrs (range, 29-73 yrs); 70% men | Patients admitted to the hospital requiring operative intervention for pancreatic necrosis | Pancreatic surgery  (necrostomy and packing or continuous peritoneal lavage after blous intravenous contrast- enhanced CT and percutaneous aspiration of potentially infected necrosis) | No treatment for pancreatic necrosis | 6,514 | -- | Not stated | Health Care | Unclear | 5 (outcomes only) | No |
| Schapira et al. 1993, US; mean age 56 yrs; 54.6% men | Patients with solid tumors admitted to the intensive care unit  Patients with hematologic cancers admitted to the intensive care unit | Intensive care unit admission | -- | -- | 152,130  347,867 | Not stated | Health Care | Three years | No/not stated | No |
| Smith et al. 1994, US; -- | Patients with an acute exacerbation of chronic obstructive pulmonary disease | Pulmonary artery catherization | No PAC | ICER 132,613 | -- | Not stated | Health Care | Lifetime | No/not stated | Yes |
| Kerridge et al. 1995, Australia; mean age 54.7 yrs | Patients admitted to a general hospital for asthma  Patients admitted to a general hospital for trauma  Patients admitted to a general hospital for general medical diagnosis  Patients admitted to a general hospital for vascular surgery  Patients admitted to a general hospital for cardiac arrest  Patients admitted to a general hospital for general surgery  Patients admitted to a general hospital for pulmonary edema | Intensive care unit treatment | Standard ward treatment | 436  1,144  1,229  1,857  1,785  2,159  3,412 | -- | Government | Hospital | Three years | 5 | No |
| Hamel et al. 1997, US; median age 61 yrs (IQR, 46-69 yrs); 42% men | Seriously ill hospitalized patients developing renal failure during their hospital admission | Treatment with hemodialysis or peritoneal dialysis | Withholding dialysis and allowing death to occur | 207,617 | -- | Foundation | Health Care | Lifetime | 3 | Yes |
| Heyland et al. 1998, Canada; average age 56 yrs (SD, 20 yrs); 56.3% men | Critically ill patients who have remained in the intensive care unit for 14 days | Continue supportive care unit until the patient either dies or survives and leaves the intensive care unit | Withdraw care and transfer the patient out of the intensive care unit | -- | ICER 6,163 | Not stated | Health Care | 1 year | None | Yes |
| Sznajder et al. 2001, France; (n=211) mean age 55.4 yrs (SD, 19.5 yrs); 55.9% men | Patients with at least one organ failure: circulatory, respiratory, or coma, requiring vital support | Intensive care unit admission | “Do nothing” (with a theoretical certainty of death) | ICER 6,272 | ICER 1,759 | Healthcare Organization | Health Care | 6 months | 3 and 5 (only health benefits) | Yes |
| Hamel et al. 2002, US; median age 67 yrs (IQR, 55-77 yrs); 52% men | Patients hospitalized with nontraumatic coma (excluding more reversible causes of coma such as diabetic ketoacidosis and uremia); High-risk patients were defined as 3-5 risk factors of the following: age of ≥70 years, abnormal brainstem response, absent verbal response, absent withdrawal to pain, and serum creatinine of ≥1.5 mg/dL  Patients hospitalized with nontraumatic coma (excluding more reversible causes of coma such as diabetic ketoacidosis and uremia); Low-risk patients were defined as 0-2 risk factors of the following: age of ≥70 years, abnormal brainstem response, absent verbal response, absent withdrawal to pain, and serum creatinine of ≥1.5 mg/dL | Aggressive treatment strategy that did not include a plan to limit life- sustaining treatments | Less aggressive treatment strategy involving a decision by day 4 of coma to withhold CPR and ventilator support (DNR order had been written) | 206,141  128,102 | -- | Foundation | Health Care | Lifetime | 3 | Yes |
| Paniagua et al. 2002, US; mean age 86 yrs (SD, 4.8 yrs); 42% men | Patients aged ≥80 years who experienced in-hospital cardiac arrest in the emergency department, surgical recovery unit, or in the operating room | CPR for in-hospital cardiac arrest | No CPR | 127,845 | 102,276 | Not stated | Health Care | Lifetime | None | Yes |
| Marciante et al. 2003, US; mean age 56 yrs | Hospitalized adults at high risk of developing a CR-BSI who were likely to require a triple-lumen central venous catheter for ≥3 days | Use of minocycline/rifampin catheters for ≥8 days | Use of chlorhexidine/silver sulfadiazine catheters for ≥8 days | --a | -- | Government | Health Care | Lifetime | 3 | Yes |
| Shorr et al. 2004, US; -- | Adults in the ICU with a clinical diagnosis of ventilator associated pneumonia who were being treated with an antibiotic regimen including agents directed against *Staphlococcus aureus* | Linezolid | Vancomycin | ICER 40,605 | 31,113 | Not stated | Third Party Payer | Lifetime | 3 (second analysis only) | Yes |
| Grau et al. 2005, Spain; -- | **Hypothetical cohort** of adult patients with ventilator-associated *Staphyloccocus aureus* pneumonia | Linezolid | Vancomycin | ICER 2,018 for All VAP cases  ICER 1,284 for S.aureus VAP cases  ICER 427 for MRSA VAP cases | -- | Pharmaceutical Industry | Health Care | 28 days | No/not stated | Yes |
| MacLaren et al. 2005, US; -- | Adults admitted to an ICU | 300 units/kg rHuEPO administered on ICU day 3, continuing daily for a total of 5 days, then as needed for 2 weeks to achieve a Hct > 38% | Usual care + placebo | 41,891 and 57,942 for studies 1 and 2, respectively  Incorporating the restrictive transfusion study: 178,752 | -- | Not stated | Health Care | Lifetime | 3 | Yes |
| Graf et al. 2005, Germany; (n=303) mean age 62 yrs (SD, 12 yrs); 71% men | Patients with predominantly cardiovascular and pulmonary disorders admitted with an intensive care unit length of stay >24 hrs | ICU stay >24 hours, variety of active and nonactive treatments | None | 27,665 for the remaining life span | -- | Not stated | Societal | Not determined | 3 | Yes |
| Stevens et al. 2005, UK; -- | Patients admitted to adult intensive care and identified by the treating clinician as someone who should be managed with a PAC | Management with a PAC | Management without a PAC | ICER 6,052 | -- | Government | Health Care | Lifetime | 3.5 (years 1-30); 3 (years 31-  75); 2.5 (years 76-125) | Yes |
| Edwards et al. 2006, UK; median age 59 (range, 16-86 yrs); 76% men | **Hypothetical cohort** of adult patients admitted to the ICU with a severe infection; baseline efficacy data on antibiotics from literature review | Merepenem plus cilastatin | Imipenem plus cilastatin | --b | -- | Not stated | Health Care | Not determined | 3.5 | Yes |
| van Mastrigt et al. 2006, Netherlands; control (n=297) mean age 62.6 yrs and short stay ICU management (n=296) 62.7 yrs; 80.3% and 79.2% men, respectively | All low-risk CABG patients | Short-stay intensive care | No intensive care management | --c | -- | Health Care Organization | Hospital | 30 post-operative days | No/not stated | Yes |
| Ridley et al. 2007, UK; -- | Patients appropriately referred for ICU admission; impact of ICU care on mortality | Intensive care management | No intensive care management | ICER 14,944 | -- | Not stated | Health Care | Lifetime | 3.5 | Yes |
| Desai et al. 2008, US; base case age 60 yrs | Adult patients with critical illness resulting in AKI | Daily hemodialysis strategy | Conventional alternate-day hemodialysis strategy | Daily hemodialysis compared to alternate-day: 6,053 | -- | Health Care Organization | Health Care | Lifetime | 3 | Yes |
| Graf et al. 2008, Germany; (n=81) mean age 61 yrs (SD, 13 yrs); 70% men | Patients admitted to ICU who received CPR for out-of-hospital or in-hospital cardiac arrest for any cause | ICU | None | --d | -- | Not stated | Societal | Lifetime | 3 | Yes |
| Brown et al. 2009, UK; ages 1.01-16.08 yrs | Pediatric patients with dilated cardiomyopathy; severe end- stage heart failure | ECMO bridging to transplant | Usual ICU supportive care prior to transplant | ICER 143,985 | ICER 119,066 | Not stated | Health Services | Lifetime | 3.5 | Yes |
| Chiasson et al. 2009, Canada; (n=1015) mean age 39.3 yrs (range, 38.1-40.5 yrs); 76% men | Trauma patients admitted to an intensive care unit with severe injuries who were believed to have a contraindication to pharmacological prophylaxis | Pneumatic compression devices and serial doppler ultrasound  Pneumatic compression devices and prophylactic insertion of a vena cava filter | Pneumatic compression devices and expectant management alone | --e | -- | No funding | Purchaser | Lifetime | 5 | Yes |
| Merchant et al. 2009, US; -- | **Hypothetical cohort** of patients who achieved return of spontaneous circulation after a witnessed VF arrest | Therapeutic hypothermia (32-34 degrees C) | Standard care | ICER 52,539 | -- | Government | Societal | Not determined | No/not stated | Yes |
| Zilberberg et al. 2009, US; base case age 80 yrs | Adult patients with sepsis and suspected ICU-acquired candidemia | Micafungin and fluconazole as empiric treatment for suspected ICU-AC | Micafungin or fluconazole as empiric treatment for suspected ICU-AC | ICER 38,719 | ICER 19,029 | Pharmaceutical Industry | Hospital; Population | Lifetime | 3 | No |
| Hutchings et al. 2009, UK; mean age 60.2 yrs; 57.5% men | Adults admitted to ICU | Unit adoption of key elements of modernization (e.g. ventilator care bundle) and increases in capacity | Unit as yet to adopt modernization of ICU services | --f | -- | Government | Hospital | Lifetime | 3.5 | Yes |
| Cuthbertson et al. 2009, UK; median age 60 (IQR, 46-71 yrs); 60% men | Adults admitted to an ICU having survived to hospital discharge | Nurse-led follow-up care | Usual care | --g | -- | Health Care Organization; Government | Health Care | Not determined | No | No |
| Halton et al. 2009, UK; -- | **Hypothetical cohort using markov decision model** to compare the cost effectiveness of A-CVCs relative to uncoated catheters -- 4 types: minocycline and rifampicin; silver, platinum and carbon impregnated catheters; two chlorhexidine and silver sulfadiazine-coated catheter (one coated on the external surface and other coated on both internal/external surfaces) | Uncoated catheter | Four types of A-CVC | --h | -- | Pharmaceutical Industry | Health Care | Not determined | 3 | Yes |
| Zilberberg et al. 2009, US; median age 64 yrs (IQR, 48-80 yrs) | **Hypothetical cohort** of adult ICU with suspected ICU acquired candidemia; literature search derived values based on number of large international cohort studies | Micafungin and fluconazole | Micafungin or fluconazole with watchful waiting as the empiric treatment | ICER 38,689 | -- | Pharmaceutical Industry | Hospital; Population | Lifetime | 3 | No |
| Kantola et al. 2010, Finland; MARS group (n=90) median age 45 (range, 14-81 yrs) and historical control (n=17) 42 (21-72 yrs); 41% men | Retrospective cohort with 90 ALF patients treated with MARS from 2001-2005 | MARS for ALF | Historical control (n=17) | ICER 16,309i | -- | Government | Health Care | 3-year | 5 | Yes |
| McGarry et al. 2010, US; -- | **Hypothetical cohort** of adult patients with ventilator-associated pneumonia | Doripenem | Imipenem | --j | -- | Pharmaceutical Industry | Third-party payer | Not determined | No/not stated | Yes |
| van Eerd et al. 2010, UK; -- | Adults admitted to an intensive care unit requiring a plasma transfusion | Pharmaceutically licensed plasma (OctaplasLG) | Fresh Frozen Plasma (FFP) | ICER 1,796 | ICER 1,655 | Pharmaceutical Industry | Health Care | Lifetime | 3.5 | Yes |
| Edwards et al. 2011, UK; base case mean age 68.4 yrs (SD, 13.7 yrs); 70% men | Adults admitted to the ICU with severe pneumonia having failed on first-line antibiotics | Antibiotic therapy with meropenem 1g/8h | Antibiotic therapy with piperacillin-tazocin 4.5 g/8h | --k | -- | Pharmaceutical Industry | Hospital | Lifetime | 3.5 | Yes |
| Clermont et al. 2011, US; mean age 49.8 yrs (SD, 16 yrs); 53% men | Adults admitted to the ICU with acute lung injury; the FACTT trial | Use of a pulmonary artery catheter to guide care | No PAC but a CVC to guide care | --l | -- | Government | Health Care | Lifetime | 3 | Yes |
| Sud et al. 2011, Canada; base case mean age 65 yrs | Adult patients requiring mechanical ventilation | Thromboprophylaxis with low-molecular-weight heparin and underwent ipsilateral compression ultrasound only if symptoms and signs of lower extremity DVT, plus repeated examination in 3 days if initial examination was negative | Patients without clinical suspicion of DVT were also screened once weekly during ICU stay for asymptomatic DVT using bilateral compression ultrasound of the proximal leg veins | Case finding: not reported  ICER 230,142 | -- | Health Care Organization;  Government | Health Care | Lifetime | 3 | Yes |
| Robotham et al. 2011, UK; -- | Theoretical population of patients on an intensive care unit where MRSA was transmitting | 12 strategies for screening plus isolation and nine for screening plus decolonization. | Usual care | --m | -- | Health Care Organization; Government | Policy Makers | Not determined | No/not stated | Yes |
| Chui et al. 2012, Canada; mean age 41 yrs; 74% men | Trauma patients; the EPO-3 study | Usual care and Epoetin alfa administered weekly for a total dose of 92,000 units | Usual care | ICER 88,667 at 1-year;  ICER 11,129 at 10 years;  ICER 7,100 at 25 years | -- | Not stated | Health Care | 1 year | No (Lifetime sensitivity analysis: 5 ) | Yes |
| De Smedt et al. 2012, Belgium; -- | Adult ICU patients with serum creatinine > 2 mg/dL admitted to 1 of 9 Belgian ICUs participating in the SHARF4 study | CRRT | IRRT  Conservative management | ICER 169,265  ICER 876,539 | -- | Commercial | Payer | 2 years | 3 | Yes |
| Laukkanen et al. 2013, Finland; median age 61.5 yrs (IQR, 49-72 yrs); 69% men | Retrospective cohort of patients treated with acute RRT in 1998-2002 from Helsinki University Hospital | RRT-treated patients | -- | --n | -- | Government | Societal | 5 years and lifetime | 3 | Yes |
| Alali et al. 2014, Canada; mean age 25 yrs | **Hypothetical cohort** of trauma patients; base case of patients with refractory intracranial hypertension | Decompressive craniectomy | Barbiturate coma | ICER 9,854 | -- | Not stated | Health Care Payer | Lifetime | 3 | Yes |
| Cooper et al. 2014, UK; -- | **Hypothetical cohort** of adult patients in ICUs in England and Wales; CVC care bundle in this analysis replicated the original US Keystone ICU project approach, with data parameters from the Matching Michigan programme in the UK and the CLAB ICU project | CVC care bundle implementation | Usual practice | -948 cost per QALY gainedo | -727 cost per life-year saved | Government | Health Care | Not determined | No/not stated | No |
| Fowler et al. 2014, Canada and Australia/New Zealand; -- | Adult critically ill patients from ICUs (n=23 of 67) participating in the PROSPECT study | LMWH dalteparin | UFH for prevention of VTE in critically ill medical-surgical patients | --p | -- | Government | Health Care | Hospital discharge or death | No/not stated | Yes |
| Malhotra et al. 2014, US; standard care (n=1422) mean age 40.8 yrs (SD, 0.5 yrs) and DVT surveillance 40.7 yrs (0.4 yrs); 72% and 73% men, respectively | Adult traumatized patients admitted to an ICU | Twice weekly DVT surveillance by bilateral lower extremity venous Duplex examination | Standard care | ICER 29,952 (for patients not experiencing fatal PE) | -- | No funding | Health Care | Not determined | 3 | Yes |
| Dick et al. 2015, US; (n=15311) median age 77 yrs; 51% men | **Hypothetical model** of five years of Medicare data combined with HAI rates, cost and quality of life estimates from literature | Multifaceted infection prevention program | Usual care | 23,958 per QALY gained | ICER 14,667 per life year gained | Government | Societal | Lifetime | 3 | Yes |
| Ethgen et al. 2015, Canada; -- | **Hypothetical cohort** of adult patients with acute kidney injury | Continuous renal replacement therapy | Intermittent renal replacement therapy | ICER -119,635 (CRRT dominates) | -- | Not stated | Third-party Payer | 5 years | 3 | Yes |
| Fletcher et al. 2015, US; mean age 65 yrs (SD, 10 yrs) | **Hypothetical cohort** of adult patients with intracerebral hemorrhage | Transfer to hospital with neuro-ICU | Usual care | ICER Favorable: 48,866  ICER Moderately favorable: 94,448  ICER Least-favorable: 391,869q | -- | Government | Societal | Lifetime | 3 | Yes |
| Gajarski et al. 2015, US; -- | **Hypothetical cohort** of patients who achieved return of spontaneous circulation | Therapeutic hypothermia (32-34 degress C): cooling blankets, peritoneal lavage and VV-ECMO | Standard care | ICER for peritoneal lavage vs cooling blankets 59,088r | -- | Not stated | Societal | Lifetime | 3 | Yes |
| Hafner et al. 2015, Germany; CRRT with citrate mean age 68 (SD, 17 yrs) qnd CRRT with heparin age 69 (11 yrs); 73% and 72% men, respectively | Retrospective cohort of non-cardiac surgical and trauma ICU in a university hospital | CRRT with regional citrate anticoagulation | CRRT with systemic heparin anticoagulation | --s | -- | Not stated | Health Care | Not determined | No/not stated | No |
| Nelson et al. 2015, US; -- | **Hypothetical cohort** of 45-year-old patients in an ICU with a central line placed on a certain day of the week | Central line maintenance kit | Usual care | --t | -- | No funding | Health Care | Lifetime | 3 | Yes |
| Petrie et al. 2015, UK; mean age 63.5 yrs (SD 14.7 yrs); 72% men | Single centre study of adult patients admitted to ICU after successful resuscitation after cardiac arrest | High-quality survivor (Pittsburgh Cerebral Performance Category Score [CPC] 1-2) | Low-quality survivor (CPC Score 3-4) | 26,484 per QALY of high-quality survivor | 18,208 per life year gained per high-quality survivoru | No funding | Health Care | Not determined | No/not stated | No |
| Rosenthal et al. 2015, India; 3-way stopcock (n=549) mean age 60.3 yrs (SD, 16.7 yrs) and split septum system 60.2 yrs (17.7 yrs); 68% and 65%, respectively | Adult patients admitted to a medical-surgical ICU requiring central line access | Split septum system and single-use prefilled flushing device | 3-way stopcock | --v | -- | Foundation | Health Care Payer | Unclear | No/not stated | No |
| St-Onge et al. 2015, Canada; -- | Adults in shock or in cardiac arrest secondary to cardiotoxicant poisoning | VA-ECMO | Standard therapies for patients poisoned with cardiotoxicants in persistent cardiac arrest or severe shock at arrival to the emergency department | -- | ICER 7,181 per life year gained  8,743 per life year gained if treating only patients with severe shock  5,148 per life year gained if treating only patients in cardiac arrest | No funding | Societal | Lifetime | No/not stated | Yes |
| Cubro et al. 2016, Bosnia and Herzegovina | Cohort of adult patients admitted to an ICU compared to a hypothetical cohort of patients admitted to hospital ward | Intensive care unit admission | Non-ICU based treatment; medical ward treatment | ICER 3,402w | -- | No funding | Health Care | Lifetime | 3 | Yes |
| Grieve et al. 2016, UK | Adult patients admitted to an ICU with traumatic brain injury; costs estimated from Risk Adjustment In Neurocritical care (RAIN) study  “Early” vs “no or late” transfer to a neuroscience centre | Admission to a dedicated neuro-ICU | Treatment in a combined neuro-/general ICU | ICER 22,243  ICER 16,852 | -- | Not stated | Health Care | Lifetime | 3.5 | Yes |
| Yoo et al. 2016, US; -- | **Hypothetical cohort** of ICU patients defined by US literature | Telemedicine | Usual care | ICER 45,946 | -- | No funding | Health Care | 5 years | 3 | Yes |
| Kardas-Sloma et al. 2017, France; -- | **Hypothetical model** of the spread of extended spectrum beta-lactamase-producing Enterobacteriaceae (ESBL-PE) among patients through contacts with HCWs in the ICU | Universal strategies (eg. improved hand hygiene among healthcare workers, antibiotic stewardship) | Targeted strategies (eg. screening of patient for ESBL-PE at ICU admission and contact precautions or cohorting carriers) or mixed strategies (eg. targeted approaches combined with antibiotic stewardship) | ICER 55,080 with hand hygiene at 80% + ATB reduction  ICER 69,609 with screening + cohorting + ATB reduction | -- | Government | Hospital | 1-year | No/not stated | Yes |
| Lindemark et al. 2017, Norway(n=30,712) mean age 63.2 yrs (SD, 18.2 yrs) | **Hypothetical cohort** using Norwegian Intensive Care Registry for model | ICU admission | Hypothetical ICU rejection (resembling general ward care) | 12,797  11,804 for medical admission  13,569 for admission after acute surgery  16,217 after planned surgery | -- | Government | Hospital; Health Care Provider | Lifetime | 4 | Yes |
| Ridyard et al. 2017, UK; -- | Economic evaluation of the CATCH trial; 1485 children < 16 years admitted to one of 14 pediatric ICUs in England expected to require a CVC for ≥ 3 days | Heparin-bonded, antibiotic impregnated (rifampicin and minocycline) CVC | Standard polyurethane CVC | 87,032 per BSI averted | -- | Government | Publicly Funded Healthcare | 6 months | No/not stated | Yes |
| Walsh et al. 2017, UK; median age 62; 53% men | Adult ICU patients expected to require mechanical ventilation > 48 hours and requiring a first RBC transfusion during first 7 days of ICU admission | Fresh blood (2-7 days storage life) | Standard-age blood (18-21 days storage life) | ICER -357x | -- | Government | Publicly Funded Healthcare | 1 year | No/not stated | Yes |
| Maunoury et al. 2018, France; -- | Cohort of adult ICU patients from 11 French ICU in 5 University hospitals and one general hospital (**Semi-Markovian model** using the CLEAN database) | Skin antiseptic solutions (chlorhexidine-alcohol) for the prevention of CRBSI | Povidone iodine-alcohol solution for the prevention of CRBSI | --y | -- | Commercial | Hospital | 100 days | No/not stated | Yes |
| McKinnell et al. 2018, US; -- | **Hypothetical cohort** of adult patients with hospital-acquired or ventilator-associated *Staphyloccocus aureus* pneumonia | Telavancin | Vancomycin | ICER 4,156 per additional cure | -- | Pharmaceutical Industry | Hospital | Duration of hospitalization | No/not stated | Yes |
| Osorio et al. 2018, US; mean age 49 yrs (range, 29-75 yrs) | Patients undergoing a neurosurgical craniotomy for supratentorial brain tumor excision | Post-operative care in a neuro transitional care unit (NTCU) | Post-operative care in a neuro-ICU | --z | -- | Not stated | Health Care | Not determined | No/not stated | No |
| Van Puffelen et al. 2018, Belgium and Canada; early PN (n=670) median age 1.3 yrs (IQR, 0.3-6 yrs) and late PN (n=673) 1.4 yrs (0.2-7 yrs); 58% men | 1343 critically ill children aged 0 (neonates) to 17 years from three large tertiary referral pediatric ICUs | Early initiation of PN (standard care) | Late initiation of PN (standard care) | ICER 61,834aa | -- | Government | Hospital | Hospital period | No/not stated | Yes |
| Yoo et al. 2018, US; -- | **Hypothetical cohort** of ICU patients defined by US literature  10% highest risk subpopulation in ICU based on APACH-IV  20% highest risk subpopulation  30% highest risk subpopulation  40% highest risk subpopulation  50% highest risk subpopulation  60% highest risk subpopulation  70% highest risk subpopulation  80% highest risk subpopulation  90% highest risk subpopulation  100% highest risk subpopulation | Telemedicine (Assumed to connect 7 ICUs at 6 hospitals) | Usual care | 75,236  57,829  56,123  58,894  64,176  70,178  77,367  85,499  94,251  10,4421bb | -- | Healthcare Organization | Health Care | 5 years | 3 | Yes |
| You et al. 2018, China; median age 59 (range 18-83 yrs) | **Hypothetical cohort** of ICU patients defined by literature (Markov Model) | Active carbapenem-resistant Enterobacteriaceae (CRE) surveillance plus nonabsorbable oral antibiotics (test-guided SDD group) | No CRE screening | ICER 564 | -- | Not stated | Health Care | Not determined | 3 | Yes |

a<8 days: no data available; >1 week: ICER not reported.

bMeropenem less costly at -1275 (-265 to 2284) and more effective (0.084, 0.023 to 0.144).

cMean total costs were $6,608 in the control group and $5,616 in the short-stay intensive care unit group; mean difference was $991 (95% CI: 1,920581 to $-212).

dCost per QALY was reported to be 14,487 n (2004) and cost per life year saved 10,107. The article does not provide additional details about n.

eCost of ICU, hospital and subsequent care for pneumatic compression devices $72,470, serial Doppler ultrasound $71,279, and prophylactic insertion of vena cava filter $74,421; expected QALYs 6.9, 6.9, and 6.9, respectively.

fAnnual improvements in mean lifetime QALYs (adjusted for case mix) were slightly greater after 2000; mean incremental QALY was 0.025. Valuing a QALY at $46,042 resulted in a positive incremental net monetary benefit of $1,603.

gMean cost of care was $12,491 for the intervention compared with $8,432 for standard care; difference of $4,060 (95% CI: $-471 to $7,648). Mean total QALY was 0.423 in the intervention as compared to 0.426 in the control group; difference of -0.003 (95%CI: -0.065 to 0.060).

hCost savings 123776; MR-coated catheters returned the highest incremental monetary net benefits of 901 per catheter (62% probability of error in this conclusion).

iIncremental number of QALYs gained was 0.66.

jEven assuming doripenem costs in excess of 594/day (4 times base case) consistenly showed a cost savings in 1000 simulations: 95% credible interval cost savings of 6,062 to 19,611.

kCosts associated with piperacillin/tazobactam was $41,286 versus $39,318 for meropenem use; incremental cost difference $-1,968. Incremental QALY was 0.115.

lThe mean of all Monte Carlo trials suggested that PAC use was both more expensive by $17 and less effective by 0.30 QALY than CVC use.

mUniversal decolonization using chlorhexidine had a far higher probability of being cost effective than any other strategy; at a willingness to pay threshold of $51,327 (£30,000) per QALY, universal decolonization using chlorhexidine had a 70% chance of being the most cost effective strategy.

nAll RRT-treated patients gained 0.10 QALYs/patient and hospital survivors 2.54 QALYs in 5 years; CU ratio poor with 5-year median 363,883 (39,972 to 2,922,675/QALY).

oCost effectiveness of bundle was less than 8276 per QALY gained for all simulation results; base case results show that for every 100 patients CVC care bundle cohort has 0.8 fewer catheter related BSI and 0.3 fewer in ICU deaths which led to increased survival of 3.6 years and 2.7 QALYS.

pIncremental cost difference between groups was 2,854,681 favoring dalteparin; mean cost difference -1,534 (p=0.53).

qFavorability scenario was based on observational data suggesting small but consistent improvement in functional outcomes in survivors from neuro-ICUs; functional outcome assessed using the mRS score.

rCooling blankets were least costly and associated with 1.75 QALYs; conventional care and VV-ECMO were dominated by cooling blankets.

sMedian costs per patient were 1,617 (829 to 3,495) in the citrate group and 969 (487 to 1,611) in the heparin group for the complete CRRT course.

tCost savings of $315 to $886 with assumptions made that the use of the central line maintenance kit reduced the incidence of central line infections by 100% and 50%; 0.05 and 0.13 more quality-adjusted life-years; incremental LYs: 0.15 for 100% and 0.06 for 50%.

uUsing conservative utility estimate of 0.7.

vCost savings of $408; increase in QALY of 0.0008 per patient.

wCost for ICU admission as compared to medical ward was 105 to 2,628$ per QALY saved.

xMean total QALYs/patient were 0.207 (95% CI: 0.158 to 0.256) in group allocated to receive fresh blood and 0.213 (95% CI 0.170 to 0.257) in group assigned to standard-age blood.

yOne-time PVI solution avoids 22.55 CRBSI/1000 patients and saves 1041 per patient.

zSavings estimated at 2,223/patients calculated from mean estimate of LOS of 1.5 days; 20 patients per month would save 533,520/year.

aaMean cost difference -9,663 (-17,388 to -2530).

bbTele-ICU’s incremental cost estimates were $2,361 for the 10% highest risk subpopulation, $521 for the 70% highest risk subpopulation, and $527 when tele-ICU was applied to the entire ICU population.

**Supplemental Table 4a. Quality of included studies of interventions in severe sepsis**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Manns et al. 2002 | Fowler et al. 2003 | Angus et al. 2003 | Betancourt et al. 2003 | Neilson et al. 2003 | Davies et al. 2005 | Green et al. 2006 | Franca et al. 2006 | Dhainaut et al. 2007 | Huang et al. 2007 | Talmor et al. 2008 | Karlsson et al. 2009 | Lehmann et al. 2010 | Jones et al. 2011 | Sadique et al. 2011 |
| **Study Design** | | | | | | | | | | | | | | | |
| 1. The research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. The economic importance of the research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. The viewpoint(s) of the analysis are clearly stated and justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4. The rationale for choosing alternative programmes or interventions compared is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5. The alternatives being compared are clearly described. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6. The form of economic evaluation used is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7. The choice of form of economic evaluation is justified in relation to the questions addressed. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Data collection** | | | | | | | | | | | | | | | |
| 8. The source(s) of effectiveness estimates used are stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 9. Details of the design and results of effectiveness study are given (if based on a single study). | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 10. Details of the methods of synthesis or meta-analysis of estimates are given (if based on a synthesis of a number of effectiveness studies). | -- | -- | -- | -- | -- | 1 | 1 | 1 | -- | -- | -- | 1 | -- | 1 | 1 |
| 11. The primary outcome measure(s) for the economic evaluation are clearly stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12. Methods to value benefits are stated. | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 |
| 13. Details of the subjects from whom valuations were obtained were given. | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 1 |
| 14. Productivity changes (if included) are reported separately. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. The relevance of productivity changes to the study question is discussed. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16. Quantities of resource use are reported separately from their unit costs. | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 17. Methods for the estimation of quantities and unit costs are described | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 18. Currency and price data are recorded. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 19. Details of currency of price adjustments for inflation or currency conversion are given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 20. Details of any model used are given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 21. The choice of model used and the key parameters on which it is based are justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| **Analysis and interpretation of results** | | | | | | | | | | | | | | | |
| 22. Time horizon of costs and benefits is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 23. The discount rate(s) is stated. | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 24. The choice of discount rate(s) is justified. | 0 | 0 | 1 | -- | 0 | 0 | 1 | -- | 1 | 1 | 0 | 0 | -- | 1 | 1 |
| 25. An explanation is given if costs and benefits are not discounted. | -- | -- | -- | 0 | -- | -- | -- | 0 | 1 | 1 | -- | 0 | 0 | -- | 1 |
| 26. Details of statistical tests and confidence intervals are given for stochastic data. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 27. The approach to sensitivity analysis is given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 28. The choice of variables for sensitivity analysis is justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 29. The ranges over which the variables are varied are justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 30. Relevant alternatives are compared. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 31. Incremental analysis is reported. | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 32. Major outcomes are presented in a disaggregated as well as aggregated form. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 33. The answer to the study question is given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34. Conclusions follow from the data reported. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35. Conclusions are accompanied by the appropriate caveats. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

0 = no 1 = yes 2 = not clear

**Supplement Table 4b. Quality of included studies of interventions in severe sepsis**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Noritomi et al. 2014 | Harrison et al. 2015 | Mouncey et al. 2015 |
| **Study Design** | | | |
| 1. The research question is stated. | 1 | 1 | 1 |
| 2. The economic importance of the research question is stated. | 1 | 1 | 1 |
| 3. The viewpoint(s) of the analysis are clearly stated and justified. | 1 | 1 | 1 |
| 4. The rationale for choosing alternative programmes or interventions compared is stated. | 1 | 1 | 1 |
| 5. The alternatives being compared are clearly described. | 1 | 1 | 1 |
| 6. The form of economic evaluation used is stated. | 1 | 1 | 1 |
| 7. The choice of form of economic evaluation is justified in relation to the questions addressed. | 1 | 1 | 1 |
| **Data collection** | | | |
| 8. The source(s) of effectiveness estimates used are stated. | 1 | 1 | 1 |
| 9. Details of the design and results of effectiveness study are given (if based on a single study). | 1 | 1 | 1 |
| 10. Details of the methods of synthesis or meta-analysis of estimates are given (if based on a synthesis of a number of effectiveness studies). | -- | -- | -- |
| 11. The primary outcome measure(s) for the economic evaluation are clearly stated. | 1 | 1 | 1 |
| 12. Methods to value benefits are stated. | 0 | 0 | 0 |
| 13. Details of the subjects from whom valuations were obtained were given. | 0 | 0 | 0 |
| 14. Productivity changes (if included) are reported separately. | 0 | 0 | 0 |
| 15. The relevance of productivity changes to the study question is discussed. | -- | -- | -- |
| 16. Quantities of resource use are reported separately from their unit costs. | 0 | 0 | 0 |
| 17. Methods for the estimation of quantities and unit costs are described | 0 | 0 | 0 |
| 18. Currency and price data are recorded. | 1 | 1 | 1 |
| 19. Details of currency of price adjustments for inflation or currency conversion are given. | 1 | 1 | 1 |
| 20. Details of any model used are given. | 1 | 1 | 1 |
| 21. The choice of model used and the key parameters on which it is based are justified. | 1 | 1 | 1 |
| **Analysis and interpretation of results** | | | |
| 22. Time horizon of costs and benefits is stated. | 1 | 1 | 1 |
| 23. The discount rate(s) is stated. | 1 | 0 | 1 |
| 24. The choice of discount rate(s) is justified. | 0 | 0 | 1 |
| 25. An explanation is given if costs and benefits are not discounted. | -- | -- | -- |
| 26. Details of statistical tests and confidence intervals are given for stochastic data. | 1 | 1 | 1 |
| 27. The approach to sensitivity analysis is given. | 0 | 0 | 1 |
| 28. The choice of variables for sensitivity analysis is justified. | 0 | 0 | 1 |
| 29. The ranges over which the variables are varied are justified. | 0 | 0 | 1 |
| 30. Relevant alternatives are compared. | 0 | 0 | 1 |
| 31. Incremental analysis is reported. | 1 | 1 | 1 |
| 32. Major outcomes are presented in a disaggregated as well as aggregated form. | 1 | 1 | 1 |
| 33. The answer to the study question is given. | 1 | 1 | 1 |
| 34. Conclusions follow from the data reported. | 1 | 1 | 1 |
| 35. Conclusions are accompanied by the appropriate caveats. | 1 | 1 | 1 |

0 = no 1 = yes 2 = not clear

**Supplemental Table 5. Quality of included studies of interventions in respiratory intensive care**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Wachteret al. 1995 | Añón et al. 1999 | Hamel et al. 2000 | Mayer et al. 2000 | Hamel et al. 2001 | Cox et al. 2007 | Cooke et al. 2009 | Peek et al. 2009 | Malmivaara et al. 2009 | Linko et al. 2010 | Hung et al. 2012 | Park et al. 2014 | Siddiqui et al. 2015 | Herritt et al. 2018 | Saunders et al. 2018 | Turner and Jenks 2018 |
| **Study Design** | | | | | | | | | | | |  |  |  |  |  |
| 1. The research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. The economic importance of the research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. The viewpoint(s) of the analysis are clearly stated and justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4. The rationale for choosing alternative programmes or interventions compared is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5. The alternatives being compared are clearly described. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6. The form of economic evaluation used is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7. The choice of form of economic evaluation is justified in relation to the questions addressed. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Data collection** | | | | | | | | | | | |  |  |  |  |  |
| 8. The source(s) of effectiveness estimates used are stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9. Details of the design and results of effectiveness study are given (if based on a single study). | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 10. Details of the methods of synthesis or meta-analysis of estimates are given (if based on a synthesis of a number of effectiveness studies). | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1 |
| 11. The primary outcome measure(s) for the economic evaluation are clearly stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12. Methods to value benefits are stated. | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 13. Details of the subjects from whom valuations were obtained were given. | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| 14. Productivity changes (if included) are reported separately. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. The relevance of productivity changes to the study question is discussed. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16. Quantities of resource use are reported separately from their unit costs. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| 17. Methods for the estimation of quantities and unit costs are described | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| 18. Currency and price data are recorded. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 19. Details of currency of price adjustments for inflation or currency conversion are given. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 20. Details of any model used are given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 21. The choice of model used and the key parameters on which it is based are justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Analysis and interpretation of results** | | | | | | | | | | | |  |  |  |  |  |
| 22. Time horizon of costs and benefits is stated. | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 |
| 23. The discount rate(s) is stated. | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 24. The choice of discount rate(s) is justified. | -- | -- | 0 | 1 | 0 | 1 | 1 | 1 | -- | -- | -- | 0 | -- | -- | 0 | 0 |
| 25. An explanation is given if costs and benefits are not discounted. | 0 | 0 | -- | -- | -- | -- | -- | -- | 0 | 0 | 0 | -- | 0 | 0 | 0 | -- |
| 26. Details of statistical tests and confidence intervals are given for stochastic data. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 27. The approach to sensitivity analysis is given. | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 28. The choice of variables for sensitivity analysis is justified. | -- | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -- | -- | 1 | 0 | -- | 1 | 1 | 1 |
| 29. The ranges over which the variables are varied and justified. | -- | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -- | -- | 1 | -- | -- | 0 | 0 | 0 |
| 30. Relevant alternatives are compared. | -- | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -- | -- | 1 | -- | -- | 1 | 1 | 1 |
| 31. Incremental analysis is reported. | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 32. Major outcomes are presented in a disaggregated as well as aggregated form. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 33. The answer to the study question is given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34. Conclusions follow from the data reported. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35. Conclusions are accompanied by the appropriate caveats. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

0 = no 1 = yes 2 = not clear

**Supplemental Table 6a. Quality of included studies of interventions in general intensive care**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fenton-Lee et al. 1993 | Schapira et al. 1993 | Smith et al. 1994 | Kerridge et al. 1995 | Hamel et al. 1997 | Heyland et al. 1998 | Sznajder et al. 2001 | Hamel et al. 2002 | Paniagua et al. 2002 | Marciante et al. 2003 | Shorr et al. 2004 | Grau et al. 2005 | MacLaren et al. 2005 | Graf et al. 2005 | Stevens et al. 2005 | Edwards et al. 2006 | van Mastrigt et al. 2006 |
| **Study Design** | | | | | | | | | | | | | | | | | |
| 1. The research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. The economic importance of the research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. The viewpoint(s) of the analysis are clearly stated and justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4. The rationale for choosing alternative programmes or interventions compared is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5. The alternatives being compared are clearly described. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6. The form of economic evaluation used is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7. The choice of form of economic evaluation is justified in relation to the questions addressed. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Data collection** | | | | | | | | | | | | | | | | | |
| 8. The source(s) of effectiveness estimates used are stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9. Details of the design and results of effectiveness study are given (if based on a single study). | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10. Details of the methods of synthesis or meta-analysis of estimates are given (if based on a synthesis of a number of effectiveness studies). | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11. The primary outcome measure(s) for the economic evaluation are clearly stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12. Methods to value benefits are stated. | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 13. Details of the subjects from whom valuations were obtained were given. | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14. Productivity changes (if included) are reported separately. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. The relevance of productivity changes to the study question is discussed. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16. Quantities of resource use are reported separately from their unit costs. | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 17. Methods for the estimation of quantities and unit costs are described. | 2 | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 1 | 2 | 0 | 0 | 0 |
| 18. Currency and price data are recorded. | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 19. Details of currency of price adjustments for inflation or currency conversion are given. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20. Details of any model used are given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 21. The choice of model used and the key parameters on which it is based are justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Analysis and interpretation of results** | | | | | | | | | | | | | | | | | |
| 22. Time horizon of costs and benefits is stated. | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 23. The discount rate(s) is stated. | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |
| 24. The choice of discount rate(s) is justified. | 0 | 0 | 0 | 0 | -- | -- | 0 | 0 | -- | 0 | 0 | 0 | 0 | 1 | 0 | 1 | -- |
| 25. An explanation is given if costs and benefits are not discounted. | -- | 0 | -- | -- | 0 | 0 | -- | -- | 0 | 0 | 0 | -- | -- | -- | -- | -- | 0 |
| 26. Details of statistical tests and confidence intervals are given for stochastic data. | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 |
| 27. The approach to sensitivity analysis is given. | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 28. The choice of variables for sensitivity analysis is justified. | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 29. The ranges over which the variables are varied and justified. | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 30. Relevant alternatives are compared. | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 31. Incremental analysis is reported. | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| 32. Major outcomes are presented in a disaggregated as well as aggregated form. | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 33. The answer to the study question is given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34. Conclusions follow from the data reported. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35. Conclusions are accompanied by the appropriate caveats. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

0 = no 1 = yes 2 = not clear

**Supplemental Table 6b. Quality of included studies of interventions in general intensive care**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Ridley et al. 2007 | Desai et al. 2008 | Graf et al. 2008 | Brown et al. 2009 | Chiasson et al. 2009 | Merchant et al. 2009 | Zilberberg et al. 2009 | Hutchings et al. 2009 | Cuthbertson et al. 2009 | Halton et al. 2009 | Zilberberg et al. 2009 | Kantola et al. 2010 | McGarry et al. 2010 | van Eerd et al. 2010 | Edwards et al. 2011 | Clermont et al. 2011 | Sud et al. 2011 | | Robotham et al. 2011 |
| **Study Design** | | | | | | | | | | | | | | | | | | | |
| 1. The research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 2. The economic importance of the research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 3. The viewpoint(s) of the analysis are clearly stated and justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 4. The rationale for choosing alternative programmes or interventions compared is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 5. The alternatives being compared are clearly described. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 6. The form of economic evaluation used is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 7. The choice of form of economic evaluation is justified in relation to the questions addressed. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| **Data Collection** | | | | | | | | | | | | | | | | | | | |
| 8. The source(s) of effectiveness estimates used are stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 9. Details of the design and results of effectiveness study are given (if based on a single study). | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | | 1 | 1 |
| 10. Details of the methods of synthesis or meta-analysis of estimates are given (if based on a synthesis of a number of effectiveness studies). | 1 | 1 | -- | -- | -- | -- | -- | -- | -- | 1 | 1 | 0 | 1 | -- | -- | -- | | -- | -- |
| 11. The primary outcome measure(s) for the economic evaluation are clearly stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 12. Methods to value benefits are stated. | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | | 0 | 1 |
| 13. Details of the subjects from whom valuations were obtained were given. | 1 | 1 | 1 | -- | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | | 0 | 0 |
| 14. Productivity changes (if included) are reported separately. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |
| 15. The relevance of productivity changes to the study question is discussed. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | -- | -- |
| 16. Quantities of resource use are reported separately from their unit costs. | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | | 1 | 0 |
| 17. Methods for the estimation of quantities and unit costs are described | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | | 1 | 0 |
| 18. Currency and price data are recorded. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | | 1 | 0 |
| 19. Details of currency of price adjustments for inflation or currency conversion are given. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |
| 20. Details of any model used are given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 21. The choice of model used and the key parameters on which it is based are justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| **Analysis and interpretation of results** | | | | | | | | | | | | | | | | | | | |
| 22. Time horizon of costs and benefits is stated. | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | | 1 | 1 |
| 23. The discount rate(s) is stated. | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | | 1 | 1 |
| 24. The choice of discount rate(s) is justified. | -- | 0 | 0 | 0 | 0 | -- | 1 | 0 | 0 | 1 | 1 | 1 | -- | 1 | 1 | 1 | | 0 | 0 |
| 25. An explanation is given if costs and benefits are not discounted. | 0 | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- | -- | 0 | -- | -- | -- | | -- | -- |
| 26. Details of statistical tests and confidence intervals are given for stochastic data. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | | 1 | 1 |
| 27. The approach to sensitivity analysis is given. | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | | 1 | 1 |
| 28. The choice of variables for sensitivity analysis is justified. | -- | 1 | 1 | 1 | 1 | -- | 1 | 1 | 1 | 1 | -- | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 29. The ranges over which the variables are varied and justified. | -- | 1 | 1 | 1 | 1 | -- | 1 | 1 | 1 | 1 | -- | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 30. Relevant alternatives are compared. | -- | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -- | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 31. Incremental analysis is reported. | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | | 1 | 1 |
| 32. Major outcomes are presented in a disaggregated as well as aggregated form. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 33. The answer to the study question is given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 34. Conclusions follow from the data reported. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| 35. Conclusions are accompanied by the appropriate caveats. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |

0 = no 1 = yes 2 = not clear

**Supplemental Table 6c. Quality of included studies of interventions in general intensive care**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Chui et al. 2012 | De Smed et al. 2012 | Laukkanen et al. 2013 | Alali et al. 2014 | Cooper et al. 2014 | Fowler et al. 2014 | Malhotra et al. 2014 | Dick et al. 2015 | Ethegen et al. 2015 | Fletcher et al. 2015 | Gajarski et al. 2015 | Hafner et al. 2015 | Nelson et al. 2015 | Petrie et al. 2015 | Rosenthal et al. 2015 |
| **Study Design** | | | | | | | | | | | | | | | |
| 1. The research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. The economic importance of the research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. The viewpoint(s) of the analysis are clearly stated and justified. | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 2 | 1 |
| 4. The rationale for choosing alternative programmes or interventions compared is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5. The alternatives being compared are clearly described. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6. The form of economic evaluation used is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7. The choice of form of economic evaluation is justified in relation to the questions addressed. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Data collection** | | | | | | | | | | | | | | | |
| 8. The source(s) of effectiveness estimates used are stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9. Details of the design and results of effectiveness study are given (if based on a single study). | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 10. Details of the methods of synthesis or meta-analysis of estimates are given (if based on a synthesis of a number of effectiveness studies). | -- | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 11. The primary outcome measure(s) for the economic evaluation are clearly stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12. Methods to value benefits are stated. | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 13. Details of the subjects from whom valuations were obtained were given. | -- | 1 | 1 | -- | -- | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 14. Productivity changes (if included) are reported separately. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. The relevance of productivity changes to the study question is discussed. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16. Quantities of resource use are reported separately from their unit costs. | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 17. Methods for the estimation of quantities and unit costs are described | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 18. Currency and price data are recorded. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 19. Details of currency of price adjustments for inflation or currency conversion are given. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20. Details of any model used are given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 21. The choice of model used and the key parameters on which it is based are justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Analysis and interpretation of results** | | | | | | | | | | | | | | | |
| 22. Time horizon of costs and benefits is stated. | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| 23. The discount rate(s) is stated. | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| 24. The choice of discount rate(s) is justified. | 1 | 0 | 0 | 0 | -- | -- | 1 | 0 | 0 | 0 | 0 | -- | 0 | -- | 0 |
| 25. An explanation is given if costs and benefits are not discounted. | 0 | -- | -- | -- | 0 | 0 | -- | -- | -- | -- | -- | 0 | -- | 0 | -- |
| 26. Details of statistical tests and confidence intervals are given for stochastic data. | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| 27. The approach to sensitivity analysis is given. | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | -- | 1 | -- | 0 |
| 28. The choice of variables for sensitivity analysis is justified. | 1 | 1 | 1 | 1 | -- | -- | 1 | 1 | 0 | 1 | 1 | -- | 1 | -- | -- |
| 29. The ranges over which the variables are varied and justified. | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | -- |
| 30. Relevant alternatives are compared. | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | -- |
| 31. Incremental analysis is reported. | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 32. Major outcomes are presented in a disaggregated as well as aggregated form. | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 33. The answer to the study question is given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34. Conclusions follow from the data reported. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35. Conclusions are accompanied by the appropriate caveats. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

0 = no 1 = yes 2 = not clear

**Supplemental Table 6d. Quality of included studies of interventions in general intensive care**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | St.Onge et al. 2015 | Ethgen et al. 2015 | Cubro et al. 2016 | Grieve et al. 2016 | Yoo et al. 2016 | Kardas-Sloma et al. 2017 | Lindemark et al. 2017 | Ridyard et al. 2017 | Walsh et al. 2017 | Maunoury et al. 2018 | McKinnell et al. 2018 | Osorio et al. 2018 | Van Puffelen et al. 2018 | Yoo et al. 2018 | You et al. 2018 |
| **Study Design** | | | | | | | | | | | | | | | |
| 1. The research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. The economic importance of the research question is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. The viewpoint(s) of the analysis are clearly stated and justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4. The rationale for choosing alternative programmes or interventions compared is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5. The alternatives being compared are clearly described. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6. The form of economic evaluation used is stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7. The choice of form of economic evaluation is justified in relation to the questions addressed. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Data Collection** | | | | | | | | | | | | | | | |
| 8. The source(s) of effectiveness estimates used are stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9. Details of the design and results of effectiveness study are given (if based on a single study). | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -- |
| 10. Details of the methods of synthesis or meta-analysis of estimates are given (if based on a synthesis of a number of effectiveness studies). | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 11. The primary outcome measure(s) for the economic evaluation are clearly stated. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12. Methods to value benefits are stated. | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 13. Details of the subjects from whom valuations were obtained were given. | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 14. Productivity changes (if included) are reported separately. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. The relevance of productivity changes to the study question is discussed. | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16. Quantities of resource use are reported separately from their unit costs. | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 17. Methods for the estimation of quantities and unit costs are described | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| 18. Currency and price data are recorded. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 19. Details of currency of price adjustments for inflation or currency conversion are given. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 20. Details of any model used are given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 21. The choice of model used and the key parameters on which it is based are justified. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Analysis and interpretation of results** | | | | | | | | | | | | | | | |
| 22. Time horizon of costs and benefits is stated. | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 23. The discount rate(s) is stated. | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | -- | 1 | 0 | 1 | 1 |
| 24. The choice of discount rate(s) is justified. | -- | 0 | 1 | 0 | 0 | -- | 1 | -- | -- | -- | -- | 0 | -- | 0 | 0 |
| 25. An explanation is given if costs and benefits are not discounted. | -- | -- | -- | -- | -- | 0 | -- | 0 | 0 | 0 | 0 | -- | 0 | -- | -- |
| 26. Details of statistical tests and confidence intervals are given for stochastic data. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 27. The approach to sensitivity analysis is given. | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 28. The choice of variables for sensitivity analysis is justified. | -- | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -- | 1 |
| 29. The ranges over which the variables are varied and justified. | -- | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | -- | 0 |
| 30. Relevant alternatives are compared. | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | -- | 1 |
| 31. Incremental analysis is reported. | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| 32. Major outcomes are presented in a disaggregated as well as aggregated form. | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |
| 33. The answer to the study question is given. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34. Conclusions follow from the data reported. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35. Conclusions are accompanied by the appropriate caveats. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

0 = no 1 = yes 2 = not clear