



SIGN

**Considered judgement on quality of evidence****Key questions:**

1. **Is a pneumonia-specific score better than generic scores (Standardised Early Warning Score or sepsis severity)?**
2. **Is CURB65 as reliable as the Pneumonia Severity Index?**
3. **Is CRB65 as reliable as CURB65?**

**1. Volume of evidence**

*Comment here on any issues concerning the quantity of evidence available on this topic and its methodological quality.*

**Key Question 1: Disease specific versus generic sepsis:**

3 prospective cohort studies with 1836 patients from 7 hospitals in Scotland (Barlow), Spain (Ewig) and USA (Dremsizov)

**Key Question 2: CURB65 versus PSI**

3 prospective cohort studies (one, Aujesky with patients from a cluster randomised trial) with 5439 patients from 34 hospitals in Australia (Busing), Spain (Capelastegui) and USA.

One study (Aujesky) had incomplete data and also excluded 20% of patients presenting with CAP.

Two additional studies (Ewig and Loachimescu) compared CURB with PSI. We have not included these two studies in our judgement.

**Key Question 3: CRB65 versus CURB65**

3 prospective cohort studies with 3263 patients from 7 hospitals in Scotland (Barlow), Spain (Capelastegui) and the UK, Netherlands and New Zealand (Lim).

In addition one study from Germany (Bauer) compared CRB with CURB. We have not included this study in our judgement.

For 2010 update, 6 additional studies were reviewed – 3 were retrospective and 3 prospective studies. One study by Cabre (Spain) on functional risk status as risk factor for mortality in elderly patients with CAP provided no new evidence.

One study provided evidence for question 1: Challen (UK) showed that a modified EWS which included a physiological social score could be used for triage and was superior to CURB65 for informing decisions about admission/discharge and level of hospital care required.

Three studies provided evidence for question 2: Feldman (multicentre) found that both CURB65 and PSI were poor for predicting the need for ITU care in patients with pneumococcal bacteraemia. However this is relevant to only a small subset of all patients admitted with CAP (approx. 10%).

Phua (Singapore) reported that CURB65 is less sensitive but more specific than PSI at predicting in-hospital mortality and that CURB65 is poorer than PSI at predicting the need for ITU admission. CRB65 was also poor.

Schmetz (Switzerland) showed that only PSI, not CURB65 or CRB65, can identify patients with a mortality risk of <1% and this may be useful in identifying low risk patients suitable for discharge.

One study reported additional evidence for question 3: Capelastegui (Spain) reported that CURB, CURB65 and CRB65 all performed well within a prognostic index for CAP 90 day mortality.

**2. Applicability**

*Comment here on the extent to which the evidence is directly applicable to the NHS in Scotland.*

The evidence is directly applicable to the NHS in Scotland

**3. Generalisability**

*Comment here on how reasonable it is to generalise from the results of the studies used as evidence to the target population for this guideline.*

Patients were adults recruited from Accident and Emergency Department or Acute Medical Admissions Units in acute hospitals and can be generalised to Scottish populations.

**4. Consistency**

*Comment here on the degree of consistency demonstrated by the available of evidence. Where there are conflicting results, indicate how the group formed a judgement as to the overall direction of the evidence*

**Disease specific versus generic:**

All studies showed that, in comparison with generic scores, pneumonia specific scores had better sensitivity, specificity, positive predictive value and negative predictive values.

**CURB65 versus PSI**

The evidence suggests that the two scores have similar accuracy for stratification of risk and that any differences between them are unlikely to be clinically important. Our review of evidence about discharge of low risk patients from hospital suggests that neither score is sufficiently reliable to be used alone. Consequently the main clinical value of both scores is in identification of high risk patients and the evidence shows similar accuracy.

**CRB65 versus CURB65**

In comparison with CURB65, CRB65 classifies a higher proportion of patients as intermediate severity. The evidence suggests that outcomes for patients classified as low risk or high risk by CURB65 and CRB65 are similar.

**5. Clinical impact**

*Comment here on the potential clinical impact that the intervention in question might have – e.g. size of patient population; magnitude of effect; relative benefit over other management options; resource implications; balance of risk and benefit.*

Pneumonia is one of the commonest causes of acute medical admission to hospital and has a high mortality, especially in patients with severe pneumonia. The CURB65 and CRB65 scores use readily available data, in particular the CRB65 score requires no laboratory data. The CURB65 and CRB65 scores are easy to calculate.

**Key Question 1: Is a pneumonia-specific score better than generic scores?**

Hospitals in Scotland now routinely calculate SEWS (Standardised Early Warning Score) from vital signs in acutely ill patients. Many also have protocols for management of sepsis that include definition of severe sepsis. It is therefore important to have evidence that, in comparison with these generic scores CURB65 has additional predictive value for triage of patients with CAP. This evidence shows that calculation of the CURB65 (or CRB65) score is a key step in the management and risk assessment of patients with CAP.

**Key Question 2: Is CURB65 as reliable as the Pneumonia Severity Index?**

The evidence shows that CURB65 performs as well as the much more complex PSI, which requires more laboratory data and is harder to calculate.

**Key Question 3: Is CRB65 as reliable as CURB65?**

The comparisons of CURB65 with CRB65 are important because CRB65 does not require any laboratory test and can be used in any setting, including primary care out of hours. However, the results of these comparisons show that the CRB65 score has more limited value as a decision support tool because it classifies <50% of patients as low or high risk. It would be valuable to have more information that compared the performance of the CURB and CRB scores in patients aged 65 or more.

**6. Other factors**

*Indicate here any other factors that you took into account when assessing the evidence base.*

None

**7. Evidence statement**

*Please summarise the development group's synthesis of the*

**Evidence level**

<p><i>evidence relating to this key question, taking all the above factors into account, and indicate the evidence level which applies.</i></p>	
<ol style="list-style-type: none"> <li>1. CURB65 is superior to both the SEWS score and generic sepsis score for risk assessment of patients with CAP.</li> <li>2. CURB65 is equivalent to the more complex Pneumonia Severity Index for risk assessment of patients with CAP.</li> <li>3. CRB65 can be used for risk assessment when results of blood urea are unavailable but will classify &lt;50% of patients as low or high risk.</li> </ol>	<p>2<sup>++</sup> for all three key questions</p>
<p><b>8. Recommendation</b>  <i>What recommendation(s) does the guideline development group draw from this evidence? Please indicate the grade of recommendation(s) and any dissenting opinion within the group.</i></p>	<p><b>Grade of recommendation</b></p>
<p>The CURB65 score should be used for risk assessment of all patients diagnosed with CAP. CRB65 should be used for preliminary assessment of patients, before results of blood urea are available.</p> <p><b>Completion of the CURB65 score within 4h of arrival at hospital should be part of the care bundle for patients presenting to hospital with CAP.</b></p>	<p><b>B</b></p>