Appendix A

Appendix A. Clinical Scales

This appendix briefly describes the various scales used in the articles reviewed in this evidence report. The materials are presented by evidence table in alphabetical order by author.

Evidence Table 1:

Kristjansson et al., 1993[52]

A **clinical scoring system** was used to evaluate infants and toddlers on admission and a score of 4 or more on a scale of 0 to 10 was required for eligibility as a study participant. A score of 0 was given for respiratory rate < 40 breaths/min; no respiratory chest recessions; vesicular auscultatory breath sounds; normal skin color; and general condition not affected. A score of 1 was given for respiratory rate of 40 to 60 breaths/min; moderate costodiaphragmatic respiratory chest recessions; wheeze+rales/ronchi auscultatory breath sounds; pallor of skin color; and general condition moderately affected. A score of 2 was given for respiratory rate > 60 breaths/min; moderate costodiaphragmatic respiratory chest recessions with rib and jugular retractions; faint with or without severe wheeze with or without pronounced rales and ronchi auscultatory breath sounds; cyanosis; and general condition severely affected. The **symptom score** consisted of the sum of each of the scores for respiratory rate, respiratory chest recessions, auscultatory breath sounds, skin color, and general condition.

Evidence Table 2:

Lowell et al, 1987[110]

A **clinical scoring system** consisted of scores for wheezing and retractions using the Respiratory Distress Assessment Instrument developed specifically for the study. Wheezing and retractions were each scored on a scale of 0 to 3. The maximum total points for wheezing are 8 and for retractions are 9. A wheezing score of 0 was given for no wheezing at expiration, no wheezing at inspiration and no wheezing in specific location. A wheezing score of 1 was given for wheezing at end expiration, at part of inspiration, and segmental (= 2 of 4 lung fields) in location. A wheezing score of 2 was given for wheezing at one-half expiration, at all of inspiration, and diffuse (> 3 of 4 lung fields) in location. A wheezing score of 3 was given for wheezing during three-quarters of expiration, and a wheezing score of 4 was given for wheezing during all of expiration. A retraction score of 0 was given for no supraclavicular, intercostal, or subcostal retractions. A retraction score of 1 was given for mild supraclavicular, intercostal, or subcostal retractions. A retraction score of 2 was given for moderate supraclavicular, intercostal, or subcostal retractions. A retraction score of 3 was given for marked supraclavicular, intercostal, or subcostal retractions. A total score combined the wheezing and retraction scores. The **respiratory score** was obtained by summing the wheezing and retraction subscores. The **overall respiratory assessment change score (RACS)** was calculated as the sum of change scores in each of the variables. Improvement was defined as an RACS of = 4 units in the positive direction, while a RACS < 4 was defined as no improvement.

Evidence Table 3:

Bertrand et al., 2001[53]

The **clinical scoring system** includes respiratory rate modified for age, wheezing, use of accessory muscles, and presence of cyanosis modified by measuring oxygen concentration needed to keep oxygen saturation at 94 percent to 97 percent. This scoring system was adapted from Bierman and Pierson as modified by Tal et al. A score of 0 was given for respiratory rate (breaths/min) < 40 if < 6 months or < 30 if > 6 months; no wheezing; no retractions; and no oxygen requirement. A score of 1 was given for respiratory rate (breaths/min) of 40 to 55 if < 6 months or of 30 to 45 if > 6 months; end expiratory wheezing; + retractions; and 21 percent to 28 percent oxygen supply. A score of 2 was given for respiratory rate (breaths/min) of 56 to 70 if < 6 months or of 46 to 60 if > 6 months; inspiratory and expiratory wheezing with stethoscope; ++ retractions; and of 29 to 35 percent oxygen supply. A score of 3 was given for respiratory rate (breaths/min) > 70 if < 6 months or > 60 if > 6 months; audible inspiratory and expiratory wheezing; +++ retractions; and > 35 percent oxygen supply.

Menon et al., 1995[22]

A **Respiratory Distress Assessment Instrument score** = 4 was an eligibility requirement for entry into this study. The RDAI uses an ordinal scale from 0 to 17 and measures expiratory wheezing (0 to 4 points), inspiratory wheezing (0 to 2 points), location of wheeze (0 to 2 points), supraclavicular indrawing (0 to 3 points), and subcostal indrawing (0 to 3 points.) No further details are given regarding scoring criteria.

Reijonen, 1995[54]

The **RDAI score** is based on wheezing and retractions. This scoring system comes from Lowell, et al.[110] Wheezing and retractions were each scored on a scale of 0 to 3. The maximum total points for wheezing are 8 and for retractions are 9. A wheezing score of 0 was given for no wheezing at expiration, no wheezing at inspiration, and no wheezing in specific location. A wheezing score of 1 was given for wheezing at end expiration, at part of inspiration, and segmental (= 2 of 4 lung fields) in location. A wheezing score of 2 was given for wheezing at one-half expiration, at all of inspiration, and diffuse (>3 of 4 lung fields) in location. A wheezing score of 3 was given for wheezing during three-quarters of expiration, and a wheezing score of 4 was given for wheezing during all of expiration. A retraction score of 0 was given for no supraclavicular, intercostal, or subcostal retractions. A retraction score of 1 was given for mild supraclavicular, intercostal, or subcostal retractions. A retraction score of 2 was given for moderate supraclavicular, intercostal, or subcostal retractions. A retraction score of 3 was given for marked supraclavicular, intercostal, or subcostal retractions. A total score combined the wheezing and retraction scores. The RDAI score was obtained by summing the wheezing and retraction subscores. The **overall respiratory assessment change score (RACS)** was calculated by subtracting the RDAI scores assessed before and after treatment and by summing the change unit with respiratory rate.

Sanchez et al., 1993[55]

A **clinical score** assessed respiratory rate, wheezing, cyanosis, and accessory muscle use. The maximum possible score was 12, which indicated severe disease. No further details were provided about the scoring system.

Evidence Table 4:

Can et al., 1998[24]

A **respiratory distress score (RDS)** incorporates respiratory rate, cyanosis, wheezing, and retractions. A score of 0 was given for respiratory rate < 30; no cyanosis; no expiratory, inspiratory, or localized wheezing; and no subcostal, intercostal, or supraclavicular retractions. A score of 1 was given for respiratory rate 31 to 45; circumoral cyanosis on crying only; end expiratory, part inspiratory, localized wheezing; and mild/moderate subcostal, intercostal, or supraclavicular retractions. A score of 2 was given for respiratory rate 46 to 60; circumoral cyanosis at rest; entire expiratory, all inspiratory, or diffuse wheezing; and marked subcostal, intercostal, or supraclavicular retractions. A score of 3 was given for respiratory rate > 60; generalized cyanosis at rest; and audible wheezing without stethoscope. If nasal flaring exists, add 1 to the score.

Cengizlier et al., 1997[58]

A **clinical score** assessed respiratory rate, wheezing, retraction, and general condition on admission and discharge or day 3 if still hospitalized. The difference between the initial and discharge scores were determined as score change for each patient. A score of 0 was given for respiratory rate (breaths/min) = 30; no wheezing; no retraction; and normal general condition. A score of 1 was given for respiratory rate (breaths/min) of 30 to 45; wheezing on terminal expiration or only with stethoscope; and intercostal retraction only. A score of 2 was given for respiratory rate (breaths/min) 46 to 60; wheezing during entire expiration or audible on expiration without stethoscope; and tracheosternal retraction. A score of 3 was given for respiratory rate (breaths/min) > 60; wheezing during inspiration and expiration without stethoscope; severe retraction with nasal flow; and general condition irritable/lethargic, poor feeding.

Dobson et al., 1998[37]

The **clinical score** was adapted from Schuh et al.[44] and assessed general appearance, accessory muscle use, and wheezing. To be eligible for the study, infants had to have an accessory muscle use score = 2 or wheezing score = 2. A score of 0 was given for asleep; no retraction; and no wheezing or crackles. A score of 1 was given for calm, content, happy, and/or interactive; mild retractions; and scattered, end-expiratory wheezes or crackles only. A score of 2 was given for mildly irritable when touched, occasional crying, but able to be consoled; moderate retractions; and moderate wheezing including diffuse expiratory wheezes with or without scattered early inspiratory wheezes. A score of 3 was given for moderately irritable, difficult to console, less interactive; severe retractions; and severe wheezing including diffuse inspiratory and expiratory wheezing. A score of 4 was given for extremely irritable, cannot be comforted, crying throughout examination, or not interactive.

Gadomski et al., 1994[60]

Clinical scoring was performed before and after bronchodilator treatment. Infants were scored on a scale from 0 to 3 on the degree of grunting, nasal flaring, supraclavicular retractions, intercostal retractions, chest indrawing, air entry, air hunger, wheezing, and general appearance. The scoring system used pictoral aids for each category. The final scoring system was modified and included some collapsed categories and some unreliable observations were deleted. No further information is provided.

Gadomski, 1994[59]

The **severity of illness** was graded using a **scoring system** developed specifically for this trial. The following parameters were scored on a scale of 0 to 3: grunting, flaring, supraclavicular and intercostal retractions, air entry, air hunger, respiratory cycle and location of wheeze, and general appearance. The scoring form included pictoral representations of each category to increase reliability. Scores were assigned as follows: grunting (0 = none, 1 = intermittent, 3 = audible and persistent); nasal flaring (0 = none, 1 = minimal or intermittent, 3 = marked persistent); supraclavicular retractions (0 = none, 1 = just visible, 2 = evident, 3 = marked or obvious); intercostal retractions (0 = none, 1 = just visible, 2 = evident, 3 = marked or obvious); air entry (0 = normal, 3 = reduced); air hunger (0 = none, 1 = not anxious, comfortable, 2 = anxious, ill at ease, 3 = apathetic, lethargic); duration of wheeze in respiratory cycle (0 = none, 1 = terminal only, 2 = entire expiratory, 3 = inspiratory and expiratory or minimal air entry); location of wheezes (0 = none, 1 = segmental, < 2 of 4 lung fields, 2 = diffuse, > 3 of 4 lung fields, 3 = audible without stethoscope); and general appearance (0 = content, happy, interactive, 1 = mildly irritable when touched, occasional crying, can be comforted, is interactive, 2 = moderately irritable, intermittently crying, resists comforting, less interactive, 3 = extremely irritable, cannot be comforted, crying throughout examination or not interactive).

Goh et al., 1997[61]

A **severity score** assessed respiratory rate, subcostal retractions, presence of crepitations, presence of wheeze, oxygen requirement, nebulisation, and intravenous infusion. The severity score is equal to the sum of each of the scores for the categories listed above. A score of 0 was given for respiratory rate/min = 30; no subcostal retractions; no crepitations; no wheeze; no oxygen requirement; no nebulisation; and no intravenous infusion. A score of 1 was given for respiratory rate/min of 31 to 40; mild subcostal retractions; presence of crepitations; wheeze with stethoscope; oxygen requirement; nebulisation; and intravenous infusion. A score of 2 was given for respiratory rate/min of 41 to 50; moderate subcostal retractions; and presence of wheeze with quiet breathing. A score of 3 was given for respiratory rate/min of 51 to 60; severe subcostal retractions; and presence of wheeze with use of accessory muscle. A score of 4 was given for respiratory rate/min of > 60; and presence of wheeze with obvious distress.

Hickey et al., 1994[57]

A **clinical scoring system** consisted of scores for wheezing and retractions with each scored on a scale of 0 to 3 with increasing score reflecting increasing distress. The wheezing score was assigned as follows: 0 = absent, 1 = end-expiratory, 2 = pan-expiratory, 3 = audible to naked ear or too tight to wheeze. The retraction score was assigned as follows: 0 = absent, 1 = intercostal only, 2 = supraclavicular, 3 = heaving shoulders or sternocleidomastoid. Mean wheezing and mean retraction scores were reported.

Ho et al., 1991[62]

No scales.

Klassen et al., 1991[21]

The **RDAI** assessed wheezing and retractions. If two different observers assessed the same patient, the mean score was used. The RDAI came from Lowell et al.[110] Wheezing and retractions were each scored on a scale of 0 to 3. The maximum total points for wheezing are 8 and for retractions are 9. A wheezing score of 0 was given for no wheezing at expiration, no wheezing at inspiration and no wheezing in specific location. A wheezing score of 1 was given for wheezing at end expiration, at part of inspiration, and segmental (= 2 of 4 lung fields) in location. A wheezing score of 2 was given for wheezing at one-half expiration, at all of inspiration, and diffuse (> 3 of 4 lung fields) in location. A wheezing score of 3 was given for wheezing during three-quarters of expiration, and a wheezing score of 4 was given for wheezing during all of expiration. A retraction score of 0 was given for no supraclavicular, intercostal, or subcostal retractions. A retraction score of 1 was given for mild supraclavicular, intercostal, or subcostal retractions. A retraction score of 2 was given for moderate supraclavicular, intercostal, or subcostal retractions. A retraction score of 3 was given for marked supraclavicular, intercostal, or subcostal retractions. A total score combined the wheezing and retraction scores.

Schuh et al., 1990[44]

Each child was assessed with an **accessory muscle score** and a **wheeze score.** The accessory muscle score was assigned as follows: 0 = no indrawing, 1 = mild intercostal indrawing, 2 = moderate indrawing with tracheosternal retractions, and 3 = severe retractions with nasal flaring. The wheeze score was assigned as follows: 0 = no wheezing, 1 = end-expiratory wheeze only, 2 = wheeze during entire expiratory with or without inspiratory phase, audible with stethoscope only, 3 = inspiratory and expiratory wheezing audible without stethoscope.

Schweich et al., 1992[56]

A **respiratory score** referenced to Lowell et al.,[110] consisted of two additional scores, the **wheezing score** and the **retraction score.** A wheezing score of 0 was given for no wheezing at expiration, no wheezing at inspiration and no wheezing in specific location. A wheezing score of 1 was given for wheezing at end expiration, at part of inspiration, and segmental (= 2 of 4 lung fields) in location. A wheezing score of 2 was given for wheezing at one-half expiration, at all of inspiration, and diffuse (> 3 of 4 lung fields) in location. A wheezing score of 3 was given for wheezing during three-quarters of expiration, and a wheezing score of 4 was given for wheezing during all of expiration. A retraction score of 0 was given for no supraclavicular, intercostal, or subcostal retractions. A retraction score of 1 was given for mild supraclavicular, intercostal, or subcostal retractions. A retraction score of 2 was given for moderate supraclavicular, intercostal, or subcostal retractions. A retraction score of 3 was given for marked supraclavicular, intercostal, or subcostal retractions. A total score combined the wheezing and retraction scores.

Evidence Table 5:

Chowdhury et al., 1995[63]

The **modified RDAI** was used. The modified RDAI assesses intercostal retractions, wheezing, and respiratory rate. A score of 0 was given for no expiratory, inspiratory, or localized wheezing; no supraclavicular, intercostal, or subcostal retraction; and a respiratory rate of 20 to 25. A score of 1 was given for end expiratory, partial inspiratory, or localized wheezing in < 2 of 4 lung fields; mild supraclavicular, intercostal, or subcostal retraction; and a respiratory rate of 26 to 35. A score of 2 was given for one-half expiratory, all inspiratory, or localized wheezing in < 3 of 4 lung fields; moderate supraclavicular, intercostal, or subcostal retraction; and a respiratory rate of 36 to 45. A score of 3 was given for three-quarters expiratory wheezing; marked supraclavicular, intercostal, or subcostal retraction; and a respiratory rate > 45. A score of 4 was given for all expiratory, inspiratory, or localized wheezing. The maximum total score equals 20 points.

Schuh et al., 1992[64]

Accessory muscle score and **wheezing score** were used. The accessory muscle score was assigned as follows: 0 = no indrawing, 1 = minimal intercostal indrawing, 2 = moderate indrawing with tracheosternal retractions, 3 = severe retractions with nasal flaring. The wheezing score was assigned as follows: 0 = no wheezing and well, 1 = end-expiratory wheeze only, 2 = wheezing during entire expiratory with or without inspiratory phase, 3 = inspiratory and expiratory wheezing audible without stethoscope.

Wang et al., 1992[65]

A **clinical score** assessed four signs, including respiratory rate, wheezing, retractions, and general condition. A score of 0 was given for respiratory rate < 30; no wheezing; no retractions; and normal general condition. A score of 1 was given for respiratory rate of 31 to 45; wheezing at terminal expiration or only with stethoscope; and intercostal retractions only. A score of 2 was given for respiratory rate of 46 to 60; wheezing at entire expiration or audible on expiration without stethoscope; and tracheosternal retractions. A score of 3 was given for respiratory rate > 60; wheezing at inspiration and expiration without stethoscope; severe retractions with nasal flaring; and general condition irritable, lethargic, and with poor feeding.

Evidence Table 6:

Berger, 1998[70]

The clinical scoring system included a **total score, accessory muscle score,** and **wheezing score.** The total score was on a scale of 0 to 9, while both the accessory muscle score and the wheezing score were on a scale of 0 to 3. A score of 0 was given for no retractions; no wheezing; and a respiratory rate/min < 40. A score of 1 was given for mild retractions; end expiratory wheezing; and a respiratory rate of 40 to 50. A score of 2 was given for moderate retractions; expiratory and inspiratory wheezing including tracheo-sternal; and a respiratory rate of 50 to 60. A score of 3 was given for severe retractions including nasal flaring; expiratory and inspiratory wheezing heard without a stethoscope or “silent chest”; and a respiratory rate/min > 60.

Daugbjerg et al., 1993[72]

Wheezing, use of accessory respiratory muscles, prolonged expiration and general condition were scored on a scale of 0 to 3. No further details are given regarding scoring system. A sum of **symptom score** is reported which represents the mean sum of scoring for wheezing, accessory respiratory muscle use, prolonged expiration and general condition from day 1 until discharge or day 5, whichever came first.

Goebel et al., 2000[66]

A **bronchiolitis score** was determined using a modification of the scoring system described by Tal et al.[112] A score was assigned for each of the following categories: respiratory rate/min, flaring or retractions, oxygen saturation (percentage in room air), and wheezing. The subscores for each of the categories were summed to create the bronchiolitis score. A subscore of 0 was given for respiratory rate/min of = 30; no flaring or retractions; oxygen saturation = 95 percent; and no wheezing. A subscore of 1 was given for respiratory rate/min 31-45; mild flaring or retractions; oxygen saturation 90 to 94 percent; and end-expiratory wheezing audible only by stethoscope. A subscore of 2 was given for respiratory rate/min 46 to 60; moderate flaring or retractions; oxygen saturation 85 to 89 percent; and full expiratory wheezing audible only by stethoscope. A subscore of 3 was given for respiratory rate/min > 60; severe flaring or retractions; oxygen saturation < 85 percent; and wheezing audible without stethoscope or markedly decreased air exchange on auscultation.

Klassen et al., 1997[69]

The **Respiratory Distress Assessment Instrument (RDAI)** is an ordinal scale from 0 to 17 that measures expiratory wheezing, inspiratory wheezing, location of wheeze, and supraclavicular, intercostal, and subcostal indrawing. Points were assigned as follows: expiratory wheezing(0 = none, 1 = end of expiratory phase, 2 = half of expiratory phase, 3 = three fourths of expiratory phase, 4 = all of expiratory phase); inspiratory wheezing (0 = none, 1 = part of inspiratory phase, 2 = all of inspiratory phase); location of wheeze (0 = none, 1 = fewer than two of four lung fields, 2 = fewer than three of four lung fields); and supraclavicular, intercostal, and subcostal indrawing (0 = none, 1 = mild, 2 = moderate, 3 = marked).

Schuh et al., 2002[23]

The **Respiratory Assessment Change Score (RACS)** assesses changes in the retractions and wheezing as measured by changes in the **Respiratory Disease Assessment Instrument (RDAI)** and change in respiratory rate. The RDAI assigns a maximum of 8 points for wheezing and 9 points for retractions and the scores vary depending on the location and severity of the wheezing and retractions. Changes in RDAI were determined by subtracting scores from later readings from scores of earlier reading. The overall RACS was calculated as the arithmetic sum of the RDAI change and of the standardized respiratory rate change. A decrease in RACS shows improvement; an increase shows deterioration.

Van Woensel et al., 1997[68]

A **symptom score** evaluated the following symptoms: respiratory rate, presence of wheezing, presence of cyanosis, and the use of accessory respiratory muscles. Each symptom was scored on an ordinal scale from 0 (normal or none) to 3 (severe). The symptom score ranged from 0 (no symptoms) to 12 (severe bronchiolitis). No other details were provided.

Van Woensel et al., 2000[67]

A **severity score** of acute infection of = 6 defined severe bronchiolitis. Other than defining the range of 0 to 12 for the severity score, no other details were provided.

Evidence Table 7:

De Boeck et al., 1997[48]

The **clinical score** devised by Tal et al.[113] was modified by substituting the assessment of cyanosis by the oxygen saturation measurement as follows: 0 = = 95 percent, 1 = 90 to 95 percent, 2 = < 90 percent, and 3 = < 85 percent. No further details were provided in this article.

Roosevelt et al., 1996[43]

A **clinical score** consists of individual scores for accessory muscle use and wheezing. For the **accessory muscle score** 0 = no intercostal indrawing, 1 = mild intercostal indrawing, 2 = moderate indrawing with tracheosternal retractions, and 3 = severe retractions with nasal flaring. For the **wheezing score**, 0 = no wheezing, 1 = end-expiratory wheezing only, 2 = wheezing during entire expiratory phase or inspiratory phase audible with stethoscope only, and 3 = inspiratory and expiratory wheezing audible without a stethoscope.

Evidence Table 8:

Cade et al., 2000[71]

The **clinical symptom score** assessed clinical severity from 0 to 11 based on heart rate, respiratory rate, supplemental oxygen requirements, and the presence or absence of chest wall retractions. No further details were provided.

Fox et al., 1999[73]

No scales.

Kajosaari et al., 2000[74]

No scales.

Reijonen, 1996[75]

No scales.

Richter et al., 1998[76]

Baseline clinical scores were assigned for respiratory rate, oxygen concentration required to keep the oxygen saturation above 92 percent, presence of wheeze, degree of recession, and the need for intravenous fluid or nasogastric tube feeding. The scoring system was adapted from Westley et al.[114] No additional details were provided.

Daytime and nighttime cough and wheeze were each scored on a scale of 0 to 3 based on severity. No additional details were provided.

Wong et al., 2000[77]

Cough, wheeze and **general well-being** were scored from 0 to 3 (0 = none, 1 = mild, 2 = troublesome, 3 = severe.) No additional details were provided.

Evidence Table 9:

Barry et al., 1986[46]

Eight clinical variables were recorded, including **cough, nasal discharge, feeding, nasal flare, wheeze, chest recession, rhonchi,** and **crepitations**. All variables were scored on a 3-point scale according to severity, except for feeding (which was recorded as normal, slow, tube fed, or parenteral). No further details were provided.

Everard et al., 2001[78]

A **daily severity score** was assessed. The score ranged from 1 to 10 with 1 representing no symptoms and 10 being a ventilated patient. No further details were provided.

Guerguerian et al., 1999[79]

No scales.

Janai et al., 1993[80]

No scales.

Rodriguez, 1987[42]

A **severity of illness score** was determined daily for each patient. The scale ranged from 0 (normal) to 4+ (most severe) and was assigned by a single investigator for all patients. The specific values were determined using an analogue scale similar to one developed by Hall et al.

Rodriguez et al., 1999[81]

A blinded observer assigned a **severity rating value** ranging from 0 (normal) to 4+ (most severe). No additional details were given.

Taber et al., 1983[45]

A **severity of illness score** was made daily for each patient based on written responses to questionnaires. The scale ranged from 0 (normal) to 3+ (most severe illness). No further details were provided.

Evidence Table 10:

Friis et al., 1984[49]

No scales.

Klein M Max 1995[82]

No scales.

Evidence Table 11:

Rodriguez et al., 1997[25]

A **respiratory score** was used as inclusion criteria and for stratified analyses in this study; it is defined as the sum of the component scores for respiratory rate, oxygen saturation, and physical findings divided by 3. A respiratory component score of 0 was given for well or baseline clinical condition; respiratory rate/min no value stated; oxygen saturation-none; adventitial (wheezing, rales)-none; and retractions-none. A respiratory component score of 1 was given for upper respiratory infection (URI) mild clinical condition; respiratory rate/min < 45; oxygen saturation = 95 percent; adventitial (wheezing, rales)-none; and retractions-none. A respiratory component score of 2 was given for lower respiratory infection (LRI) clinical condition; respiratory rate/min of 45 to 59; oxygen saturation 91 to 94 percent; adventitial (wheezing, rales)-mild; and retractions-intercostal. A respiratory component score of 3 was given for moderate LRI clinical condition; respiratory rate/min of 60 to 74; oxygen saturation of 86 to 90 percent; adventitial (wheezing, rales)-moderate; and retractions-intercostal and subcostal. A respiratory component score of 4 was given for severe LRI clinical condition; respiratory rate/min of 75+; oxygen saturation = 85 percent; adventitial (wheezing, rales)-severe; and retractions-intercostal and subcostal with seesaw chest motion. A respiratory component score of 5 was given for respiratory failure clinical condition; respiratory rate/min-mechanical ventilation; oxygen saturation-mechanical ventilation; adventitial (wheezing, rales)-mechanical ventilation; and retractions-mechanical ventilation.

The **physical finding LRI component score** consists of the wheezing, rales, and retractions score divided by 2. For wheezing: 0 = no wheezing and an inhalation to exhalation (I:E) ratio normal, 1 = intermittent wheezing with I:E ratio normal, 2 = wheezing present throughout and I:E ratio 1:1, 3 = wheezing throughout with I:E ratio 1:2, 4 = wheezing audible without stethoscope. For rales: 0 = clear, 1 = inspiratory only and disappears with coughing, 2 = inspiratory not cleared with coughing, 3 = inspiratory and expiratory and don't clear with coughing.

The **LRI score** was based on an experienced clinician's assessment of patients. For LRI score 0 = no respiratory disease, 1 = upper respiratory tract infection/disease, 2 = mild LRI/disease, 3 = moderate LRI/disease, 4 = severe LRI/disease, and 5 = respiratory failure.

The **analog scale** is a visual disease severity scoring system measuring incremental clinical improvement based on a continuous line representing the total spectrum of illness severity. The left-most position of the line represented normal or baseline, while the right-most position represented the most severe. A blind assignment of numbers from 0 to 15 was done by a statistician at the end of the study.

Rodriguez et al., 1997[41]

A **respiratory score** was used as inclusion criteria and for stratified analyses in this study. The respiratory score consists of relevant measures of RSV severity, and is defined as the sum of the component scores for respiratory rate, oxygen saturation, and physical findings (adventitial sounds and retractions) divided by 3. The respiratory score ranged from 0 to 5. A clinically significant change was defined as a reduction of illness from moderate or more severe LRI (= 2.5) to mild or no LRI (= 1.6). A respiratory component score of 0 was given for well or baseline clinical condition; respiratory rate/min no value stated; oxygen saturation-none; adventitial (wheezing, rales)-none; and retractions-none. A respiratory component score of 1 was given for URI mild clinical condition; respiratory rate/min < 45; oxygen saturation = 95 percent;

adventitial (wheezing, rales)-none; and retractions-none. A respiratory component score of 2 was given for LRI clinical condition; respiratory rate/min of 45 to 59; oxygen saturation 91 to 94 percent; adventitial (wheezing, rales)-mild; and retractions-intercostal. A respiratory component score of 3 was given for moderate LRI clinical condition; respiratory rate/min of 60 to 74; oxygen saturation 86 to 90 percent; adventitial (wheezing, rales)-moderate; and retractions-intercostal and subcostal. A respiratory component score of 4 was given for severe LRI clinical condition; respiratory rate/min 75+; oxygen saturation = 85 percent; adventitial (wheezing, rales)-severe; and retractions-intercostal and subcostal with seesaw chest motion. A respiratory component score of 5 was given for respiratory failure clinical condition; respiratory rate/min-mechanical ventilation; oxygen saturation-mechanical ventilation; adventitial (wheezing, rales)-mechanical ventilation; and retractions-mechanical ventilation.

The **physical finding LRI component score** consists of the wheezing, rales, and retractions score divided by 2. For wheezing: 0 = no wheezing and an I:E ratio normal, 1 = intermittent wheezing with I:E ratio normal, 2 = wheezing present throughout and I:E ratio 1:1, 3 = wheezing throughout with I:E ratio 1:2, 4 = wheezing audible without stethoscope. For rales: 0 = clear, 1 = inspiratory only and disappears with coughing, 2 = inspiratory not cleared with coughing, 3 = inspiratory and expiratory and don't clear with coughing.

The **LRI score** was based on an experienced clinician's assessment of patients. For LRI score 0 = no respiratory disease, 1 = upper respiratory tract infection/disease, 2 = mild LRI/disease, 3 = moderate LRI/disease, 4 = severe LRI/disease, and 5 = respiratory failure.

The **analog scale** is a visual disease severity scoring system measuring incremental clinical improvement based on a continuous line representing the total spectrum of illness severity. The left-most position of the line represented no illness, while the right-most position represented the most severe life-threatening illness.

Evidence Table 12:

Chipps et al., 1993[47]

The daily evaluation included a **total symptom score,** a **wheezing score,** a **muscle retraction score,** and an **accessory muscle use score.** Each of the scores for wheezing, muscle retractions, and accessory muscle use were assigned from 0 (absent) to three (severe). The same investigator did scoring for each patient. The total symptom score represents the sum of the wheezing, muscle retractions, and accessory muscle use scores.

Hollman et al., 1998[84]

A **clinical asthma score** was used to assess level of respiratory distress. This scoring system was originally developed by Wood et al.,[115] and was modified slightly for this study. Four scores ranging from 0 to 2 were assigned for each of the following categories: cyanosis (SpO_2), inspiratory breath sounds, accessory muscles used, expiratory wheezing, and cerebral function. The scores were assigned as follows: cyanosis (SpO_2) 0 = none, 1 = in room air (<94% SpO_2),
2 = in 0.40 FI O_2 (<94% SpO_2); inspiratory breath sounds 0 = normal, 1 = unequal, 2 = decreased/absent; accessory muscles used 0 = none, 0.5 = mild, 1 = moderate, 2 = maximal; expiratory wheezing 0 = none, 0.5 = mild, 1 = moderate, 2 = marked; cerebral function 0 = normal, 1 = depressed/agitated, 2 = coma.

Kong et al., 1993[51]

Used a **modified severity score** referenced to Bruhn, et al.[116] No further details were given in the article except to say that the categories included mild, moderate, and severe disease.

Luchetti et al., 1998[39]

No scales.

Van Bever et al., 1995[85]

Used **clinical scoring system** of Tal, et al.[112] The clinical scoring system assesses the infant's respiratory rate, wheezing, cyanosis, and accessory muscle use. Each of these four components is rated on a scale of 0 to 3. A value of 0 was assigned for respiratory rate < 30; no wheezing; no cyanosis; and no accessory muscle use. A value of 1 was assigned for respiratory rate of 31 to 45; wheezing at terminal expiration with stethoscope only; circumoral cyanosis on crying only; and with or without accessory muscle use. A value of 2 was assigned for respiratory rate of 46 to 60; wheezing during entire expiration and inspiration with stethoscope only; circumoral cyanosis at rest; and ++ accessory muscle use. A value of 3 was assigned for respiratory rate > 60; wheezing during entire expiration and inspiration without stethoscope; generalized cyanosis at rest; and ++++ accessory muscle use.

Nasr et al., 2001[40]

The **clinical assessment scoring** in this study was described by Wang et al.[111] One point was given for respiratory rate of 31 to 45/minute; wheezing at terminal expiration or only with stethoscope; intercostal retraction; and normal general condition. Two points were given for respiratory rate of 45 to 60/minute; wheezing during the entire expiration or audible on expiration without stethoscope; tracheosternal retractions; and stable general condition. Three points were given for respiratory rate > 60/minute; inspiratory and expiratory wheezing without stethoscope; severe retraction with nasal flaring; and general condition including irritability, lethargy, and poor feedings. No further information was given regarding this scoring system, but the summary of results table showed respiratory rate score, wheezing score, and retraction score.

The **Chest X-Ray scoring system** in this study was developed based on review of the literature and the experience of radiologists. Each chest x-ray was graded for perihilar markings, hyperinflation, atelectasis or focal opacities, and general opacities, and each of these categories was graded on a 0 to 3 point scale with 0 being normal and 3 being markedly abnormal. A score of 0 was given for normal perihilar markings; normal hyperinflation on lateral view; hyperinflation = 15 on anteroposterior view; normal atelectasis/focal opacities; and no generalized opacity. A score of 1 was given for subtle increase in perihilar markings; hyperinflation characterized by mild flattening of diaphragm on lateral view; hyperinflation 16 on anteroposterior view; atelectasis/focal opacities characterized by a single area of segmental/subsegmental opacity; and generalized opacity characterized by mild parahilar haze. A score of 2 was given for definite increase in perihilar markings; hyperinflation characterized by completely flat diaphragm on lateral view; hyperinflation 17 on anteroposterior view; atelectasis/focal opacities characterized by two segments/subsegments; and generalized opacity characterized by bilateral symmetric ground-glass opacity. A score of 3 was given for perihilar markings characterized by course, irregular peripheral marking; hyperinflation characterized by

inverted diaphragm on lateral view; hyperinflation = 18 on anteroposterior view; atelectasis/focal opacities characterized by three segments/subsegments; and generalized opacity characterized by bilateral diffuse airspace disease. Hyperinflation was scored separately on the anteroposterior chest x-ray and on the lateral chest x-ray and the two scores were averaged. Only the anteroposterior chest x-ray score was used if the lateral chest x-ray was not available. Each of the other three findings was given a single score and the scores for each exam finding were summed to give an overall examination score. The final score ranged from 0 if all findings were normal to 12 if all findings were markedly abnormal.

Evidence Table 13:

Groothuis et al., 1993[87]

The **respiratory scoring system** was used to describe disease severity and was based on changes from baseline in respiratory rate, oxygen saturation, and pulmonary findings including retractions, wheezing, and crackles. For each of these three variables, a score from 0 to 5 was determined by the degree of difference between the observed measurement and the baseline measurement for the child. An **overall respiratory score** ranging from 0 to 5 was determined to be the mode of the three component scores or the mean, if there was no mode. For oxygen saturation: 0 = baseline value (no upper respiratory tract infection [URTI]), 1 = baseline value (URTI), 2 = decrease < 5 percent, 3 = decrease 5 to 10 percent, 4 = decrease > 10 percent, and 5 = assisted ventilation. For respiratory rate: 0 = baseline value (no URTI), 1 = baseline value (URTI), 2 = increase 1 to 14/min, 3 = increase 15 to 30/min, 4 = increase > 30/min, and 5 = assisted ventilation. For retractions, wheezing, crackles: 0 = no change (no URTI), 1 = minimal, 2 = mild, 3 = moderate, 4 = severe, and 5 = assisted ventilation. For respiratory score: 0 = baseline value (well), 1 = URTI, 2 = mild LRTI, 3 = moderate LRTI, 4 = severe LRTI, and 5 = assisted ventilation.

Groothuis et al., 1995[86]

The **respiratory scoring system** was used to describe disease severity and was based on changes from baseline in respiratory rate, oxygen saturation, and pulmonary findings including retractions, wheezing, and crackles. The score for each of the three components was determined by the difference between the observed measurement and a baseline measurement taken at the most recent monthly clinic visit. The **overall respiratory score** was the mode (or mean if no mode) of the three scores and ranged from 0 being well or baseline to 5 representing respiratory failure. A respiratory score of 1 defined an upper respiratory tract infection, = 2 defined a lower respiratory tract infection, and = 3 defined a moderate to severe lower respiratory tract infection (LRTI).

Simoes et al., 1998[88]

Cardiac disease severity score based on a scale from 0-6 on the basis of cyanosis (room air saturation, 0 = > 85 percent, 1 = = 85 percent), left-to-right shunt (0 = absent, 1 = present), pulmonary hypertension (0 = none, 1 = ½ -2/3 systemic pressures, 2 = >2/3 systemic pressure), and congestive heart failure (0 = none, 1 = controlled with medications, 2 = uncontrolled.)

Respiratory scores mentioned but no details provided about determination of score.

LRI scores mentioned but no details provided about determination of score.

The PREVENT Study Group, 1997[89]

The **LRI score** was based on an experienced clinician's assessment of patients' respiratory status. For LRI score 0 = no respiratory illness/infection, 1 = upper respiratory tract illness/infection, 2 = mild LRI, 3 = moderate LRI, 4 = severe LRI, and 5 = mechanical ventilation.

Groothuis, 2001[90]

No scales.

Evidence Table 14:

The Impact-RSV Study Group, 1998[91]

The **Lower Respiratory Tract Illness/Infection (LRI) Score** was used as follows: 0 = no respiratory illness/infection, 1 = upper respiratory tract illness/infection, 2 = mild LRI, 3 = moderate LRI, 4 = severe LRI, 5 = mechanical ventilation.

Meissner et al., 1999[92]

No scales.

Evidence Table 15:

Groothuis et al., 1998[93]

A **respiratory score** was used to rate the severity of RSV respiratory disease using a scale of 1 to 5 as follows: 1 = upper respiratory tract infection, 2 = mild lower respiratory tract infection, 3 = moderate lower respiratory infection, 4 = serious lower respiratory infection, and 5 = lower respiratory infection requiring assisted ventilation.

Piedra et al., 1996[94]

A **modified Shwachman clinical score** representing a respiratory/nutritional score developed for CF children was performed to assess the severity of clinical disease and ranged from 75 = best to 4 = worst. No further details given.

The **Brasfield scoring system** was utilized to quantitate radiographic disease and ranged from 25 = best to 4 = worst. No further details given.

A **respiratory assessment score** was used to distinguish between an acute upper respiratory tract illness (AURTI) and an acute lower respiratory tract illness (ALRTI). An AURTI was assigned if the child had one or more of the following signs: sneeze, coryza (rhinorrhea, nasal congestion, or nasal crusting) and/or pharyngitis (hyperemic pharynx or exudative pharynx). An ALRTI was assigned if one of more of the following signs was present: wheeze or rales on auscultation of the lungs, shortness of breath on exam, respiratory rate > 15 breaths/min above the child's baseline at enrollment, increase in sputum production or a change in the quality of the sputum (from clear to turbid yellow or green), or increase in coughing episodes.

Piedra et al., 1998[95]

A **modified Shwachman clinical score** representing a respiratory/nutritional score developed for CF children was performed to assess the severity of clinical disease and ranged from 75 = best to 4 = worst. No further details given.

The **Brasfield scoring system** was utilized to quantitate radiographic disease and ranged from 25 = best to 4 = worst. No further details given.

A **respiratory assessment score** was used to distinguish between an acute upper respiratory tract illness (AURTI) and an acute lower respiratory tract illness (ALRTI). An AURTI was assigned if the child had one or more of the following signs: sneeze, coryza (rhinorrhea, nasal congestion, or nasal crusting) and/or pharyngitis (hyperemic pharynx or exudative pharynx). An ALRTI was assigned if one of more of the following signs was present: wheeze or rales on auscultation of the lungs, shortness of breath on exam, respiratory rate > 15 breaths/min above the child's baseline at enrollment, increase in sputum production or a change in the quality of the sputum (from clear to turbid yellow or green), or increase in coughing episodes. (Referenced to previous article Piedra, et al., 1996 in text).

Appendix B

Appendix B. Abstract Review Form

Bronchiolitis in Infants and Children

Article Author: _____
Journal: _____
Year of Article: _____
Abstractor Initials: ___ ___ ___

1. Includes children birth to 5.	Yes	No	Cannot Determine
2. Addresses one or more of the following. (Check all that apply.) ____ Diagnosis (KQ1) ____ Treatment (KQ2) ____ Prophylaxis (KQ3) ____ Cost Effectiveness Analysis (KQ4) If any KQ is checked, check "Yes" in box.	Yes	No	Cannot Determine
3. Original research design. (Exclude editorials, commentaries, letters to editor, reviews, etc.)	Yes	No	Cannot Determine
4. Study N is greater than or equal to 10 subjects.	Yes	No	Cannot Determine
5. Study conducted in North America, United Kingdom, Australia/New Zealand and/or Europe.	Yes	No	Cannot Determine
6. Study published between 1980 and 2001.	Yes	No	Cannot Determine
7. If KQ1 (diagnosis): ____ RCT study design used ____ Prospective cohort If either is checked, check "Yes" in box.	Yes	No	Cannot Determine
8. If KQ2 or KQ3 (treatment and/or prophylaxis): RCT study design used.	Yes	No	Cannot Determine
9. Published in English. If non-English specify language: _____ Applies to key question # _____	Yes	No	Cannot Determine

_____ CHECK HERE IF ARTICLE TO BE PULLED FOR BACKGROUND.

IF ANY ITEM IS IN GRAY BOX THE ARTICLE IS EXCLUDED.

IF ITEMS 7, 8 OR 9 MARKED "NO," ARTICLE MAY BE EXCLUDED IN FUTURE.

IF CANNOT DETERMINE, ARTICLE WILL BE PULLED FOR REVIEW.

Appendix C

Appendix C. Final Abstraction Forms

SECTION 1: ABSTRACTION IDENTIFIERS

1.	Abstractor name:
2.	Date of abstraction:
3.	Name of second abtractor/reviewer:
4.	Date of review:

SECTION 2: ARTICLE IDENTIFIERS

5.	Year published:
6.	Surname of first author:
7.	Title:
8.	Journal:

SECTION 3a: SCREENING FOR INCLUSION

If any response to Questions 9–13 below is "No", STOP, and forward this article to the Research Coordinator

		Yes	No
9.	Patients are infants and children (< 5 years)	?	?
10.	N=10 or more (i.e., sum of treatment and control=10)	?	?
11.	Original data (not a systematic review or meta-analysis)	?	?
12.	Treatment of bronchiolitis **or** prophylaxis for bronchiolitis in infants and children	?	?
13.	Is the study an RCT?	?	?

SECTION 3b: SCREENING FOR COSTS

14.	Are the costs of managing bronchiolitis explicitly discussed?	?	?

SECTION 4: HEALTH AND GEOGRAPHIC SETTINGS

	Yes	No
15. Multi-center study	?	?
16. If "yes", list the centers in which study was conducted		

17. Setting at recruitment:	Yes
Inpatient	?
Outpatient	?
Emergency Department	?
ICU	?
Other (specify)	?
Not reported	?

18. If additional followups were conducted **outside the original setting** please specify: (a) the interval at which followup was conducted (i.e., 5 days, 6 months, etc) (b) the setting at followup(s)
19. Where was study conducted? (List all countries)

SECTION 5: FUNDING SOURCE

	Yes
20. Industry	?
21. Government	?
22. Professional society	?
23. Hospital/Managed Care Organization	?
24. Foundation/Charity	?
25. Consumer/Patient Organization	?
26. Not specified	?
27. Other (specify)	?

SECTION 6: OBJECTIVE OF THE ARTICLE

28. Page no.:
29. Paragraph no.:
30. Quote:

SECTION 7a: MASKING

31. Masking as defined by authors:	*Yes*
Single blinding	?
Double blinding	?
Triple blinding	?
Other (please specify)	?
Cannot determine	?

SECTION 7b: DESIGN

	Yes	No
32. Is it placebo-controlled?	?	?
33. Is it a cross-over design?	?	?

SECTION 8: STUDY SIZE

	Number	**Cannot determine**
34. Number screened:		?
35. Number eligible:		?
36. Number randomized:		?
37. Study size and number of dropouts for primary outcome. List number of and reasons for withdrawals and/or losses to followup		?

SECTION 9: INCLUSION/EXCLUSION CRITERIA

38. List all inclusion criteria for the study
39. List all exclusion criteria for the study

SECTION 10: CLINICAL SCALES/COMPOSITE SCORES

	Yes	No
40. Were any diagnostic clinical scales or composite scores used **as criteria for entry into the study?**	?	?
41. If “yes”, name of scale(s) and briefly describe:		
42. If “yes”, is the scale referenced?	?	?
43. Please provide full reference for scale(s):		
44. Any scales used otherwise in the study?	?	?
45. If "yes", note name of scale(s), reference, and briefly describe:		

SECTION 11: DEMOGRAPHIC CHARACTERISTICS OF PATIENT

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, write NR. If reporting measure of precision/variation, then write in left-hand column.

Demographic characteristics	**NR**	**Report sig. tests as written (note if NR)**	**Group 1**	**Group 2**	**Group 3**	**Group 4**	**Overall**
46. Defining characteristic of each group (Placebo/name(s) of intervention)							
47. Number of patients at randomization	?						
48. Age at enrollment (specify days/weeks/months/years):							
Minimum age	?						
Maximum age	?						
Mean/median (specify)	?						
49. Estimated gestational age (specify days/weeks/months):							
Minimum age	?						
Maximum age	?						
Mean/median (specify)	?						

SECTION 11: DEMOGRAPHIC CHARACTERISTICS OF PATIENT (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, write NR. If reporting measure of precision/variation, then write in left-hand column.

Demographic characteristics	NR	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
50. Number of male patients	?						
51. Number of female patients	?						
52. Birthweight (specify unit of measurement)	?						
53. Exposure to maternal smoking during pregnancy	?						
54. Exposure to smoking at home at the time of recruitment	?						

SECTION 11: DEMOGRAPHIC CHARACTERISTICS OF PATIENT (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, write NR. If reporting measure of precision/variation, then write in left-hand column.

Demographic characteristics	**NR**	**Report sig. tests as written (note if NR)**	**Group 1**	**Group 2**	**Group 3**	**Group 4**	**Overall**
55. Race:	?						
White	?						
Hispanic	?						
African-American	?						
Asian	?						
Native American	?						
Other (please specify)	?						
56. Breastfeeding (as defined in study)	?						
Definition of breastfeeding used in study							

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If reporting measure of precision/variation, then write in left-hand column.

Diagnostic criteria	NR	Check if used for diag-nosis	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
57. General appearance (e.g. toxic, moderately ill, well)	?	?						
58. Behavior/ alertness/ cerebral function	?	?						
59. Fever/temperature	?	?						

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If reporting measure of precision/variation, then write in left-hand column.

Diagnostic criteria	NR	Check if used for diag-nosis	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
60. Respiratory rate/ Tachypnea/ hyperventilation	?	?						
61. Intercostal retractions/ recessions/ grunting/ nasal flaring/ accessory muscle use/ increased respiratory effort	?	?						
62. Nasal discharge/ rhinorrhea/ rhinitis	?	?						

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If reporting measure of precision/variation, then write in left-hand column.

Diagnostic criteria	NR	Check if used for diag-nosis	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
63. Wheezing	?	?						
64. Pulse oximetry/ O_2 saturation	?	?						
65. Arterial blood gas	?	?						
66. Cyanosis	?	?						

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If reporting measure of precision/variation, then write in left-hand column.

Diagnostic criteria	NR	Check if used for diag-nosis	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
67. Rhonchi	?	?						
68. Rales/ Crackles/ Adventitial breathing/ Crepitations	?	?						
69. Oxygen requirement	?	?						

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If reporting measure of precision/variation, then write in left-hand column.

Diagnostic criteria	NR	Check if used for diag-nosis	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
70. Clinical Scales	?	?						
71. Other (please describe below, e.g., poor feeding)								

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. Provide denominator where available. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If there are no patients in the category for reasons other than exclusion, write 0. If reporting measure of precision/variation, then write in left-hand column.

TREATMENT GROUP	NR	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
72. Presence of comorbidities:							
Chronic lung disease	?						
Congenital heart disease	?						
Previous history of wheezing/ Lower Respiratory Infection	?						
Asthma	?						
Atopy/ allergies of the subject	?						
Oncologic/ leukemia/ cancer/ brain tumor	?						
Other (please describe)	?						

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. Provide denominator where available. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If there are no patients in the category for reasons other than exclusion, write 0. If reporting measure of precision/variation, then write in left-hand column.

TREATMENT GROUP	**NR**	**Report sig. tests as written (note if NR)**	**Group 1**	**Group 2**	**Group 3**	**Group 4**	**Overall**
73. Presence of RSV	?						
74. Family history of wheezing/ atopy	?						
75. Patients on ventilators	?						
76. Other ventilatory support (please describe below):	?						

SECTION 12: BASELINE AND DIAGNOSTIC CHARACTERISTICS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. Provide denominator where available. If data are not recorded in the article, check NR. If Exclusion Criteria or Not Applicable, write it across the row. If there are no patients in the category for reasons other than exclusion, write 0. If reporting measure of precision/variation, then write in left-hand column.

TREATMENT GROUP	NR	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
77. Other clinical differences (please specify)	?						

SECTION 13: FURTHER TESTS

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If reporting measure of precision/variation, then write in left-hand column.

Tests	NR	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
78. CXR	?						
79. If "yes" for CXR, were any specific criteria used? (e.g., hyperinflation / peribronchial thickening / infiltrates / atelectasis)							
80. Complete Blood Counts (CBCs)	?						
81. Blood cultures	?						

SECTION 13: FURTHER TESTS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If reporting measure of precision/variation, then write in left-hand column.

							Yes	No
82. Viral studies:							?	?
Type of viral study	**NR**	**Report sig. tests as written (note if NR)**	**Group 1**	**Group 2**	**Group 3**	**Group 4**	**Overall**	
RSV detection (e.g., IFA, DFA, ELISA)	?							
RSV cultures	?							
Other virus detection, specify below (e.g., parainfluenza, influenza, adenovirus, etc)	?							

SECTION 13: FURTHER TESTS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If reporting measure of precision/variation, then write in left-hand column.

Tests	NR	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
83. Pulmonary function tests (PFTs, Lung Volumes, e.g., FEV, FVC)	?						

SECTION 13: FURTHER TESTS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If reporting measure of precision/variation, then write in left-hand column.

Tests	NR	Report sig. tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
84. Immunologic studies:							
Eosinophilis	?						
Immunoglobulin levels	?						
Erythrocyte sedimentation rate	?						
C-reactive protein	?						
Other immunologic studies	?						

SECTION 13: FURTHER TESTS (continued)

Record numbers as presented in article, in the order of treatment presented in the tables in the article. If data are not recorded in the article, check NR. If reporting measure of precision/variation, then write in left-hand column.

Tests	NR	Report sig. Tests as written (note if NR)	Group 1	Group 2	Group 3	Group 4	Overall
85. Other tests (please specify below)	?						

SECTION 14: TREATMENT

TREATMENT GROUP	Group 1	Group 2	Group 3	Group 4
86. Frequency, dose, route, duration and other notes on treatment				

SECTION 14: TREATMENT (continued)

	Yes	No
87. Were other standard treatments given as needed?	?	?
88. Specify type of treatment below		
89. Were all other treatments the same for each treatment group? If not, please specify below. (If patients received usual care at discretion of physician do not report).	?	?

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
90. Clinical scores Specify Score: Specify measure, e.g., change in score	?						

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
91. Respiratory rate/ Tachypnea/ hyper-ventilation	?						
92. Intercostal retractions/ recessions/ grunting/ nasal flaring/ accessory muscle use/ increased respiratory effort	?						

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
93. Wheezing	?						
94. Pulse oximetry/ O_2 saturation	?						
95. Pulmonary Function Tests	?						

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
96. Oxygen treatment?	?						
Length of treatment							
Mean O_2 concentration							
Other							

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
97. Bronchodilator use?	?						
Type of bronchodilator							
Length of treatment							
Other							

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
98. Ribavirin use	?						
99. Steroid use? Type of steroid Length of treatment Other	?						

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
100. Antibiotic use? Type of antibiotic Length of treatment Other	?						

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
101. Hospitalization	?						
Decision to admit							
Duration of stay (specify hrs, days, etc)							
Readmission							

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
102. Visits to MD/other health professional	?						
103. Repeat wheezing illness/ asthma	?						
104. If "yes" for repeat wheezing, length of wheezing	?						

SECTION 15: OUTCOMES OF TREATMENT/PROPHYLAXIS (continued)

Where possible, please fill out table below. Be sure to specify: (1) whether change or absolute value (2) unit of measurement (3) Table no. in the article. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
105. Other outcomes (Please describe below)	?						

IF NOT APPLICABLE/NOT ABOUT PREVENTION, SKIP TO SECTION 17

SECTION 16: PREVENTION OF BRONCHIOLITIS

Where possible, please fill out table below. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
106. Symptom-free days	?						
107. Development of RSV	?						
108. Decision to admit (y/n)	?						
109. If "yes", length of stay	?						

SECTION 16: PREVENTION OF BRONCHIOLITIS (continued)

Where possible, please fill out table below. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
110. Readmission	?						
111. ICU care (y/n)	?						
112. If "yes" to ICU care, length of stay	?						
113. Ventilator use (respiratory failure) (y/n)	?						
114. If "yes" to ventilator use, length of treatment	?						

SECTION 16: PREVENTION OF BRONCHIOLITIS (continued)

Where possible, please fill out table below. NR = not reported. N = sample size. If you are not able to fill out the table, you MUST provide reference to the Table numbers in the article.

Outcomes	NR	Time period	Report sig. tests as written (note if NR)	Group 1 N=	Group 2 N=	Group 3 N=	Group 4 N=
115. Death	?						
116. Other	?						

SECTION 17: SUB-GROUP ANALYSIS

	Yes	*No*
117. Any sub-group analysis?	?	?
118. If “yes", provide details below		

SECTION 18: ADVERSE EFFECTS/HARMS

For all adverse effects below, present figures as reported in the article. Follow percent with %. If adverse effects were measured, but figures are not reported, write NR. If adverse effects were not measured, write NA.

TREATMENT GROUP	NR	N	Report sig. tests as written (note if NR)	Time period	Group 1	Group 2	Group 3	Group 4	Overall
119. Provide information on all adverse effects; e.g., vomiting, rash, GI bleeding, growth retardation, secondary infections, etc	?								

SECTION 19: LIMITATIONS

120. Please describe limitations of the study:

SECTION 20: COST OF MANAGING BRONCHIOLITIS

	Yes	No
121. Costs of treatment provided in article?	?	?
122. If "yes" please provide page number(s) for references to costs of treatment		
123. Costs of prophylaxis provided in article?	?	?
124. If "yes" please provide page number(s) for references to costs of prophylaxis		
125. Other monetary costs provided?	?	?
126. If "yes" please specify below:		
127. If "yes" please provide page number(s) for references to other costs		
128. Other non-monetary costs provided?	?	?
129. If "yes" please specify below		
130. If "yes" please provide page number(s) for references to other costs		

ECONOMIC EVALUATION ABSTRACTION FORM FOR 06919.009.001		
I. CLASSIFICATION INFORMATION		
1. Reviewer's Name		
2. First Author, Title, Date		
3. Tracking Number		
4. Study Type	❑ Published article ❑ Technical report ❑ Unpublished dissertation/thesis ❑ Abstract/presentation ❑ Book/book chapter	
5. Study Design	**Analytic Method** ❑ Cost Effectiveness Analysis (CEA) ❑ Average CEA ❑ Incremental CEA ❑ CE Ratio (specify): ❑ Cost-Utility Analysis (CUA) ❑ Average CUA ❑ Incremental CUA ❑ CU Ratio (specify): ❑ Cost-Benefit Analysis (CBA) ❑ Average CBA ❑ Incremental CBA ❑ CB Ratio (specify): ❑ Cost Analysis ❑ Total Cost (specify): ❑ Average Cost (specify):	**Summary Measure** ❑ Dollars per case or injury averted ❑ Dollars per person reached by intervention ❑ Dollars per life saved ❑ Dollars per life-year saved ❑ Dollars per year of healthy life saved ❑ Other (specify): ❑ Dollars per Quality-Adjusted Life Year (QALY) ❑ Dollars per Disability-ALY (DALY) ❑ Other (specify): ❑ Dollars ❑ Dollar per dollar ❑ Other (specify): ❑ Dollars ❑ Dollars per unit of service rendered ❑ Dollars per add'l. unit of service rendered ❑ Other (specify):

II. INTERVENTION DESCRIPTION	
6. Describe Study Population	
7. Age Range of Study Pop.	
8. Other Characteristics of Study Pop.	
9. Comparator	❑ Status quo (specify) : ❑ Other (specify): ❑ No Comparator ❑ Cannot Determine ❑ Does Not Apply
10. Intervention Description	
11. Other Interventions Included in the Analysis	A. B.
12. Community Intervention Included	❑ All Links--Community Interventions with Health Outcomes Analyzed ❑ Initial Links Only--Community Interventions with an Intermediate Outcome Analyzed ❑ Final Links Only--Clinical Intervention or Behavior Change with Health Outcomes Analyzed
13. Effect Size	❑ Specify:
14. Sources of Data for Effect Size	❑ Single Original Study ❑ Single Reported Study ❑ Compilation of Studies ❑ Expert Opinion ❑ Meta-Analysis ❑ Other (specify): ❑ Cannot Determine ❑

III. Study Information		
15. Location		
16. Audience	❑ MCO ❑ Providers ❑ Other Clinical ❑ Academic Org. ❑ CBO ❑ Congress ❑ State Legislature	❑ Public Health Agency: *Federal State Local* ❑ Other Govt. Dept./Org. *Federal State Local* ❑ Other Non-Govt. (specify): ❑ Other Audience (specify): ❑ Cannot Determine ❑ Does Not Apply
17. Setting	❑ Hospital ❑ Clinic or Provider Office ❑ Nursing Home ❑ Child Care Center ❑ Drug Treatment Facility ❑ Mental Health setting ❑ CBO ❑ School ❑ Workplace	❑ Religious Institution ❑ Home ❑ Prison ❑ Street ❑ Shelter ❑ Community wide (specify): ❑ Other Setting (specify): ❑ Cannot Determine ❑ Does Not Apply
18.Perspective	❑ Societal ❑ Patient and Patient Family ❑ Healthcare Provider **HMO Non-HMO** ❑ Public Health Agency Program **Federal State Local**	❑ Other Govt. Dept./Org. **Federal State Local** ❑ Self-Insured Employer ❑ Private Insurer ❑ Other Perspective(s) (specify): ❑ Cannot Determine ❑ Does Not Apply
19. Time Frame and Analytic Horizon	**Time Frame** ❑ Yes (specify): ❑ No ❑ Cannot Determine ❑ Does Not Apply	**Analytic Horizon** ❑ Yes (specify): ❑ No ❑ Cannot Determine ❑ Does Not Apply

20. Cost Data	❑ Estimated Directly in Study ❑ Medstat data ❑ Published related Article ❑ Unpublished related work ❑ Expert opinion ❑ Physicians fee and coding guide ❑ DRG ❑ Medicare Data ❑ Medicaid data ❑ *Statistical Abstract of the U.S. (*US Dept. of Commerce, Economics, and Statistics) ❑ *Health United States* (US DHHS) ❑ National Hospital Discharge Data ❑ Natl. Medical Care Utilization and Expenditures Survey (MEPS) ❑ Natl. Ambulatory Medical Care Survey (NAMCS)	❑ Natl. Mortality Followback Survey ❑ National Health Interview Survey ❑ American Hospital Association Survey ❑ AHRQ Statistics ❑ HIAA Data ❑ BC/BS ❑ Natl. Health and Nutrition Examination Survey ❑ HCFA/CMS RVUs ❑ HCFA/CMS Fee Schedule ❑ Natl. Testing Center ❑ HRSA ❑ Managed Care Data (specify): ❑ Other (specify): ❑ Cannot Determine ❑ Does Not Apply
21.Intervention or Program Costs	**Financial Costs** ❑ Vaccines ❑ Drugs ❑ Tests ❑ Lab/Diagnostic Procedures ❑ Personnel ❑ Communications ❑ Transportation ❑ Advertising ❑ Overhead ❑ Capital Equipment ❑ Real Estate ❑ Miscellaneous ❑ Followup ❑ Other (specify):	**Economic Costs** ❑ Volunteer Time ❑ In Kind ❑ Other (specify):

22. Participants' Cost-of-Illness	**Medical Costs** ❑ Drugs ❑ Tests ❑ Lab/Diag. Procedures ❑ Personnel ❑ Communication ❑ Transportation **Capital Equipment** ❑ Hospital Stay ❑ Real Estate ❑ Overhead ❑ Miscellaneous ❑ Followup ❑ Disease Sequels ❑ Other (specify):	**Nonmedical Costs** ❑ Travel Time ❑ Child Care ❑ Miscellaneous ❑ Other (specify):	**Productivity Losses** ❑ Travel ❑ Waiting ❑ Service ❑ Income Forgone Because of Illness ❑ Income Forgone by Accompanying Parent or Guardian ❑ Income Forgone Because of Death ❑ Other (specify):
23. Value of Summary Measure	❑ Selected from Study ❑ Recalculated ❑ Ratio, Cost-Savings or NPV:		
24. Location of Selected Ratio, Costs, Cost-Savings or NPV in article	❑ Page No.: ❑ Table No.:		
25. Comments			

Appendix D

Appendix D. Quality Rating Form

Quality Assessment for Randomized Controlled Trials of Treatment or Prophylaxis – EPC Bronchiolitis Project

Author: _____

Journal: _____ **Year:** _____

Quality Abstractor: _____ _____

	Inadequate	Unable to Determine	Adequate	Excellent
1. Randomization				
Adequate approach to sequence generation				
Adequate allocation concealment				
Similarity of groups at baseline				
2. Masking/ Blinding				
Double-blinding of treatment allocation				
3. Statistical Analysis				
Appropriate handling of withdrawals, losses to followup, and missing data with use of an intent to treat analysis				
4. Funding/ Sponsorship				
Type and/ or level of support detailed				
Overall Assessment of Study Quality (circle one)	Poor	Fair	Good	Excellent

Comments on study Quality- Please consider the following in addition to other factors that you think are important to consider in your final overall quality assessment:

Was the population selected appropriate to answer the question?
Was the outcome clearly defined?
Was the outcome clinically relevant?
Was the statistical analysis appropriate?