

Supplementary Table: Data Extraction

	Study Details		Methodology			Population						Outcomes relating to RSV	Conclusions	Quality Scores		
	Citation	Country	Study Design	Intervention	Duration	Inclusion criteria	Exclusion criteria	Disease status	N	Gender	Mean age at admission			Evidence Level	Item Bank	JADAD
¹	Alan et al. 2015.	Turkey	Prospective, multicentre study	None	-	Newborns hospitalized with ARI using Respi-Strip® RSV test	NR	Confirmed RSV infection	250	NR	NR	68.4% of RSV-hospitalized infants were full-term infants. RSV-related mortality rate was 1.2%.	RSV is a significant cause of infant hospitalization during the RSV season, and may present a threat to others in the NICU.	3	10	NA
²	Ambrose et al. 2014.	USA	Prospective, multicentre study	None	2009-2011	Preterm infants (32-35 wGA) <6 months old	Infants with CLD; hs-CHD; life expectancy <6 months; prophylaxis	Laboratory-documented RSV illness	1646	M: 54%	Mean 2.3 months	287 subjects developed confirmed RSV ARI. There were 112 outpatient visits for URI, 157 outpatient visits for LRTI, 69 ED visits and 57 hospitalizations. The incidence rate of RSV from November-March was 25.4/100 infant-seasons for any confirmed RSV ARI. In the 57 hospitalized infants, median duration was 4 days. 16% required ICU. 11% received mechanical ventilation.	The highest RSV hospitalization rates occurred in infants <6 months with day care attendance or pre-school aged siblings .	1	11	NA
³	Anderson et al. 2016.	USA	Prospective, multicentre study	None	2014-2015	Preterm infants (29-35 wGA) <12 months old with laboratory-confirmed RSV infection	Prophylaxis	Laboratory-documented RSV illness	709	NR	Mean 3-4 months	Infants <6 months of age accounted for 78% of RSV hospitalizations observed, 87% of ICU admissions, and 92% of patients requiring mechanical ventilation.	Infants 29-32 wGA were over-represented relative to their prevalence in US births. Earlier GA and younger chronologic age were associated with higher risk of ICU admission and mechanical ventilation.	1	10	NA
⁴	Bala et al. 2005.	Ireland	Prospective, single centre study	None	1997-2001	Preterm infants (32 wGA) hospitalized for clinical bronchiolitis	NR	Bronchiolitis admission	174	NR	NR	20% (35/174) infants were hospitalized for bronchiolitis during the study period for a mean of 5 days. No infants required ICU admission, and there were no deaths.	Bronchiolitis is a major problem in preterm infants.	3	8	NA

5	Bergsträsser et al. 1998.	Germany	Retrospective, single centre study	None	1990-1993	Children hospitalized with suspected RSV infection	NR	Confirmed RSV infection	107	NR	Median 3.5 months	17/107 children with confirmed RSV infection were preterm. Prematurity was significantly associated with oxygen supplementation.	RSV infection is influenced by underlying disease, prematurity, and weight.	2	10	NA
6	Blanken et al. 2013.	Netherlands	Prospective, multicentre study	None	2008-2011	Birth cohort of healthy preterm infants 33-35 wGA	Gross abnormalities; Down's syndrome; prophylaxis	Confirmed RSV infection	2421	Male 55.1-2%	NR	Of the total 2421 followed infants, 198 were hospitalized for LRTI; 129 were RSV positive (of 170 tested). Risk of RSV hospitalization over the derivational and validation cohorts was 4.9-5/7%. Risk factors for RSV in preterm infants included family atopy, season of birth, breastfeeding, siblings and/or day care attendance.	The study created a validated prediction rule to identify preterm infants at higher risk of RSV hospitalization.	1	11	NA
7	Bonillo Perales et al. 2000.	Spain	Prospective single centre study	None	1997-2000	All neonatal infants	None	Bronchiolitis admission	12,895	NR	Mean 3.1 months	455 of 12,895 neonates (3.52%) were hospitalized for bronchiolitis. Hospitalization rate was 8.6% in preterm infants and 21.1% in preterm infants that had neonatal mechanical ventilation. Prematurity also carried increased risk of ICU admission.	Neonatal mechanical ventilation, BPD and CHD are more closely linked to RSV positive bronchiolitis admission than GA.	1	10	NA
8	Boyce et al. 2000.	USA	Retrospective, multicentre study	None	1989-1993	Children <3 years old enrolled at birth in Tennessee Medicaid	NR	Confirmed RSV or bronchiolitis infection	248,652 child-years	M: 51%	<3 years	A rate of 81.6 RSV hospitalizations per 100 child years in infants <12 months old was reported. Infants with BPD, CHD or preterm birth had a higher risk of RSV infection.	Children <24 months with BPD have high rates of RSV hospitalization. After the first year of life, children with CHD or prematurity have similar rates to low risk infants <12 months old.	3	11	NA

9	Broughton et al. 2005.	UK	Prospective multicentre study	None	2002-2004	Cohort of preterm infants (<32 wGA)	Infants born between October and January; congenital abnormalities	Confirmed RSV infection	126	Male 60%	NR	44/126 infants were hospitalized for ≥ 1 RSV infection, equal to a rate of 41/100 children. The RSV group required significantly more admissions, longer hospital admissions, and more GP attendances than the no LRTI group; and significantly longer hospital admissions, more PICU admissions and GP attendances than the RSV negative LRTI group. Number of siblings and maternal smoking in pregnancy were significant risk factors for RSV.	RSV infection is associated with increased respiratory morbidity in preterm infants.	1	10	NA
10	Carbonell et al. 2012.	Spain	Retrospective analysis	None	2005-2007	Data from the FLIP-2 dataset for 32-35 wGA infants cohort study	NR	Confirmed RSV infection	190 RSV 4566 age-matched controls	Male RSV: 60.5% Male controls: 53.2%	Median 76 days	Analysis showed a rate of 4.0% for RSV hospitalization. November was the most common birth month in hospitalized infants. Male gender, maternal smoking during pregnancy, household smokers, month of birth, duration of breast-feeding, number of school-age siblings were all identified as significant risk factors for RSV hospitalization.	The risk of RSV hospitalization appears to persist to at least 5-6 months of age in preterm infants, which has implications for disease management and prevention.	NA	11	NA
11	Carbonell-Estrany et al. 2000.	Spain	Prospective multicentre study	None	1998-1999	Preterm infants (≤ 32 wGA) born and discharged from hospital by March 31, 1999	Prophylaxis	Confirmed RSV hospitalization	584	NR	NR	118/584 infants were hospitalized for respiratory infection: 53 children were RSV positive. Logistic regression showed that GA, CLD, and having school-age siblings were all factors for RSV hospitalization.	The study enabled definition of the influence of specific risk factors that increase the risk of RSV hospitalization in preterm infants.	1	11	NA

12	Carbonell-Estrany et al. 2001.	Spain	Prospective single centre study	None	1999-2000	Preterm infants (≤ 32 wGA) born and discharged from hospital by April 30, 2000	Prophylaxis	Confirmed RSV hospitalization	999	NR	NR	The hospitalization rate for the 2000 season was 13.1%, which was very similar to that of the 1999 season (13.4%). Identified risk factors for RSV included lower GA, age < 3 at the RSV season onset, having school-age siblings and exposure to tobacco smoke.	Spanish hospitalization rates for RSV in very preterm infants was high, and comparable to rates from the previous year.	1	11	NA
13	Carbonell-Estrany et al. 2010.	France	Retrospective analysis	None	2000-2005	Analysis of French data on infants born at 33-35 wGA using risk factors identified from the FLIP-2 study	None	Confirmed RSV infection	231	NR	NR	77 RSV-positive infants and 154 matched controls were analysed. The FLIP-2 model correctly identified 69% of French cases, which increased to 73% when 'number of siblings ≥ 2 years' was substituted for 'number of children at school'.	The model was successfully validated and may aid immunoprophylaxis in French preterm infants (33-35 wGA).	NA	12	NA
14	Carbonell-Estrany et al. 2013.	Multinational	Retrospective analysis	None	NR	Data from several datasets for 32-35 wGA infants from smoking or non-smoking families hospitalized with RSV	NR	Confirmed RSV infection	7247	NR	NR	There were 2.35 times more RSV hospitalizations in infants from smoking vs non-smoking homes. In non-prophylaxed infants, this figure was 2.53, and excess hospitalization fell to 1.03 in prophylaxed infants.	Late-preterm infants from smoking families appear at increased risk of RSV hospitalization.	NA	12	NA
15	Carbonell-Estrany et al. 2015.	Spain	Prospective multicentre study	None	2005-2006	Birth cohort of healthy preterm infants 32-35 wGA	CLD; CPD; hs-CHD; congenital abnormalities of the airways; neuromuscular disease; immunodeficiency; any condition that would preclude long-term survival; prophylaxis	Confirmed RSV infection	113 patients 321 controls	Male RSV: 57.6% Controls: 56.1%	NR	Up to 6 years of age, incidence of wheezing was significantly higher in RSV cases (46.7%) than controls (27.4%) and occurred significantly earlier (4.69 vs 5.29 years). Significantly more RSV cases needed outpatient or emergency care up to 6 years of age compared to controls.	The study confirmed that RSV is associated with subsequent wheezing in infants born at 32-35 wGA.	1	11	NA

16	Cilla et al. 2006.	Spain	Retrospective, single centre study	None	1996-2000	Children <2 years old admitted for acute, community-acquired RSV infection, hospitalized for more than 24 hours	NR	Confirmed RSV infection	357	M: 53.5%	NR	RSV hospitalizations were greater in preterm infants and in those with low birthweight. Hospitalization rate in the second year of life was low. Associations were found between RSV and maternal age, CHD, suburban residence, and birth between July-December.	In a general infant population, low birthweight is an independent risk factor for RSV.	3	10	NA
17	Clark et al. 2000.	UK	Prospective multicentre study	None	1998-2000	High risk infants <6 months old and born <36 wGA OR <24 months and discharged with supplemental oxygen	None	Confirmed bronchiolitis infection	519 infants born <36 wGA 137 < 24 months with oxygen	NR	Median RSV: 4 months Median <24 months with oxygen: 11 months	53 infants total were admitted to hospital during the RSV season, equivalent to 10.4/100 at risk infants. 35 (6.7%) of these infants were from the preterm group. However, RSV positivity was only confirmed in 27 admissions total.	Significantly more admissions occurred in the oxygen group than the preterm group. Careful consideration of risk factors is needed when considering prophylaxis.	1	10	NA
18	Corsello et al. 2008.	Italy	Prospective, single centre study	None	2005-2006	All children <2 years of age hospitalized with symptoms suggesting LRTI or developing LRTI during hospitalization for other reasons	NR	Confirmed RSV infection	164	M:68; F:96	NR	13.7% of admissions were due to RSV. The epidemic peaked in April. RSV correlated with age <3 months, male gender, and low birthweight, and linked to increased hospital	In Sicily, RSV is an important cause of LRTIs in infants. A variety of factors, such as gender, age at hospitalization, and birth weight, may affect the prevalence of RSV.	1	12	NA
19	Deshpande et al. 2003.	UK	Retrospective, multicentre study	None	1996-1999	All children <2 years of age resident within the health authority boundaries with a positive RSV test	Children born in the area that had moved away, and transient residents	Confirmed RSV infection	411	M:F 1.5:1	Median 20.5 weeks	RSV had a rate of 16.3/1000 children. hospitalization rates were higher in preterm infants born <36 weeks and aged <6 months at the start of the RSV season, and children with CLD.	Preterm infants requiring neonatal ventilator assistance, and those discharged on home oxygen therapy are at particular risk of RSV hospitalization. Serious adverse outcomes are rare even among high risk infants.	3	11	NA

20	Doering et al. 2006.	Austria/ Germany	Retrospective analysis	None	1998-1999 2001-2002	Preterm infants (29-35 wGA) admitted to NICU	Prophylaxis; nosocomial infection; positive RSV test >3 days post-admission	Confirmed RSV infection	1158	NR	NR	110/1158 infants were admitted for ARI. 57/1158 was admitted for confirmed RSV (31/57). 48 children were hospitalized for RSV before their first birthday. No significant differences were seen between infants aged 29-32 or 33-35 wGA.	The incidence rate reported here is similar to that reported in other studies in Canada and Austria.	2	9	NA
21	Drysdale et al. 2015.	UK	Prospective single centre study	None	2008-2010	Cohort of preterm infants (<36 wGA) born before the onset of the RSV season	Viral negative LRTI or only RSV positive in second year	Confirmed RSV infection	59	Male RSV: 46%	NR	13/59 infants were admitted for RSV LRTI in the first and second years of life at a median 33 wGA. In the first year of life, the RSV group had more total and respiratory-related hospitalizations and ED visits than infants with other viruses. This was associated with a similar increase in healthcare costs for these infants.	RSV LRTIs are associated with increased healthcare utilization and cost of care in the first and second year.	1	9	NA
22	Eriksson et al. 2002.	Sweden	Prospective, single centre study	None	1987-1998	All children hospitalized for RSV infection	NR	Virologically confirmed RSV infection	1354	M: 54%	Median 2.7 months	RSV epidemics had a regular biannual pattern. Children with risk factors were older and had longer hospitalizations. 76% of patients without risk factors had older siblings. Later hospitalization for wheezing was increased in children hospitalized for RSV infection	The study found lower population rates of RSV hospitalization and complications than previously reported. The seasonal variation and the presence of siblings in the home influenced rates by factors of 2.	3	10	NA
23	Figueras-Aloy J et al. 2004.	Spain	Prospective multicentre study	None	2002-2003	Preterm infants (33-35 wGA) hospitalized for RSV	Infants > 6 months old at the start of the RSV season; nosocomial RSV infection; infants with major comorbidities; prophylaxis	Confirmed RSV infection	186 cases 371 controls	Male RSV: 62.9%	NR	Of 186 RSV cases, 20.5% were admitted to ICU for a median 6 days, and 7.6% received mechanical ventilation. Median hospitalization was 8 days. Logistic regression indicated that risk of RSV infection was	In preterm infants, risk factors can increase the probability of RSV hospitalization.	2	11	NA

												associated with chronological age at the RSV season start; limited breastfeeding; school-age siblings; ≥ 4 people at home; and a family history of wheezing.				
²⁴	Figueras-Aloy J et al. 2008.	Spain	Prospective multicentre study	None	2005-2007	Preterm infants (32-35 wGA)	Infants > 6 months old at the start of the RSV season; nosocomial RSV infection; infants with major comorbidities; prophylaxis	Confirmed RSV infection	202 cases 5239 controls	Male RSV: 59.9%	NR	202/5441 (3.7%) infants were hospitalized for RSV. Of these, 17.8% were admitted to ICU for a median of 5 days. 7.4% received mechanical ventilation. Total RSV hospitalization was a median of 7 days. Logistic regression indicated that risk of RSV infection was associated with chronological age at the start of the RSV season; school-age siblings; day care attendance; exposure to tobacco smoke.	In preterm infants (32–35 wGA), 3 independent risk factors were found to significantly increase the risk of RSV-related infection and hospitalization.	1	11	NA
²⁵	Figueras-Aloy J et al. 2009.	Spain	Prospective multicentre study	None	2005-2007	Preterm infants (32-35 wGA)	Infants > 6 months old at the start of the RSV season; nosocomial RSV infection; infants with major comorbidities; prophylaxis	Confirmed RSV infection	193 cases 4568 controls	NR	NR	193/4761 infants were hospitalized for RSV. were used to determine RSV probabilities. Logistic regression model with 4 risk factors (chronological age at the start of the RSV season ≤ 10 weeks; school-age siblings or day care attendance; maternal smoking during pregnancy; male gender), with R^2 of 0.062 and area under curve of 0.687 ($P < 0.001$). Predictive values for a child with the 4 risk factors were: sensitivity 6.2%, specificity 98.6%,	Use of different risk factor associations to predict hospitalization for respiratory syncytial virus infection in preterm infants 32-35 wGA in Spain is low, but similar to other models.	NA	11	NA

												predictive positive value 16.2%, negative predictive value 96.1%, accuracy 94.9%, positive likelihood ratio 4.581, and negative likelihood ratio 0.951				
²⁶	Fjaerli et al. 2004.	Norway	Retrospective, multicentre study	None	1993-2000	Children <2 years old admitted to hospital with bronchiolitis	NR	Confirmed RSV infection	764	M: 63%	Median 6 months	93% of infants had one hospitalization; 7% had ≥two hospitalizations. Mean annual hospitalization rates were 21.7/1.000 children <1 year and 14.1/1.000 children <2 years. 77 children belonged to ≥1 high-risk groups, e.g. preterm birth, trisomy 21 and CHD.	Hospitalization incidences and outcome of RSV bronchiolitis were in agreement with other studies. Length of hospitalization and morbidity was high in both preterm children, children with CHD and in children with trisomy 21.	3	11	NA
²⁷	Forster et al. 1995	Germany	Prospective single centre study	None	1986-1988	Preterm infants (median 31 wGA)	NR	Confirmed RSV infection	79	Male RSV: 23 Female RSV: 18	NR	41/79 (51.9%) newborns presented with RSV positive specimens. 24/41 reported ≥2 RSV episodes. Most hospitalization measures were similar, except that 70.6% of infants that received mechanical ventilation were RSV positive. Bradycardia was the main presenting clinical symptom of RSV in 75% of cases in preterm infants	Bradycardia may indicate the presence of RSV in preterm infants.	1	10	NA
²⁸	García et al. 2010.	USA	Retrospective, single centre study	None	2002-2007	Children <24 months hospitalized for bronchiolitis	NR	Confirmed RSV infection	5233	NR	6.3 months	RSV was identified in 54.3% of cases. RSV hospitalizations increased from 2002-2007. The RSV epidemic began at the end of October/November, peaked in December/January, and ended in March/April. RSV infections were linked to increased length of	RSV infection and prematurity, regardless of etiology, are independent risk factors for severe bronchiolitis.	3	11	NA

												hospitalization, oxygen, intubation and length of stay in the PICU.				
29	Gijtenbeek et al. 2015.	Netherlands	Retrospective, multicentre study	None	Infants born 2002-2003	Community-based cohort of children aged 43-49 months	Children with major congenital malformations, congenital infections, and syndromes	Confirmed RSV infection	62	M: 65.8%	NR	RSV hospitalization rates were higher in early/ moderate preterm infants compared to full-term infants. Moderate preterm were hospitalized at an earlier age than early preterm infants. Disease severity was equal in all groups. Risk factors for RSV were younger age, lower birth weight, shorter GA and passive smoking.	The rates of RSV hospitalization are higher in moderate preterm than full-term infants and not different between moderate and early preterm. No difference in disease severity was observed.	3	10	NA
30	Gouyon et al. 2013.	France	Prospective/retrospective multicentre study	None	2008-2009	Preterm infants <33 wGA hospitalized with RSV	Prophylaxis; infants with a life expectancy of <6 months; immune deficiency or relevant chronic illness, e.g. CHD	Confirmed RSV infection	249 preterm 249 full term matched controls	Male preterm: 51.4% Male control: 51.0%	Preterm: 5.9 months Control: 6.0 months	Compared to full term controls, preterm infants aged <6 months at the beginning of the RSV season had a 4 times greater risk of hospitalization for RSV bronchiolitis, and 7 times greater risk of hospitalization for all types of bronchiolitis. The risk of multiple hospitalizations was significantly increased in male infants and in those with siblings aged ≥ 2 years	Prematurity significantly increases the risk of bronchiolitis hospitalization.	2	12	NA
31	Greenough et al. 2005	UK	Retrospective review	None	-	Preterm infants <35 wGA hospitalized for RSV infection	-	Confirmed RSV infection	-	-	-	RSV hospitalization in 32- 35 wGA infants and infants born more prematurely who developed CLD are associated with increased and longer hospital admissions, as well as increased	RSV infection in premature infants is associated with chronic respiratory morbidity.	NA	NA	NA

												GP/outpatient visits in the first 2 years after birth. Children born <32 wGA who developed CLD also required more outpatient attendances, prescriptions and respiratory medications between the ages of 2-4 years. Chronic respiratory morbidity occurs in very premature infants, regardless of whether RSV infection necessitates hospitalization.				
³²	Grimaldi et al. 2002.	France	Retrospective, multicentre study	None	1999-2000	Infants hospitalized for RSV bronchiolitis	NR	Confirmed RSV infection	484	M: 59.6%	5 months	19.6% of infants hospitalized for RSV infection were born preterm (<37 wGA). 68.3% were <6 months at admission. Duration of hospitalization was a mean 7.3 days. 31 infants (6.4%) were admitted to PICU, 8 (1.7%) needed mechanical ventilation and 1 (0.2%) died.	At risk' populations for severe RSV bronchiolitis with PICU admission should include all very preterm infants with respiratory distress syndrome. These epidemiological data could provide indications for passive immunoprophylaxis of RSV.	1	8*	NA
³³	Haerskjold et al 2016.	Denmark	Retrospective, multicentre study	None	1997-2003	Children <2 years hospitalized with confirmed RSV infection	NR	Confirmed RSV infection	428,117	NR	NR	Chronic disease, asthma hospitalization prior to RSV hospitalization and siblings were identified as risk factors for RSV. In term children, maternal age, smoking, asthma, single parent status, small for GA, caesarean birth, male gender and day care attendance were also identified as relevant factors.	Stratifying infants by GA groups varies the effects of different risk factors. This may be used to create individual risk profiles for infants.	2	11	NA

34	Hall et al. 2009.	USA	Prospective, multicentre study	None	2000-2004	Children <5 years hospitalized or presenting to the ED with ARTI	NR	Confirmed RSV infection	5067	M: 43-47%	NR	18% of patients had RSV, equating to 20% of hospitalizations, 18% of ED visits and 15% of doctors' office visits. Prematurity and young age was identified as independent risk factors. Estimated rates of RSV office visits were x3 that of EDs	RSV infection is associated with substantial morbidity in US children via in- and out-patient settings. Most children with RSV were previously healthy: control strategies targeting only high-risk children will have limited effect on total disease burden.	1	11	NA
35	Hall et al. 2013.	USA	Prospective, multicentre study	None	2000-2005	Children <2 years hospitalized with confirmed RSV infection	NR	Confirmed RSV infection	2149	M: 56.7%	NR	26% of ARI admissions analysed were due to RSV, with a rate of 5.2/1000 children. Infants aged <1 month had the highest rate of hospitalization: 25.9/1000.	Young infants are at greatest risk of RSV hospitalization. Four fifths of RSV-hospitalized infants were previously healthy.	1	11	NA
36	Hampp et al. 2011.	USA	Retrospective, Florida Medicaid claims data	Costs	2004-2005	Infants ≤6 months born at ≤32 wGA and infants <2 years with CLD, CHD, or neither co-morbidity	NR	RSV infection	159,790	NR	NR	RSV hospitalization rate /1000 (without prophylaxis): premature only, 42.1; CLD only, 25.5; CHD only, 36.3/1000; CLD and premature, 65.7; CHD and premature, 80.4; CLD and CHD, 56.7; any indication for prophylaxis, 29.2; no indication for prophylaxis: 12.5	[Cost of immunoprophylaxis with palivizumab far exceeded the economic benefit of preventing hospitalizations, even in infants at highest risk for RSV infection]	3	10	NA
37	Handal et al. 2000.	USA	Prospective; Texas-Mexico border	RSV immune globulin	-	-	-	RSV bronchiolitis	-	-	-	-	Small premature infants were at the greatest risk of hospitalization; preterm infants and then term infants followed. Prophylaxis does not necessarily prevent RSV bronchiolitis but may reduce the severity of the pulmonary disease	1	-	NA

38	Heikkinen et al. 2005.	Finland	Retrospective, single centre study	None	1991-2000	Birth cohort of all children born alive in a tertiary care university hospital	Prophylaxis	Confirmed RSV infection	35,811	NR	NR	691 of analysed infants had CLD or were born ≤ 32 wGA. RSV infection rate was 7.1% in infants born at ≤ 28 wGA and 6.8% in infants born at 29-32 wGA. Children born ≤ 32 wGA or with CLD were responsible for 6.6% of RSV cases.	The rates of RSVH hospitalization in preterm infants were substantially lower than reports from other countries.	3	11	NA
39	Helfrich et al. 2015.	USA	Retrospective, multicentre study	None	2005-2011	Birth cohort of all children in the Military Health System	High risk infants: ≤ 32 wGA, hs-CHD, CLD, congenital anomalies, cystic fibrosis, neuromuscular disease, immunodeficiency, Down syndrome; prophylaxis	Confirmed RSV infection	599,535 (25,890 (33-36 wGA)	Total Male: 51% Preterm male: 53%	Total: median 3.3 months Preterm: median 3.2 months	Preterm infants accounted for 8.5% of the total RSV hospitalizations. The incidence rate of RSV hospitalization was higher in preterm than full term infants (12.1 vs 7.8/1000 person-years). Preterm infants had longer hospital stays and required more respiratory support than term children.	Preterm birth between 33-36 wGA is a risk factor for RSV infection and hospitalization.	3	11	NA
40	Hervás et al. 2012.	Spain	Retrospective, single centre study	None	1995-2006	Children < 2 years hospitalized for acute bronchiolitis	NR	ICD-9 codes for acute bronchiolitis; RSV bronchiolitis; RSV pneumonia; RSV not otherwise specified.	2384	M: 58%	3.9 months	77% of admissions were in infants aged < 6 months. 62.7% of admissions were for RSV bronchiolitis. Most RSV admissions occurred November-March. RSV was associated with longer hospitalization, ICU admission, and oxygen	Preterm infants < 32 wGA, CHD, and atelectasis/condensation were the main risk factors for ICU admission in RSV and non-RSV bronchiolitis. RSV bronchiolitis seems to be a more severe disease than that caused by other viruses.	3	11	NA
41	Horn et al. 2003.	USA	Retrospective, multicentre study	None	1995-1996	Infants ≤ 1 year admitted to hospital for bronchiolitis or RSV pneumonia	Lack of laboratory testing for RSV	Confirmed RSV infection	≥ 37 weeks: 215 < 37 weeks: 89	Male ≥ 37 weeks: 58.1% < 37 weeks: 53.9%	NR	Infants born at 33-35 wGA were shown to require highest resource use for intubation, admission to ICU, and total length of hospitalization. These outcomes were worse than for infants ≤ 37 wGA. Infants born at 36 wGA had similar outcomes to term infants.	Birth at ≤ 35 wGA significantly increases the risk of severe outcomes in infants hospitalized for RSV.	3	10	NA

42	Joffe et al.1999.	USA	Retrospective, multicentre study	None	1992-1996	Cohort of preterm infants ≤36 weeks neonatally discharged from NICU	Diagnosis of CHD; cystic fibrosis; immunodeficiency	ICD-9 codes for respiratory issues with secondary confirmation of RSV	1,721	Male 55.7%	NR	3.2% of infants (55/1721) were hospitalized for RSV. RSV-hospitalized infants were more likely to be ≤32 wGA at birth; to have required ≥28 days supplemental oxygen in the NICU; to have had a lower birth weight; to have needed more mechanical ventilation in the NICU; and to have been initially discharged from the NICU from September - November.	Most preterm infants in this cohort were at lower risk of RSV hospitalization than previous studies in other populations have suggested.	3	11	NA
43	Korsten et al. 2016.	Netherlands	Prospective, multicentre study	Risk-scoring tool	2008-2015	Cohort study and validation in late preterm infants	NR	Confirmed RSV infection	181	NR	NR	181 late preterm infants were hospitalized within the first year of life for RSV infection. Day care attendance and/or siblings; birth between 14th August and 1st December; neonatal respiratory support; limited breastfeeding; and maternal atopy were all identified as predictors of RSV hospitalization	This clinical prediction model can be used to predict RSV hospitalization in infants born at 32-35 wGA.	2	11	NA
44	Lanari et al. 2002.	Italy	Prospective, multicentre study	None	1999-2000	Infants <2 years hospitalized for LRTI	NR	Confirmed RSV infection	1232	M: 59.4%	Median 5 months	40.6% of infants were RSV-positive. A high proportion of subjects had low birth weight and low GA. The peak of the RSV epidemic occurred in February, with lowest prevalence in November. A higher rate of RSV infection was found in patients ≤33 or 34–35 wGA. RSV infection was associated with more severe respiratory impairment.	RSV is an important cause of LRTI in Italy. GA, birth order, birth weight, and exposure to tobacco smoke affected the prevalence and severity of RSV-related disease.	1	11	NA

45	Lanari et al. 2011.	Italy	Prospective, multicentre study	None	2009-2010	Cohort study of 33-34 wGA infants compared against 35-37 wGA and \geq 38 wGA infants	None	Confirmed LRTI infection	697	NR	NR	29/697 infants were hospitalized for LRTI within a mean of 6 months of follow-up. Risk of hospitalization was non-significantly higher in 33-37 wGA infants. LRTI hospitalization was significantly increased by limited breast feeding, and significantly increased during the RSV season.	Individual and environmental characteristics may affect the risk of hospitalization for LRTI in preterm infants.	2	12	NA
46	Lanari et al. 2013.	Italy	Prospective, multicentre study	None	2011	Cohort study of \leq 33 wGA infants	None	Confirmed bronchiolitis infection	1,814	Male 51.7%	NR	Among enrolled newborns, 22.9% were 'never breastfed'; in the breastfed group, 65% were 'exclusively breastfed' and 35% were 'breastfed with associated milk formula'. At 12 months old, risk of bronchiolitis hospitalization was significantly higher in the 'never breastfed' group. 'Breastfed associated with formula milk' and 'exclusively breastfed' groups had similar risks of hospitalization.	Breastfeeding, even alongside formula milk, reduces the risk of bronchiolitis hospitalization during the first year of life.	1	11	NA
47	Law et al. 2004.	Canada	Prospective, multicentre study	None	2001-2003	Cohort of 33-35 wGA infants followed through their first RSV season	Prophylaxis; no household telephone; non-English/French-speaking	Confirmed RSV infection	1,832	Male 54.7%	NR	140 infants were hospitalized for LRTI, of which 66 were confirmed RSV. Risk factors for RSV were identified as day care attendance; birth between November and January; presence of pre-school aged siblings; low birth weight; presence of \geq 2 smokers in the household; households of $>$ 5 people; family history of eczema.	Specific environmental factors may identify 33-35 wGA infants at greatest risk of RSV hospitalization.	1	11	NA

48	Leader & Kolhase. 2003.	USA	Retrospective, multicentre study	None	1997-2000	Infants <1 year hospitalized with bronchiolitis or pneumonia during the RSV season	NR	ICD-9 codes for bronchiolitis or pneumonia	718,008 ED visits	M: 56%	76% <6 months	718,008 ED visits for LRTI during the RSV season (equal to a rate of 22.8/1000) were recorded from 1997-2000, and 29% were admitted. RSV bronchiolitis was the leading cause of hospitalization. Low birth weight and prematurity significantly increased RSV mortality rates.	RSV is a major cause of infant morbidity and mortality. Severe RSV is highest among infants of black mothers and Medicaid-insured infants. Prematurity and low birth weight significantly increase RSV mortality rates.	2	11	NA
49	Leader et al. 2003.	USA	Prospective, multicentre study	None	2000-2001	Preterm (33-35 wGA) infants <1 year hospitalized for confirmed RSV	Prophylaxis; enrolment in a clinical trial; non-English/Spanish speaking	Confirmed RSV infection	Preterm: 48 Full term control: 36	Preterm male: 58% Control male: 44%	Preterm: 4 months Control: 4.2 months	Preterm infants had a significantly longer hospitalization and were significantly more likely to be African American and of a lower weight than full term infants. Total average economic burden per admission was \$4517.07 for preterm and \$2135.30 for full-term infants, including the value of lost productivity but excluding inpatient bills and lost income.	The economic burden of RSV appears heavier for infants born at 33-35 wGA than for full-term infants.	2	11	NA
50	Leidy et al. 2005.	USA	Prospective, multicentre study	None	NR	Children ≤30 months with a history of prematurity (≤35 wGA) hospitalized for RSV	NR	Confirmed RSV infection	RSV: 46 Matched control: 45	Male: 51%	10.2 months	Mean RSV hospitalization was 5.8 days. 76% received supplemental oxygen and 60% were monitored for apnoea. Caregivers of RSV-infected children reported more stress, greater anxiety, poorer health, and poorer family health and functioning. Caregivers of RSV-infected children reported the children's health as significantly poorer and were personally more	RSV hospitalization creates significant distress for infants, caregivers, and families, with some effects extending up to 60 days after discharge.	2	10	NA

												anxious, compared with control subjects up to 60 days post-discharge.				
51	Liese et al. 2003.	Germany	Prospective, multicentre study	Prematurity	1998-2000	Infants with a GA of <35 weeks previously admitted to neonatal intensive care	NR	Confirmed or probable RSV infection	717	M: 52.3%	NR	The risk of subsequent RSV infection in preterm infants released from NICU was 5.2%. This increased to 15% in preterm infants with CLD. Independent risk factors for RSV were male gender, CLD, discharge between October-December, day care attendance of siblings.	Risk of rehospitalization for RSV in preterm infants in Germany is low.	3	11	NA
52	López Guinea et al. 2007.	Spain	Retrospective, single centre study	None	1994-2006	All infants admitted to PICU for severe bronchiolitis	NR	Confirmed RSV infection	284	NR	NR	74% of 284 patients were RSV positive. A total of 68% percent of all patients had at least 1 risk factor for severe bronchiolitis, which was predominantly age <6 weeks or prematurity.	Most infants admitted to PICU for severe bronchiolitis are healthy infants with the risk factor of young age.	2	10	NA
53	Makari. 2009	USA	Retrospective analysis	Costs	-	Preterm infants hospitalized for RSV	-	-	-	-	-	Premature infants are at higher risk of RSV infection due to lack of antibodies and insufficient lung development	Premature infants are more likely to be hospitalized for RSV and experience longer duration of hospitalization, which is costly.	NA	NA	NA
54	Méndez Rubio et al. 2010	Spain	Prospective, multicentre study	None	2006-2007	Cohort of preterm infants (32-35 wGA) from the FLIP-2 study	NR	Confirmed RSV infection	216	NR	NR	71/216 respiratory hospitalizations occurred during the study period. Risk factors included triplet births, and living in homes with >5 inhabitants. Conversely, infant health-related QoL was associated with higher GA, having siblings aged 0-3, having received recommended prophylaxis, low caregiver overload,	Respiratory hospitalizations are not associated with infant health-related QoL, the effects of caregiver health-related QoL were relevant.	2	11	NA

												higher caregiver health-related QoL, and lack of caregiver absence from work for childcare.				
55	Nielsen et al. 2003.	Denmark	Retrospective, multicentre study	None	1990-1994	Children <2 years admitted with confirmed RSV infection	NR	Confirmed RSV infection	1252	M: 58.9%	NR	The average risk of RSV hospitalization during the first 2 years of life was 1.9%. Mean hospital stay was 4 days, decreasing slightly with increasing age. There was a sharp peak in incidence from December-March every year. Age, sex, birth month, GA, birthweight, presence of a sibling up to 5 years older, and maternal smoking during pregnancy were identified as risk factors for RSV.	90% of cases and 80% of controls had one or more risk factors. Several factors were found to increase the risk of RSV hospitalization, but all effects were small and no single specific factor was identified to explain RSV hospitalization of the minority of children.	3	11	NA
56	Olabarrieta et al. 2015.	Spain	Prospective, multicentre study	None	2011-2012	Cohort of preterm (32-33; 34-36 wGA) and term infants	NR	Confirmed RSV infection	Preterm: 143 Term: 1858	Male hospitalized: 60% Male non-hospitalized: 50.5%	32-33 wGA: 3.9 months 34-36 wGA: 3.6 months Term: 2.8 months	30/143 (20.9%) of preterm infants were hospitalized for respiratory infection compared to 129/1858 (6.9%) of term infants. 83% of admitted preterm infants had a viral infection, of which the majority (76%) were RSV. Epidemiology between preterm and term infants was not dissimilar.	The risk of respiratory admissions during the first year of life is up to 3.6 times higher in preterm infants.	2	11	NA
57	Paes et al. 2009.	Canada	Prospective, multicentre study	Risk-scoring tool	2005-2008	Preterm infants (33-35 wGA) < 6 months of age at the beginning of the RSV season	Concurrent enrolment in other prophylaxis studies	Confirmed RSV infection	430	Male: 55.6%	NR	All infants received low, medium, or high risk scores, after which 78 moderate and high risk infants received a course of palivizumab. In total, 7 infants became RSV-positive and 5 low risk infants were hospitalized. No statistical difference in	The risk scoring tool is relevant for guiding RSV prophylaxis into high-risk groups and avoiding prophylaxis in low-risk infants.	NA	11	NA

												hospitalizations between risk groups was seen.				
58	Papenburg et al. 2012.	Canada	Prospective, single centre study	Comparison of viral infection	2006-2010	Cohort of infants <35 months old either presenting as outpatients or hospitalized for acute RSV.	Symptoms lasting >7 days at recruitment; hospitalization in the previous 14 days; lack of nasopharyngeal aspirate taken within 24 hours of presentation.	Confirmed RSV infection	734	Male 58-61%	Hospital: 51.5% <6 months Clinic: 32.1% 6-11 months	hMPV was identified in 58/305 outpatients (19.0%) and 69/734 hospitalized children (9.4%), vs. RSV (48.2% and 63.6%, respectively). Age <6 months and household crowding were associated with hMPV hospitalization: risk factors for severe hMPV disease were female sex, prematurity, and genotype B infection. RSV infections were affected by age <6 months, comorbidities, and household crowding; breastfeeding and viral coinfection were protective. Age <6 months and preterm birth were associated with severe RSV cases among hospitalized children.	Risk factors for severe hMPV and RSV infection vary slightly, which may inform viral prevention strategies.	2	11	NA
59	Pedersen et al. 2003.	Denmark	Retrospective, multicentre study	None	1994-1995	Infants born <28 wGA or <1000 g birth weight who were discharged alive and hospitalized during the first 2 years of life.	NR	Confirmed RSV infection	240	RSV positive males: 53.5%	10.5 months	18% (43) of infants analysed were RSV-positive. 16% of infants without CLD and 30% of infants with CLD were RSV positive. 38% of RSV positive infants required ventilator support. Mean length of stay for RSV admission was 10.8 days	The rehospitalization rate in very preterm infants, particularly in infants with CLD, should be used to inform prophylaxis practices.	3	10	NA
60	Pezzotti et al. 2009.	Italy	Retrospective, multicentre study	None	2000-2006	Cohort of preterm infants (<36 wGA) born in the study catchment area,	Death; incomplete records	ICD-9 codes for bronchiolitis	2,407	Bronchiolitis males: 62%	64% < 6 months	137/2407 preterm infants were hospitalized with bronchiolitis, equal to an incidence rate of	The incidence rate and risk factors reported here are similar to that reported in other countries.	2	11	NA

						limited to bronchiolitis hospitalization within the first 18 months of life						4.70/100 person-years. Bronchiolitis incidence was higher <6 months of age, and decreased with age. The following risk factors were identified: male gender; low birth weight ($p < 0.01$), <32 wGA; Apgar score ≤ 7 ; BPD.				
⁶¹	Piñero Fernández et al. 2012.	Spain	Prospective, single centre study	None	2008-2009	Infants <18 months hospitalized for bronchiolitis during the peak season	Infants with previous episodes of bronchiolitis	Confirmed RSV infection	235	Male 53.6%	Mean 3.4 months	RSV was the most commonly identified cause of bronchiolitis (56.4%). Risk factors for bronchiolitis hospitalization, hospitalization during and the use of oxygen therapy included maternal smoking during pregnancy; lack of breastfeeding; prematurity.	The majority of bronchiolitis admissions occurred during the first 5 months of life. Infants whose mothers smoked during pregnancy had a worse clinical outcome.	2	10	NA
⁶²	Pruikkonen et al. 2014.	Finland	Retrospective, single centre study	None	2007-2008	Infants < 6 months that visited the ED for dyspnoea or wheezing during a respiratory infection.	Patients that did not show symptoms of respiratory infection or who had a confirmed diagnosis of pneumonia or sepsis	ICD-10 codes for bronchiolitis, bronchitis, asthma, and obstructive breathing	332	Male requiring major medical intervention 55%	NR	314 infants were hospitalized for bronchiolitis, 7% of whom were preterm infants. RSV was identified in 92% of patients requiring major medical intervention. Each 1% increase in initial oxygen saturation value was associated with a decreased risk of major medical intervention.	Infants under 6 months of age with bronchiolitis were most likely to need major medical intervention in the first 5 days after disease onset.	3	10	NA
⁶³	Resch B et al. 2006.	Austria	Prospective/retrospective, multicentre study	None	2001-2003	Cohort of preterm infants (29-32 wGA) born between 1 June 2001 - 31 December 2002.	NR	Confirmed RSV infection	801	Male 53%	NR	104/801 patients were hospitalized due to respiratory infection. 34.6% (36 infants) of hospitalizations were RSV-related. The overall RSV hospitalization rate was 4.5%, rising to 5.7% in infants ≤ 5 months. 3/90 (3.3%) infants with adequate palivizumab prophylaxis had RSV	The high number of inadequate or incomplete courses of palivizumab prophylaxis administered in our observational study indicates further efforts are required in order to improve compliance.	2	10	NA

												compared to 12/148 (8.1%) with inadequate prophylaxis.				
⁶⁴	Rietveld et al. 2004.	Netherlands	Prospective, multicentre study	Costs of RSV	1996-1997 1999-2000	Infants <1 year (<2 years with BPD) hospitalized for severe RSV disease	NR	Confirmed RSV infection	3,458	Male 58.7%	50.2% < 3 months	Of the 3548 infants hospitalized for RSV, those with prematurity or BPD were significantly more likely to require admission to the ICU and to receive a longer hospitalization. In all patients, mean duration of hospitalization and accompanying RSV hospitalization costs increased with lower GA (€5555; ≤28 wGA), lower birth weight (€3895; ≤2500 g), BPD (€5785) and young age (€4730; first month of life).	RSV hospitalization costs are substantial, particularly in high risk groups.	3	10	NA
⁶⁵	Rossi et al. 2007.	Italy	Retrospective, multicentre study	None	2000-2004	Children <4 years hospitalized for RSV LRTI	Children who received prophylaxis	Confirmed RSV infection	145	M: 42.1%	Median 3.5 months	Bivariate analysis identified 7 risk factors for RSV hospitalization: number of children in the family, chronological age at RSV season onset, birth weight and GA, birth order, day care attendance, previous RSV infections. Logistic regression identified 3 risk factors: chronological age at RSV season onset; birth weight; birth order.	Independent from the RSV seasonality, specific host/environmental factors can be used to identify children at greatest risk for hospitalization for RSV infection.	2	12	NA
⁶⁶	Sala et al. 2015.	USA	Retrospective, single centre study	None	2008-2011	Children <2 years admitted with bronchiolitis	None	Clinical diagnosis of bronchiolitis	734	Male 56%	Median 95 days	78% of infants hospitalized for bronchiolitis had a viral or bacterial pathogen, with RSV the most common. 22% of these were admitted to ICU:	During acute bronchiolitis infections, younger children and those with a history of prematurity were more likely to be admitted to the ICU with severe	3	10	NA

												preterm infants and younger infants were significantly more likely to be admitted to the ICU than term and/or older infants. Conversely, there was no significant difference in hospitalization duration or need for mechanical ventilation by age or GA.	disease.			
67	Sampalis et al. 2008.	Canada/ Spain	Retrospective analysis	Validation of a risk-scoring tool	2001-2003	Data from the FLIP dataset for 32-35 wGA infants cohort study	None	Confirmed RSV infection	557	Male 57.3%	NR	The RSV risk-scoring tool included 7 risk factors and cut-off scores of 0–48, 49–64, and 65–100 for low-, moderate-, and high-risk subjects. For the Canadian cohort, sensitivity in predicting RSV hospitalization was 68.2%, with 71.9% specificity. With the FLIP data set, the tool had lower accuracy (61.3% sensitivity; 65.8% specificity) but showed significant positive association with increased risk for RSV hospitalization.	The RSV risk scoring tool accurately identified 33–35 wGA infants at increased risk for RSV hospitalization in a Canadian cohort. External validation with Spanish data further confirmed that the scoring tool is appropriate for the estimation of RSV hospitalization risk.	NA	11	NA
68	Sampalis. 2003.	Canada	Retrospective, multicentre study	None	1997-2000	Cohort of preterm infants (32-35 wGA) hospitalized with RSV infection	Congenital abnormalities; BPD	ICD-9 codes for RSV pneumonia or RSV bronchiolitis	Preterm: 2415 Age-matched control: 20,254	Male RSV: 46%	7.7 months	RSV hospitalization resulted in significantly higher rates of further hospitalization, physician attention, and outpatient care; and increased special care and respiratory therapy visits compared to the control cohort.	RSV hospitalization in otherwise healthy preterm infants is related to an increase in subsequent use of healthcare resources.	2	12	NA
69	Shefali-Patel et al. 2012.	UK	Retrospective, multicentre study	None	2000-2007	Healthcare utilization of preterm infants (32-35 wGA) up to 2 years of age	Major congenital abnormalities; death before discharge	Confirmed RSV infection	RSV: 20 Other RTI: 30 No respiratory admission	NR	NR	2,066 infants were identified, of which 158 were analysed. An RSV rate of 2% (42/2,066 eligible infants) was reported. Healthcare utilization was	RSV hospitalization in moderately preterm infants is associated with increased health-related cost of care.	2	12	NA

									ns: 108			significantly greater in the RSV vs. non-respiratory group for hospital admissions and duration of admission, PICU admission and ED visits. Healthcare utilization was not significantly different in the RSV vs. the other respiratory group, except for a trended increase in duration of hospitalization. Total healthcare utilization costs were significantly higher in RSV compared to both other groups.				
⁷⁰	Sheridan-Pereira et al. 2016.	Ireland	Prospective, multicentre study	None	2011-2014	Birth cohort of preterm infants (32-26 wGA)	Prophylaxis; significant maternal morbidity; language barrier	Confirmed RSV infection	1807	Male RSV: 56.9%	NR	116 infants were hospitalized for respiratory illness during the first year of life. 69.9% of 93 tested were identified as RSV positive, resulting in an overall RSV rate of 3.6% (65/1807). 18.5% (12 infants) of RSV-positive patients were admitted to ICU, and 11 infants were given mechanical ventilation. 5 risk factors for RSV were identified: older siblings; neonatal respiratory morbidity; Caucasian ethnicity; family history of asthma; and birth from 15th July-15th December.	Neonatal respiratory morbidity and Caucasian ethnicity were identified as population-specific risk factors for RSV in Ireland.	1	11	NA
⁷¹	Silvestri et al. 2016.	Italy	Retrospective analysis	None	2000-2004	Preterm infants <35 wGA and <4 years old from the Osservatorio study database	Missing values; age >4 years at enrolment; enrolment outside of the RSV season; prophylaxis	Confirmed RSV infection	100	Male hospitalized: 51.06% Male non-hospitalized: 48.94%	NR	68% of 100 children evaluated were ≤12 months at the time of RSV infection; 70% were 32-<35 wGA. The proportion of hospitalized/non-hospitalized infants	Preterm infants <12 months of age are particularly vulnerable to RSV infection, as shown by the hospitalization ratio and frequency of RSV positive infection.	3	11	NA

												decreased with increasing age. A positive hospitalized/ not-hospitalized ratio was found in all wGA groups in ≤6 month-age infants, despite a low RSV positive frequency in the 29- <32 and 32- <35 wGA group.				
72	Simões et al. 2008.	Multinational	Retrospective analysis	Risk-scoring tool	2002-2003	Data from the FLIP dataset for 32-35 wGA infants cohort study	NR	Confirmed RSV infection	RSV:183 Age-matched controls: 371	Male hospitalized: 62.9-90.0% Male non-hospitalized: 49.6-54.2%	NR	A step-wise reduction and recalculations of some variables produced a final model consisting of 7 risk factor variables for RSV infection: birth ± 10 weeks of RSV season start, birth weight, breast feeding for ≤2 months, siblings ≥2 years, family atopy, family wheeze, and gender. The discrimination of this model was 71%.	This robust model based on 7 risk factors is able to predict which preterm infants born between 33–35 wGA are at highest risk of RSV hospitalization.	NA	11	NA
73	Simões et al. 2011.	Multinational	Retrospective analysis	Risk-scoring tool	2000-2004	Preterm infants <35 wGA from the Osservatorio study database	NR	Confirmed RSV infection	Hospitalized: 34 Non-hospitalized: 30	Male hospitalized: 47.1-62.9% Male non-hospitalized: 46.7-54.2%	NR	Applying the FLIP coefficients using Italian data resulted in correct classification in 68% of cases.	The Italian data confirms the model's predictive ability to identify preterm infants at risk of RSV hospitalization.	NA	12	NA
74	Simões et al. 2015.	USA	Prospective, multicentre study	None	2009-2011	Preterm infants (32-35 wGA) <6 months old	Prophylaxis	Confirmed RSV infection	1642	NR	NR	57/1642 preterm infants were hospitalized with confirmed RSV infection, of which 9 were admitted to ICU. Infants admitted to ICU had a significantly lower mean age than infants not admitted to ICU.	These data suggest that young age is the most important risk factor associated with the RSV ICU admission among 32–35 wGA infants hospitalized for RSV.	NA	NA	NA
75	Simon et al. 2008.	Germany	Prospective, multicentre study	None	1999-2005	Children hospitalized with RSV infection	NR	Virologically confirmed RSV infection	1,568	M: 56.7-58.3%	Median 113-160 days	Of the confirmed RSV cases, 6% were nosocomial and 94% were community acquired. A significantly higher proportion in the nosocomial group had	This study confirms the increased risk of a severe clinical course in nosocomially acquired RSV infection.	1	11	NA

												additional risk factors e.g. prematurity, CLD, history of mechanical ventilation, CHD, and neuromuscular impairment. 55% of nosocomial infections occurred in preterms. Illness severity and total mortality was significantly higher in the nosocomial group.				
⁷⁶	Stensballe et al. 2010.	Denmark	Prospective, multicentre study	None	1997-2003	Preterm infants (33-35 wGA) <18 months old	CLD	Confirmed RSV infection	2529	NR	NR	139/2529 infants (5.5%) were hospitalized for RSV infection. Danish data were used to validate the European Predictive Model: the diagnostic accuracy was 65.9%. Removal of 'atopy' as a variable improved classification to 68.1%.	In countries like Denmark without RSV prophylaxis guidelines for premature infants and where the use of RSV prophylaxis is based on individual judgment, a risk-scoring model might improve the use and efficacy of RSV prophylaxis.	NA	NA	NA
⁷⁷	Stevens et al. 2000.	USA	Retrospective, multicentre study	None	1992-1996	Cohort of preterm infants (≤32 wGA) followed to 1 year of corrected age	NR	Confirmed RSV infection	1029	NR	NR	78/1029 preterm infants were hospitalized for RSV infection for a mean duration of 5.9 days. 12 infants were admitted to PICU. 94% of admissions occurred between December-March. The incidence of RSV increased with decreasing GA (13.9% in ≤26 wGA vs 4.4% in 30-32 wGA infants). Analyses showed that RSV prophylaxis would increase net cost of care across the preterm population.	RSV hospitalization varied markedly by subgroup.	2	10	NA
⁷⁸	Stewart et al. 2009.	USA	Retrospective, multicentre study	None	2001-2006	Cohort of preterm infants ≤36 wGA and /or ≤2499 g at birth: infants with RSV were matched with	NR	ICD-9 codes for RSV LRTI or unspecified bronchiolitis or pneumonia	RSV: 2995 Non-RSV: 2995	Male RSV: 59.4% Male non-RSV: 58.7%	NR	Infants with RSV LRTI had significantly higher hospitalization rates (27.6 vs. 10.6%), ED visits (21.0 vs. 9.8%), antibiotic use (75.2 vs. 54.0%), and	Bearing in mind such limitations as undiagnosed RSV infection, RSV LRTI in preterm infants during the first year of life is linked to increased	2	12	NA

						infants without RSV						oxygen use (6.6 vs. 4.1%) compared to controls. RSV infants had higher rates of hospitalization (385/1000 RSV LRTI infants vs. 130/1000 controls) and ED visits (383/1000 RSV LRTI infants vs. 180/1000 controls). Costs were significantly higher among RSV than control infants.	healthcare costs.			
⁷⁹	Straňák et al. 2016.	Multinational	Prospective, multicentre study	None	2013-2014	Preterm infants (33-35 wGA) ≤ 6 months of age at the onset of the RSV season	BPD; CLD; hs-CHD; immunoprophylaxis	Confirmed RSV infection	2390	Male RSV: 57.8% Male non-RSV: 63%	NR	204/2390 infants were hospitalized for LRTI. 64/204 infants were confirmed RSV positive. The calculated RSV hospitalization rate was 4.1%, rising to 6.1% during the RSV season. The following risk factors were identified as statistically relevant to RSV hospitalization: family smoking; non-hs CHD ; maternal age ≤25 years at delivery; low maternal education; children aged 4-5 years in the home ; age ≤3 months on 1 October; paternal atopy.	This study adds to evidence from single-country studies regarding RSV risk factors in preterm infants.	1	11	NA
⁸⁰	Tsolia et al. 2003.	Greece	Prospective, multicentre study	None	1997-2000	Children < 1 year hospitalized for the first time with bronchiolitis	NR	Confirmed RSV infection	473	M: F 1.8:1	83% < 6months old	61.5% RSV positive cases were identified. 12% of RSV positive infants were preterm. RSV positive infants were significantly more likely to have hypoxemia, crackling rales, hyperinflation and atelectasis. 18/21 infants admitted to ICU was RSV positive.	RSV infection has a significant effect on infant morbidity.	1	10	NA

⁸¹	Underwood et al. 2007.	USA	Retrospective, multicentre study	None	1992-2000	Cohort of preterm infants (<36 wGA) admitted through the first year of life	Unreasonable GA for reported birth weight	ICD-9 codes for principal diagnoses	RSV: 4174	NR	NR	1.6% of preterms and 8.1% of all readmissions were due to RSV infection. RSV hospitalization lasted a mean of 5.6 days.	Preterm infants continue to utilize substantial healthcare services (with associated costs) in the first year after birth.	3	10	NA
⁸²	Van de Steen et al. 2016.	Europe	Retrospective, multicentre study	None	2009-2011	Cohort of infants <1 year hospitalized for LRTI	Duplicate records	Confirmed RSV infection	3474	Total Male: 58.3%	Total: 69.1% <6 months	A rapid RSV test was performed in 3354 (96.5%) cases and was positive in 1423 infants (42.4%). Of the RSV-positive, 18.7% were preterm and 72.7% were otherwise healthy term children. Preterm infants had significantly longer hospitalizations, and required more frequent ICU and oxygen support.	RSV is the cause of a substantial burden in European children; preterm birth is a notable risk factor for RSV hospitalization.	2	11	NA
⁸³	Wang et al. 1995.	Canada	Prospective, multicentre study	None	1993	Children <2 years hospitalized for RSV LRTI; any children hospitalized for RSV LRTI with underlying cardiac disease, pulmonary disease, or immunosuppression	Patients >2 years with only asthma	Confirmed RSV infection	698	NR	9.1 months (median 4.9 months)	Mean hospital stay for RSV was 7 days; 110 patients were admitted to ICU; 63 were given mechanical ventilation; 6 died. Aboriginal race (defined maternally), a history of apnoea or respiratory arrest during the acute illness before hospitalization, and pulmonary consolidation shown via chest radiograph at admission were identified as relevant risk factors.	Patients with underlying diseases and, possibly, those of aboriginal race should be targeted for RSV vaccine trials.	1	11	NA
⁸⁴	Willson et al. 2003.	USA	Retrospective, multicentre study	None	1995-1996	Infants <1 year hospitalized with bronchiolitis or RSV pneumonia	Cost outliers; transferred patients; incompatible data	ICD-9 codes	684	Male: 58%	Mean 3.4 months	79% of hospitalized infants had at least 1 complication. In premature infants this increased to 87% (93% in infants 33-35 wGA). Complications were associated with longer hospitalization, PICU admission, and higher costs.	Complications, particularly in preterm infants, are common in RSV hospitalization and are linked to longer hospitalization outcomes.	3	9	NA

85	Winterstein et al. 2013.	USA	Retrospective, multicentre study	None	1999-2004	Infants <12 months with a sibling <5 years and with no indications for RSV prophylaxis	Indications for prophylaxis, e.g. CLD, CHD, cystic fibrosis, immunodeficiency.	Confirmed RSV infection	Texas: 4000 Florida: 1322	Male: Female (Florida) Male: Female 1.26:1 (Texas)	NR	RSV incidence rates in Florida were 1.5% in term infants and 3.1% in 32-34 wGA preterms (6.2 and 13.5/100 patient years, respectively). RSV incidence rates in Texas were 2.5% in term infants and 4.5% in 32-34 wGA preterms (9.4 and 17.7/100 patient years, respectively). Male gender was a risk factor, and decreasing hospitalization was seen with increasing age. Preterm risk of RSV hospitalization at 4.2 months (Florida) or 4.5 months (Texas) was the same as a term infant's at 1 month of age.	The continued risk of RSV hospitalization at 4+ months of age compared to term infants offers support for age restrictions in RSV prophylaxis guidelines.	3	10	NA
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RSV: respiratory syncytial virus; ARI: acute respiratory infection; LRTI: lower respiratory tract infection; URI: upper respiratory infection; ICU: intensive care unit; NICU: Neonatal intensive care unit; PICU: pediatric intensive care unit; CHD: congenital heart disease; hs-CHD: haemodynamically significant congenital heart disease; CLD: chronic lung disease; BPD: bronchopulmonary dysplasia; GA: gestational age; wGA: weeks' gestational age; hMPV: human metapneumovirus; ED: emergency department; GP: general practitioner; QoL: quality of life; NR: not reported.