THE LANCET

Supplementary webappendix

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Supplement to: Nair H, Nokes DJ, Gessner BD, Dherani M, Madhi SA, Singleton RJ, et al. Global burden of acute lower respiratory infections due to respiratory syncytial virus in young children: a systematic review and meta-analysis. *Lancet* 2010; published online April 16. DOI:10.1016/S0140-6736(10)60206-1

Web Appendix

for

"Global burden of acute lower respiratory infections due to respiratory syncytial virus in young children: a systematic review and meta-analysis"

Table of Contents

Supplementary Panel: Search Strategy in Databases

Medline (Ovid)

1. exp Respiratory Syncytial Viruses/ or Respirovirus Infections/ or exp Respiratory Syncytial Virus Infections/
2. Respiratory Syncitial Virus$.mp.
3. *Respiratory Syncytial Virus, Human/
4. RSV.mp.
5. 1 or 2 or 3 or 4
6. exp Pneumonia, Viral/
7. bronchiolitis.mp. or exp Bronchiolitis, Viral/ or exp Bronchiolitis/
8. exp Respiratory Tract Diseases/ or exp Respiratory Tract Infections/ or acute respiratory illness$.mp.
9. 6 or 7 or 8
10. aetiology.mp.
11. etiology.mp.
12. cause$.mp.
13. 10 or 11 or 12
14. 9 and 13
15. exp Morbidity/
16. exp Mortality/
17. 15 or 16
18. 5 and 14 and 17
19. limit 18 to (humans and "all child (0 to 18 years)"

Embase

1. exp Respiratory Syncytial Pneumovirus/ or Respiratory Syncitial Virus.mp.
2. RSV.mp.
3. 1 or 2
4. exp Respiratory Tract Infection/ or exp Acute Respiratory Tract Disease/ or exp Pneumonia/ or acute respiratory illness$.mp.
5. exp VIRUS PNEUMONIA/
6. exp VIRUS ETIOLOGY/ or exp ETIOLOGY/ or etiology.mp.
7. aetiology.mp.
8. cause$.mp.
9. 6 or 7 or 8
10. 4 and 9
11. 5 and 9
12. 10 or 11
13. morbidity.mp. or exp MORBIDITY/
14. exp MORTALITY/ or mortality.mp. or exp CHILDHOOD MORTALITY/
15. 13 or 14
16. 3 and 12 and 15
17. limit 16 to (human and child)

Global health

1. Human respiratory syncytial virus.od. or Respiratory Syncitial Virus.mp.
2. RSV.mp.
3. 1 or 2
4. respiratory diseases.sh. or acute respiratory illness$.mp.
5. pneumonia.sh.
6. bronchiolitis.mp.
7. 4 or 5 or 6
8. exp morbidity/
9. exp mortality/
10. 8 or 9
11. 3 and 7 and 10

12. limit 11 to yr="1995 - 2009"

CINAHL, WHOLIS and Web of Science
Respiratory Syncytial Virus
OR
RSV
AND
Acute respiratory infection
AND
Children

LILACS, IndMed and SIGLE
Respiratory Syncytial Virus
AND
Children

Supplementary table 1: Characteristics of hospital-based studies included under severe-ALRI in this paper

Location (reference)	Criteria for inclusion in study	Remarks
Gipuzoka, Spain [18]	RSV in NPA, patient's clinical condition warranted hospital admission, discharge diagnosis of ARI	
Kiel, Germany [19]	Diagnosis of ARI, hospitalisation	
Multicentric, Germany [23]	LRTI- croup, bronchitis, bronchiolitis, pneumonia, apnoea>20 sec (in infants <6 months)	0.1 to 2.3% cases had apnoea
Shropshire, United Kingdom [24]	RSV related hospitalisation- positive RSV IF within seven days of admission. Includes diagnosis of bronchiolitis, pneumonia and croup	
Northern Stockholm, Sweden [25]	Hospitalised for virologically conformed RSV infection	12% cases required ICU admission and 2.1% cases required ventilatory support
Southern Austria, Austria [26]	Hospitalisation with viral U/LRTI (classified according to LRI score 0 to 5 for severity)	Mean LRI score was 2.9 corresponding to moderate LRTI with signs of respiratory distress. 3.4% required ICU admission.
United Kingdom [27]	All hospital admissions with ICD codes associated with LRI	
Netherlands [28]	Inpatient data from virological surveillance in patients having LRTI using ICD-9CM codes	
Takhli district, Thailand [32]	All hospital admissions associated with physician diagnosed LRI	64% had pneumonia, 34% had bronchitis and 3% had bronchiolitis
Eastern and Northern New Territories, Hong Kong, China [33]	Patients admitted with respiratory symptoms and RSV detected within 7 days of admission	
Townsville (Queensland), Australia [34]	Hospitalisation with proven RSV bronchiolitis	27% required supplemental oxygen
Monroe and Davidson County, USA [20]	Hospitalised with physician diagnosis of ARI or ARI related condition (pneumonia, bronchiolitis, croup, apnoea, asthma, pharyngitis, paroxysmal cough, Otitis media etc.)	
Milwaukee, USA [36]	Hospitalisation for LRI (all LRI related ICD-9 codes searched)	
Tennessee, USA [37]	Children born between July 1989 and June 1993, enrolled at birth in Tennessee Medicaid and admitted for RSV infection or bronchiolitis	
USA [38]	Hospitalisation for RSV associated illness ICD-9-CM codes 079.6, 466.11, 480.1	
American Indians, Alaskan Natives, USA and Rest of USA [39]	Hospital discharge survey. ICD-9-CM codes 466.11, 480.1, 079.6	
Hawaii, USA [21]	Hospital discharge records with ICD-9-CM codes for RSV, pneumonia or bronchiolitis (466.1, 466.11, 480.1, 079.6)	
Nashville, Rochester and Cincinnati, USA [40]	Hospitalised patients with LRI	95% required supplemental oxygen
Rio de Janeiro, Brazil [41]	Hospitalised patients with LRI	

Supplementary table 2: Limiting factors of studies with unpublished data reporting incidence of RSV-ALRI in under-5 children

Location (Reference)	% of eligible cases not tested for RSV (N)	Reason for not testing	Distance of farthest hamlet from health facility and ease of access
Kilifi birth cohort, Kenya (Nokes et al.)	6 (67/1056)	(1) Rehospitalisation within 14 days; (2) Refused test; (3) Sample lost in lab	Approximately 30 km. Ease of access highly variable. 30 km along coast road may take approximately 45-60min, but 10 km inland may take >1hr
Kilifi hospital study, Kenya (Nokes et al.)	17 (671/3998)	(1) Age 0 days; (2) Diagnosis of neonatal tetanus; (3) Refused RSV test; (4) Discharged or died before test; (5) Not conforming to case definitions 1 & 2	Approximately 30 km. Ease of access highly variable. 30 km along coast road may take approximately 45-60min, but 10 km inland may take >1hr
Manhica district, Mozambique (Roca et al.)	9 (96/1055)	(1) Refused test; (2) Sample less likely to be collected among children >1 year of age, as they followed a different protocol i.e. samples were only collected if admitted; (3) Among admitted, less likely to collect sample if admitted over the night or during weekends	Farthest household is approximately 11 km from the hospital. The road condition is poor and as a result may take approximately 30 minutes to reach by car
Soweto, South Africa (Madhi et al.)	4 (203/4919)	(1) Rehospitalisation within 28 days; (2) Refused test; (3) Discharged or died before test	Urban area- so ease of access not a limitation.
Bandung, Indonesia (Simões et al.)	20 (160/802)	(1)Refused test; (2) Some samples not collected because hospital/laboratory closed on week ends; (3) Older children sometimes did not go to the health centre	Two sites: peri urban site with easy access to health center. Rural site in hilly area with more difficult access. Furthest distance approximately 15km. Roads reasonable, easy access by *ojek* (motorcycle taxi) and transportation was paid for by study.
Lombok, Indonesia (Gessner et al.)	28 (1386/4994)	(1) Critically ill ; (2) Admitted on Friday or Sunday night and discharged / died before sample could be collected	Approximately 30 km. All households are relatively close to a road. Ease of access variable depending upon road condition. Certain roads may be closed during rainy season.
Alaska, USA (Singleton et al.)	22 (241/1107)	(1) Seasonal (e.g. less likely to test in the summer months); (2) Clinical syndrome not likely to be RSV (e.g. croup, lobar pneumonia, URI with fever etc.)	Villages in YK Delta are connected to one another only by airplane, boat or snow machine. Ease of access to hospital fairly good.
Navajo and White Mountain Apache reservations, USA (Epi Study)	30	(1) Evening or weekend admissions; (2) Age >2 yrs	
San Marcos, Guatemala (Bruce et al.)	11 (29/263)	Refused test	

Supplementary table 3: Meta-analysis of incidence rates of RSV-ALRI for children <1 year old

DEVELOPING COUNTRIES	**0-<1 year**	
Passive ascertainment (n=1; meta-analysis not applicable)		
Active ascertainment (n= 5 + 1 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi birth cohort, Kenya (Nokes et al.)	104	83.0, 130.2
Ibadan, Nigeria [22]	116	107.3, 125.4
Mirzapur, Bangladesh [30]	32	20.8, 49.2
Ballabgarh, India [31]	33	15.3, 71.1
Bandung, Indonesia (Simões et al.)	53	40.8, 68.9
San Marcos, Guatemala (Bruce et al.)	158	122.3, 202.8
Pooled estimate	***IR***	***95% CI***
Fixed effects	107	100.1, 114.5
Random effects *(see Supplementary Figure 4)*	74.2	50.2, 109.7
p for heterogeneity	<0.00005	
Active and passive ascertainment (n= 6 + 1 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi birth cohort, Kenya (Nokes et al.)	104	83.04, 130.26
Manhica district, Mozambique (Roca et al.)	43.6	30.39, 62.56
Ibadan, Nigeria [22]	116	107.32, 125.38
Mirzapur, Bangladesh [30]	32	20.83, 49.16
Ballabgarh, India [31]	33	15.32, 71.11
Bandung, Indonesia (Simões et al.)	53	40.8, 68.9
San Marcos, Guatemala (Bruce et al.)	157.5	122.31, 202.82
Pooled estimate	***IR***	***95% CI***
Fixed effects	103.9	97.2, 111.0
Random effects *(see Supplementary Figure 5)*	68.4	46.5, 100.5
p for heterogeneity	<0.00005	
INDUSTRIALISED COUNTRIES	**0-<1 year**	
Passive ascertainment (n=1; meta-analysis not applicable)		

Supplementary table 4: Meta-analysis of incidence rates of RSV-ALRI for children <5 years old

DEVELOPING COUNTRIES		**0-<5year**
Passive ascertainment (n=1; meta-analysis not applicable)		
Active ascertainment (n=2 + 4 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi birth cohort, Kenya (Nokes et al.)	84	67.1, 105.2
Ibadan, Nigeria [22]	94	89.1, 99.1
Mirzapur, Bangladesh [30]	22	14.3, 33.8
Ballabgarh, India [31]	27	13.7, 53.2
Bandung, Indonesia (Simões et al.)	48	41.2, 56.0
San Marcos, Guatemala (Bruce et al.)	128	99.4, 164.8
Pooled estimate	***IR***	***95% CI***
Fixed effects	86.5	82.5, 90.7
Random effects *(see Supplementary Figure 6)*	59.1	40.0. 87.5
p for heterogeneity	<0.00005	
Active and passive ascertainment (n=2 + 5 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi birth cohort, Kenya (Nokes et al.)	84	67.1, 105.2
Manhica district, Mozambique (Roca et al.)	36	27.9, 46.4
Ibadan, Nigeria [22]	94	89.1, 99.1
Mirzapur, Bangladesh [30]	22	14.3, 33.8
Ballabgarh, India [31]	27	13.7, 53.2
Bandung, Indonesia (Simões et al.)	48	41.2, 56.0
San Marcos, Guatemala (Bruce et al.)	128	99.4, 164.8
Pooled estimate	***IR***	***95% CI***
Fixed effects	83.9	80.1, 88.0
Random effects *(see Supplementary Figure 7)*	54.6	37.1, 80.4
p for heterogeneity	<0.00005	
INDUSTRIALISED COUNTRIES		**0-<5 year**
Passive ascertainment (n=1; meta-analysis not applicable)		

Supplementary table 5: Meta-analysis of incidence rates of RSV-severe ALRI for children <1 years old

DEVELOPING COUNTRIES	0-<1 year	
Passive ascertainment (n=6 + 4 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi hospital study, Kenya (Nokes et al.)	11	9.9, 12.2
Manhica district, Mozambique (Roca et al.)	15.7	10.2, 24.1
W. Region, Gambia [29]	17.7	16.1, 19.5
Soweto, S. Africa (Madhi et al.)	10.4	9.4, 11.5
Agincourt, S. Africa [22]	15	9.6, 23.5
Takhli district, Thailand (year 1) [32]	42	33.5, 52.7
Takhli district, Thailand (year 2) [32]	19	14.1, 25.6
Lombok, Indonesia (Gessner et al.)	13.1	12.1, 14.2
E. and N. New Territories, Hong Kong, China [33]	10	9.5, 10.6
Rio de Janeiro, Brazil [41]	47	27.4, 80.6
Pooled estimate	***IR***	***95% CI***
Fixed effects	12.2	11.8, 12.6
Random effects *(see Supplementary Figure 8)*	16.4	13.2, 20.5
p for heterogeneity	<0.00005	
Active ascertainment (n=4 + 0 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi birth cohort, Kenya (Nokes et al.)	13	5.0, 34.0
Ballabgarh, India [31]	14	4.2, 46.4
Bandung, Indonesia (Simões et al.)	17	10.7, 27.0
San Marcos, Guatemala (Bruce et al.)	60.2	40.0, 90.5
Pooled estimate	***IR***	***95% CI***
Fixed effects	30.2	22.7, 40.0
Random effects *(see Supplementary Figure 9)*	22.3	9.4, 52.9
p for heterogeneity	<0.00005	
Active and passive ascertainment (n=10 + 4 Imputed)		
Pooled estimate	***IR***	***95% CI***
Fixed effects	12.4	11.9, 12.8
Random effects *(see Supplementary Figure 10)*	17.9	14.5, 22.2
p for heterogeneity	<0.00005	

INDUSTRIALISED COUNTRIES	0-<1 year	
Passive ascertainment (n=11 + 4 Imputed)		
Individual estimates	***IR***	***95% CI***
Gipuzoka, Spain [18]	25.5	22.9, 28.4
Kiel, Germany [19]	16.3	14.3, 18.5
Multicentric, Germany [23]	28	25.2, 31.1
Shropshire, United Kingdom [24]	28	25.6, 30.6
N. Stockholm, Sweden [25]	14	13.3, 14.8
S. Austria, Austria [26]	12	9.1, 15.8
United Kingdom [27]	28.3	27.9, 28.7
Netherlands [28]	9.5	8.6, 10.5
Townsville, Australia [34]	18	14.6, 22.2
Monroe & Davidson County, USA [20]	12.9	10.6, 15.8

Milwaukee, USA [36]	20	18.6, 21.5
Nashville, Tennessee, USA (Wright et al.)	9.5	5.3, 17.1
Tennessee, USA [37]	63.1	60.2, 66.1
USA [39]	27.4	21.5, 34.9
Nashville, Rochester, Cincinnati, USA [40]	11.1	10.1, 12.2
Pooled estimate	***IR***	***95% CI***
Fixed effects	27.2	26.9, 27.6
Random effects *(see Supplementary Figure 11)*	19	14.6, 24.8
p for heterogeneity	<0.00005	

Supplementary table 6: Meta-analysis of incidence rates of RSV-severe ALRI in children <5 years old

DEVELOPING COUNTRIES	**0-<5 year**	
Passive ascertainment (n=1 + 3 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi hospital study, Kenya (Nokes et al.)	3	2.7, 3.3
Manhica district, Mozambique (Roca et al.)	4.3	2.9, 6.3
W.Region, Gambia [29]	5	4.5, 5.5
Soweto, S. Africa (Madhi et al.)	2.2	2.0, 2.4
Agincourt, S. Africa [22]	9	7.5, 10.8
Takhli district, Thailand (year 1) [32]	12.6	10.1, 15.8
Takhli district, Thailand (year 2) [32]	5.8	4.3, 7.8
Lombok, Indonesia (Gessner et al.)	4	3.7, 4.3
E. and N. New Territories, Hong Kong, China, China [33]	2.5	2.4, 2.6
Rio de Janeiro, Brazil [41]	14	8.1, 24.3
Pooled estimate	***IR***	***95% CI***
Fixed effects	3.3	3.2, 3.4
Random effects *(see Supplementary Figure 12)*	5	3.7, 6.7
p for heterogeneity	<0.00005	
Active ascertainment (n=7 + 3 Imputed)		
Individual estimates	***IR***	***95% CI***
Kilifi birth cohort, Kenya (Nokes et al.)	4	1.5, 10.5
Ballabgarh, India [31]	4	1.7, 9.4
Bandung, Indonesia (Simões et al.)	10	7.1, 14.1
San Marcos, Guatemala (Bruce et al.)	18	12.0, 27.1
Pooled estimate	***IR***	***95% CI***
Fixed effects	10.8	8.5, 13.7
Random effects *(see Supplementary Figure 13)*	8.3	4.4, 15.6
p for heterogeneity	<0.00005	
Active and passive ascertainment (n=8 + 6 Imputed)		
Pooled estimate	***IR***	***95% CI***
Fixed effects	3.4	3.3, 3.5

Random effects *(see Supplementary Figure 14)*	5.6	4.3, 7.4
p for heterogeneity	<0.00005	

INDUSTRIALISED COUNTRIES	**0-<5 year**	
Passive ascertainment (n=10 + 5 Imputed)		
Individual estimates	***IR***	***95% CI***
Gipuzoka, Spain [18]	6.2	5.6, 6.9
Kiel, Germany [19]	5	4.4, 5.7
Multicentric, Germany [23]	8	7.2, 8.9
Shropshire, United Kingdom [24]	8	7.3, 8.7
N. Stockholm, Sweden [25]	4	3.8, 4.2
S. Austria, Austria [26]	4	3.0, 5.3
United Kingdom [27]	8	7. 9, 8.1
Netherlands [28]	3	2.7, 3.4
Townsville, Australia [34]	5	4.1, 6.2
Monroe & Davidson County, USA [20]	3.5	2.9, 4.2
Milwaukee, USA [36]	5.8	5.4, 6.3
Nashville, Tennessee, USA (Wright et al.)	3	1.7, 5.5
Tennessee, USA [37]	19	18.1, 19.9
USA [39]	8	6.5, 9.9
Nashville, Rochester, Cincinnati, USA [40]	3	2.7, 3.3
Pooled estimate	***IR***	***95% CI***
Fixed effects	7.8	7.7, 7.9
Random effects *(see Supplementary Figure 15)*	5.5	4.2, 7.2
p for heterogeneity	<0.00005	

Supplementary table 7: Case fatality rates due to RSV-ALRI in hospitalised children <5 years

Location (Reference)	Study period; no. of RSV seasons	Subjects: age group (setting)	RSV case fatality rate % (N)
	Europe, Western		
Athens, Greece [57]	February 1997 - June 2000; 4 RSV seasons	<1 y (IP)[*]	0.7 (2/291)
Northern Stockholm, Sweden [25]	1987-1998; 12 RSV seasons	<1 y (IP)	0.3 (5/1500)
Multicentric, Germany [23]	November 1999- October 2001; 2 RSV seasons	<4 y (IP)	0.3 (5/701)
Shropshire, United Kingdom [24]	April 1996- March 1999	<2 y (IP)	0.2 (1/497)
Berne, Switzerland [58]	July 1997 - June 2001; 4 RSV seasons	<5 y (IP)	0.2 (1/497)
Freiburg, Germany [59]	April 1997 - March 1999; 2 RSV seasons	<5 y (IP)	0.7 (2/276)
Southern Austria, Austria [26]	November 1999 - October 2000; 1 RSV season	<1 y (IP)	0 (0/58)
Multicentric, Germany [60]	1999 - 2005; 6 RSV seasons	<1 y (IP)	0.5 (6/1162)
Multicentric, Israel [61]	November 2000 - March 2001; 1 RSV season	<1 y (PICU)[†]	4.8 (5/105)
	Sub-Saharan Africa, East		
Kilifi birth cohort, Kenya (Nokes et al.)	January 2002 - May 2005; 3 RSV seasons	<30 months (OP)	0 (0/409)
Kilifi hospital admission, Kenya (Nokes et al.)	January 2002 - December 2007; 5 RSV seasons	<1 y (IP)	2.2 (9/406)
		<5 y(IP)	2.4 (12/510)
Manhica, Mozambique [62]	October 1998 - May 2000	<5 y (IP)	3.4 (4/116)
	Sub-Saharan Africa, West		
Western Region, The Gambia [29]	October 1993 - December 1996; 4 RSV seasons	<2 y (IP)	2 (10/511)
	Sub-Saharan Africa, Southern		
Cape Town, South Africa [63]	June 1995 - August 1996; 2 RSV seasons	<2 y (IP)	2.1
Pretoria, South Africa [64]	November 1994 - October 1995	<5 y (PICU)	14.3 (1/7)
Soweto, South Africa (Madhi et al.)	March 1998 - October 2004; 5 RSV seasons	<1 y (IP)	1.6 (10/633)
		<5 y (IP)	1.3 (11/832)
	Asia, South East		
Takhli district, Thailand [32]	November 1998-February 2001; 2 RSV seasons	<5 y (IP)	0 (0/122)
Lombok, Indonesia (Gessner et al.)	January 2000 - December 2002; 3 RSV seasons	<1 y (IP)	2.1 (13/617)
		<2 y (IP)	1.7 (13/741)
	Asia, East		

[*] IP- In-patient

[†] PICU- Pediatric Intensive Care Unit

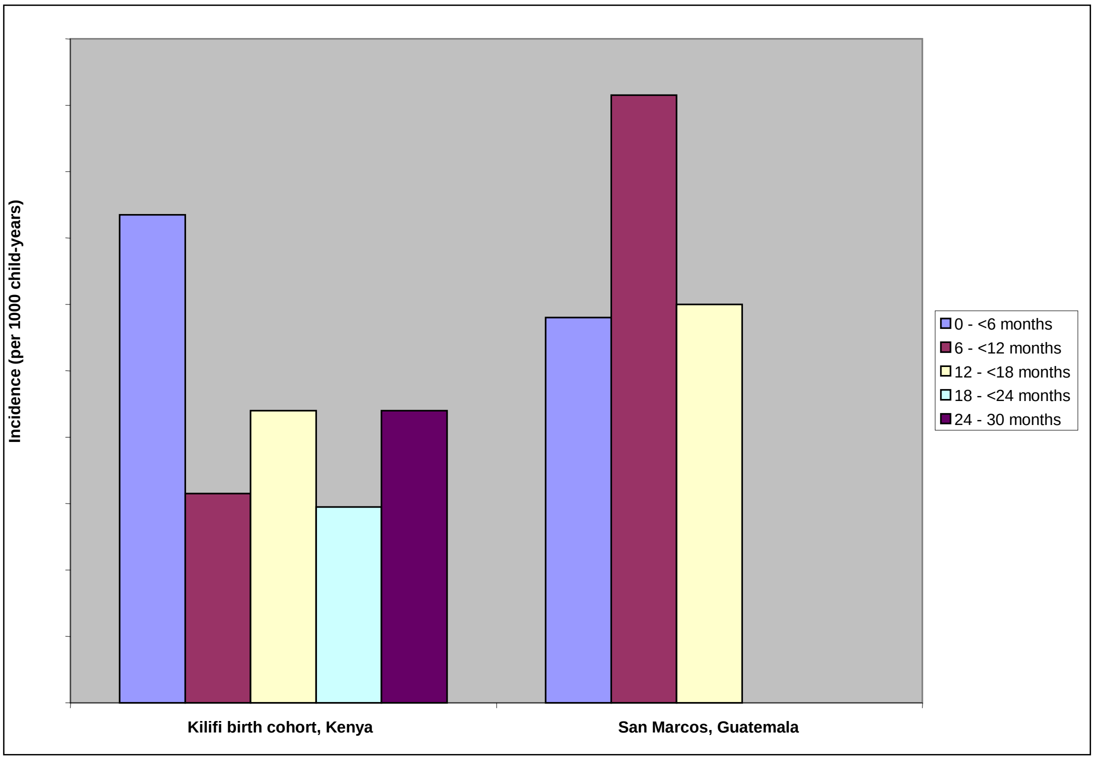
Location (Reference)	Study period; no. of RSV seasons	Subjects: age group (setting)	RSV case fatality rate % (N)
Eastern and Northern New Territories, Hong Kong, China [33]	January 1993 - December 1997; 5 RSV seasons	<5 y (IP)	0.2 (2/1340)
Hong Kong, China [65]	January 2003 - April 2007	<5 y (PICU)	5.9 (1/17)
	Australasia		
Sydney, Australia [66]	May 1997 - October 1999; 3 RSV seasons	<2 y (IP)	0.3 (1/342)
Townsville (Queensland), Australia [34]	January 1997 - October 1999	<1 y (IP)	1.1 (1/88)
	North America, High Income		
Navajo and White Mountain Apache, USA [67]	October 1997-March 2000; 3 RSV seasons	<2 y (IP)	0.1 (1/876)
Alaska, USA (Singleton et al.)	July 2001 - June 2004; 3 RSV seasons	<3 y (IP)	0.4 (1/268)
	Latin America, Southern		
Multicentric, Argentina [68]	April 1993 - December 1994; 2 RSV seasons	<5 y (IP)	1.3 (4/312)
Santiago, Chile [69]	January 1989 - December 2000; 12 RSV seasons	<2 y (IP)	0.1 (1/1337)
Buenos Aires, Argentina 70	May 1991 - December 1992; 1 season	<2 y (IP)	0 (0/61)
	Latin America, Tropical		
Sao Paulo, Brazil [71]	March 1995 - August 1996; 2 RSV seasons	<5 y (IP)	0 (0/100)
Porto Alegre, Brazil [72]	June 1996 - December 1996	<5 y (PICU)	2.8 (2/71)
	Latin America, Central		
Tlaxcala, Mexico [73]	October 1994 - June 1995	<5 y (IP)	0 (0/24)
San Marcos, Guatemala (Bruce et al.)	December 2002 - November 2004; 2 RSV seasons	<18 months (OP)[‡]	0 (0/86)

‡ IP- In-patient

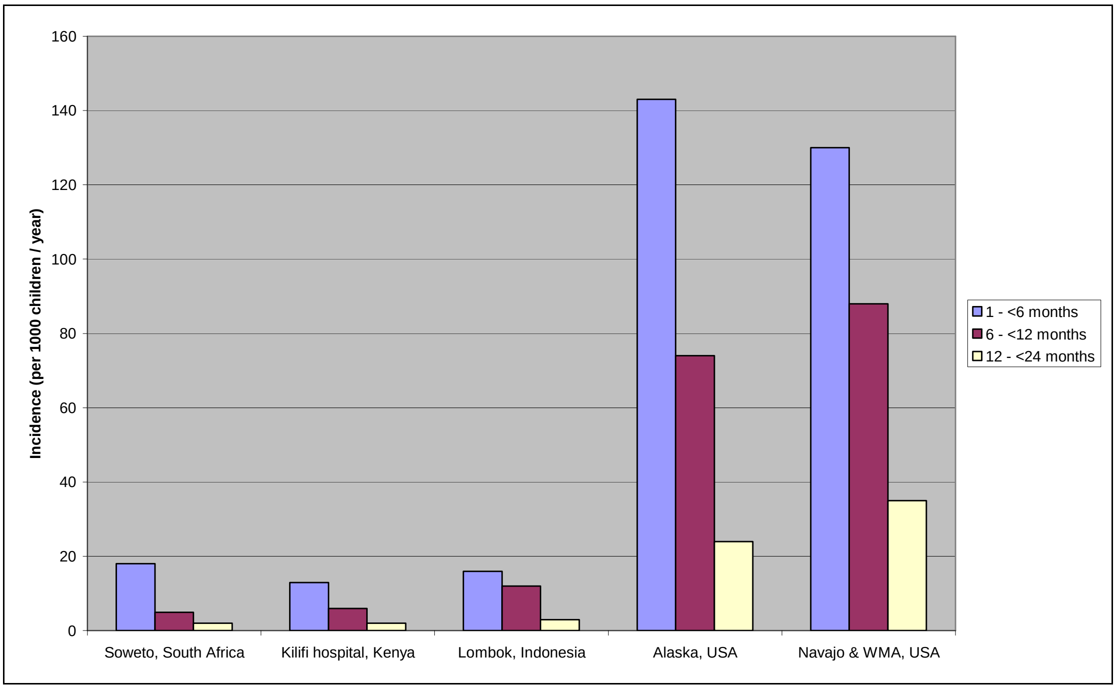
Supplementary table 8: Hypoxemia in under-5 children hospitalised with RSV-ALRI

Study site (Reference)	Proportion of RSV+ with hypoxemia
Kilifi hospital study, Kenya (Nokes et al.)[§]	0.09
Lombok, Indonesia (Gessner et al.)	0.18
Alaska, USA (Singleton et al.)[**]	0.36
Navajo, USA (Epi study)	0.50
San Marcos, Guatemala (Bruce et al.)[††]	0.66
Athens, Greece [57]	0.64
Freiburg, Germany [59]	0.54
Western Region, The Gambia [29]	0.16
Soweto, South Africa (Madhi et al.)	0.23

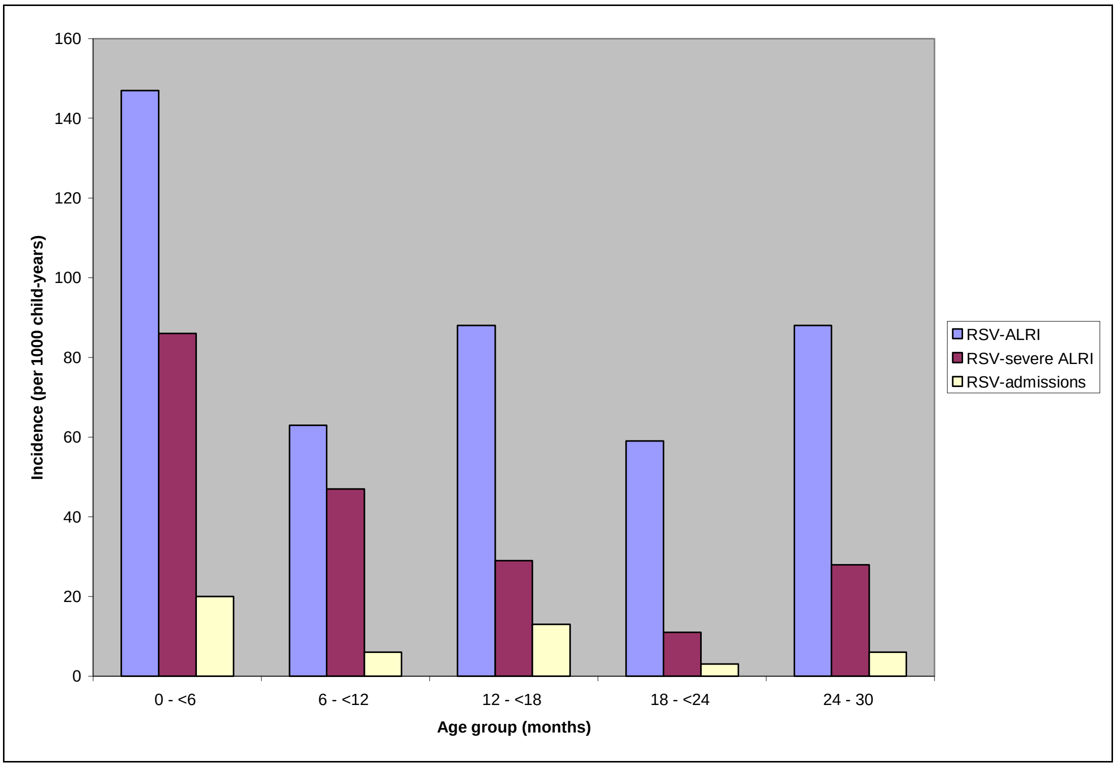
[§] The cut-off for hypoxemia was taken as SaO_2 <90% for all age groups (including neonates)
[**] For the period 1993-1996. The cut-off for hypoxemia was taken as SaO_2 <90% for all age groups (including neonates)
[††] Pulse oximetry was done at community centres not more than 1 km away from the homes by the study physicians. Only three children were hospitalised. The cut-off for hypoxemia was taken as SaO_2 <87% for all age groups (including neonates).



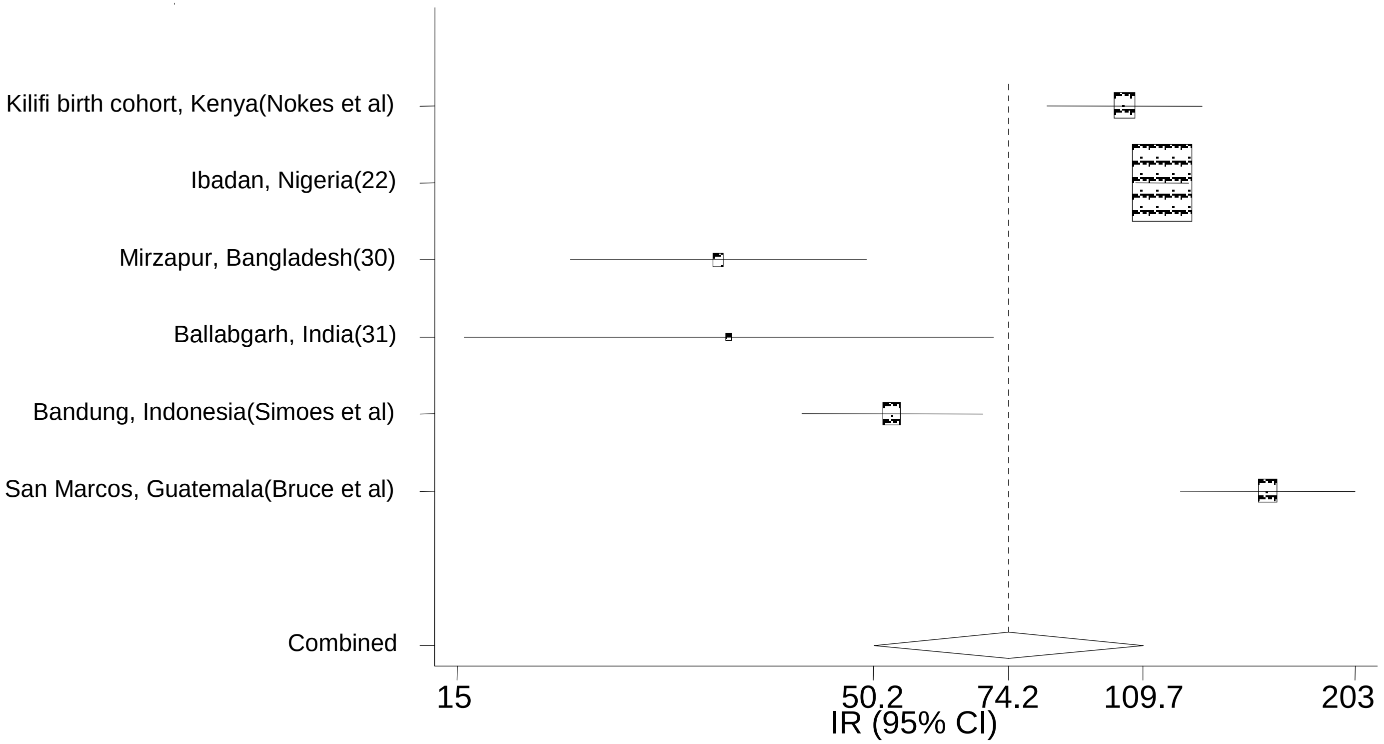
Supplementary Figure 1: Incidence of RSV-ALRI (per 1000 child-years of observation) among children aged 0 – 30 months from community based active ascertainment studies in Kenya and Guatemala, by age group



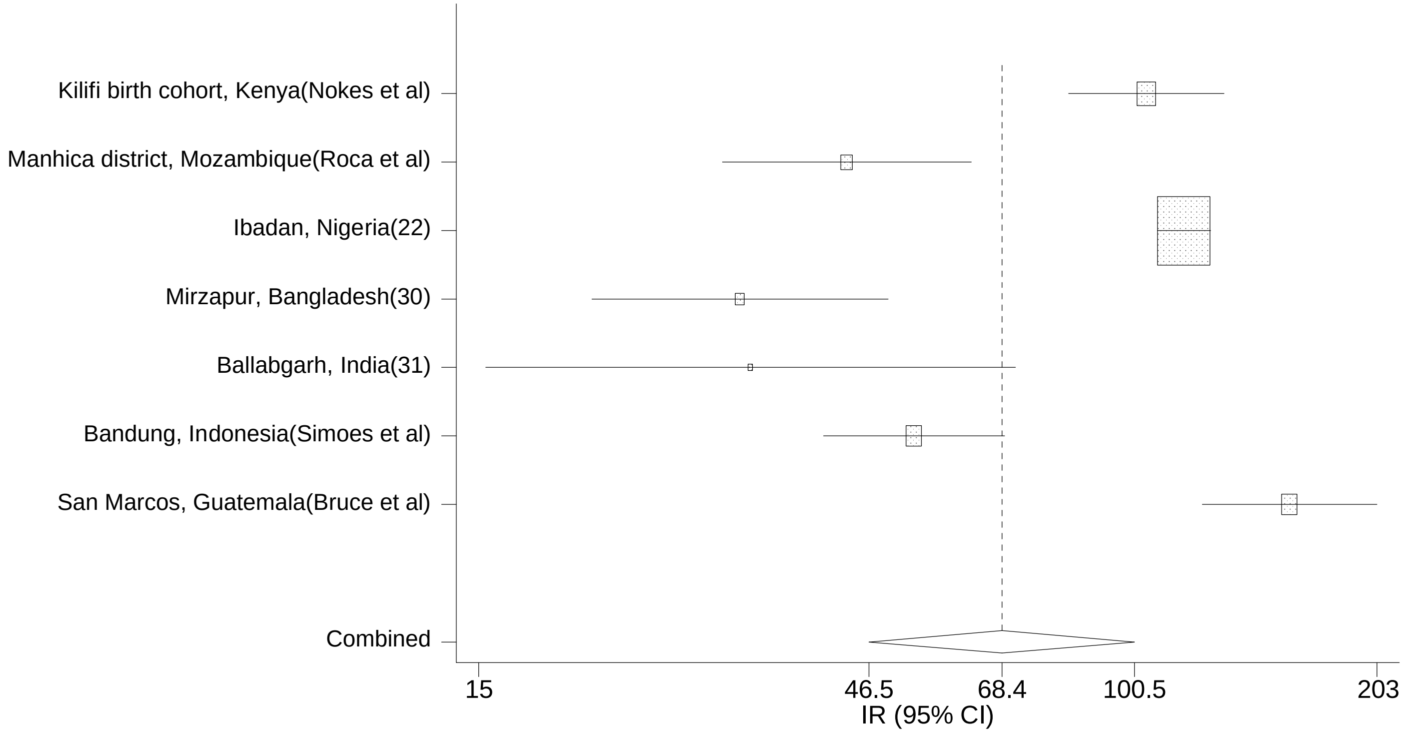
Supplementary Figure 2: Incidence of RSV-severe ALRI (per 1000 child-years of observation) among hospitalised children <2 years in Kenya, Indonesia, South Africa & indigenous USA populations, by age group



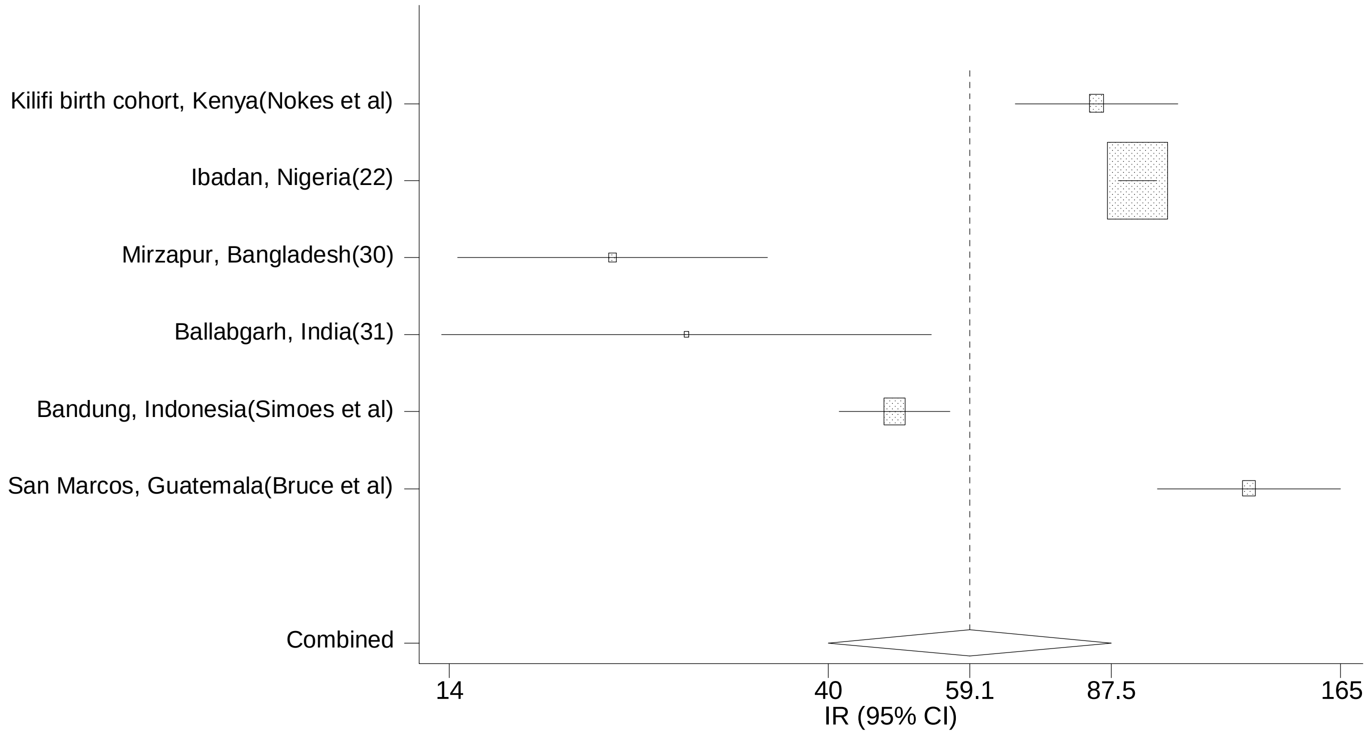
Supplementary Figure 3: Incidence of RSV-ALRI among children (0-30 months) in Kilifi, Kenya by age group and case definition



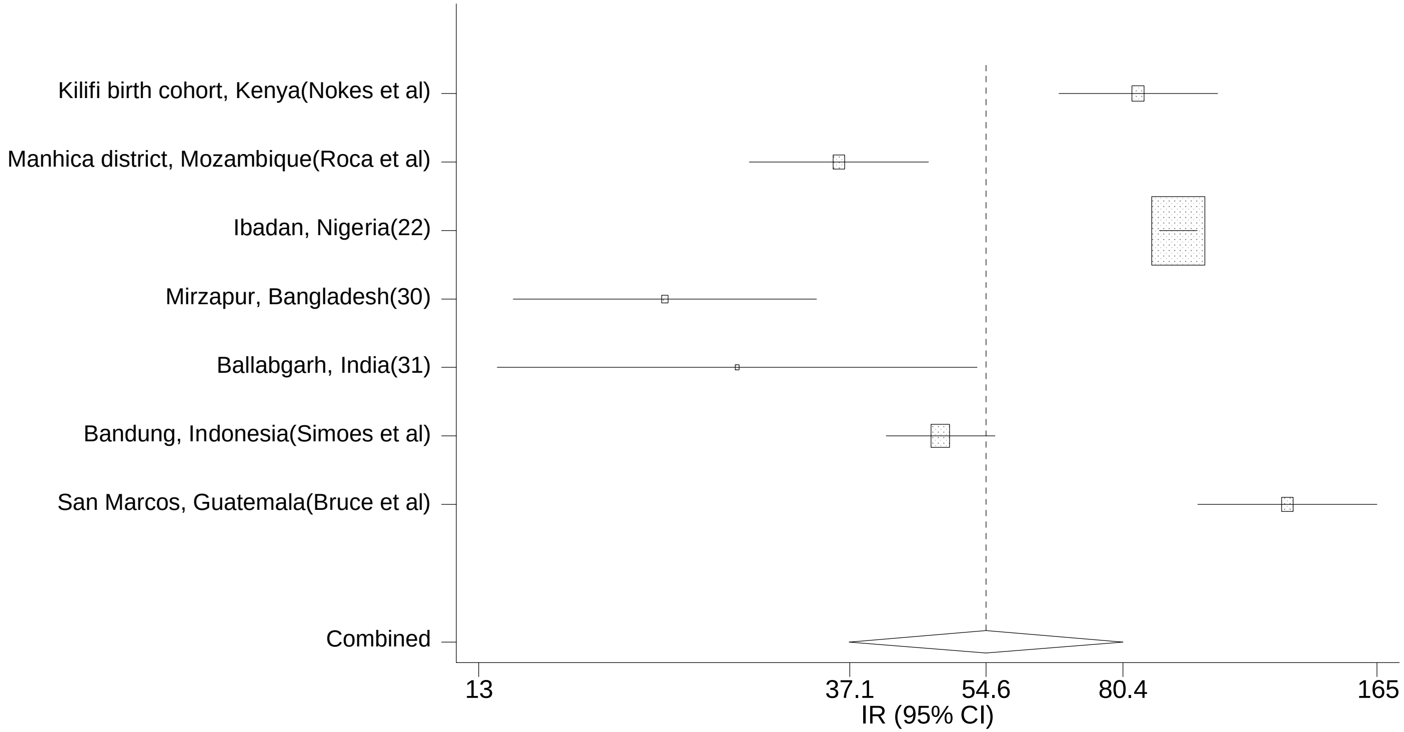
Supplementary figure 4: Meta-analysis of incidence rates (per 1000 children / year) of RSV-ALRI in active case ascertainment studies in developing countries for children 0-<1 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



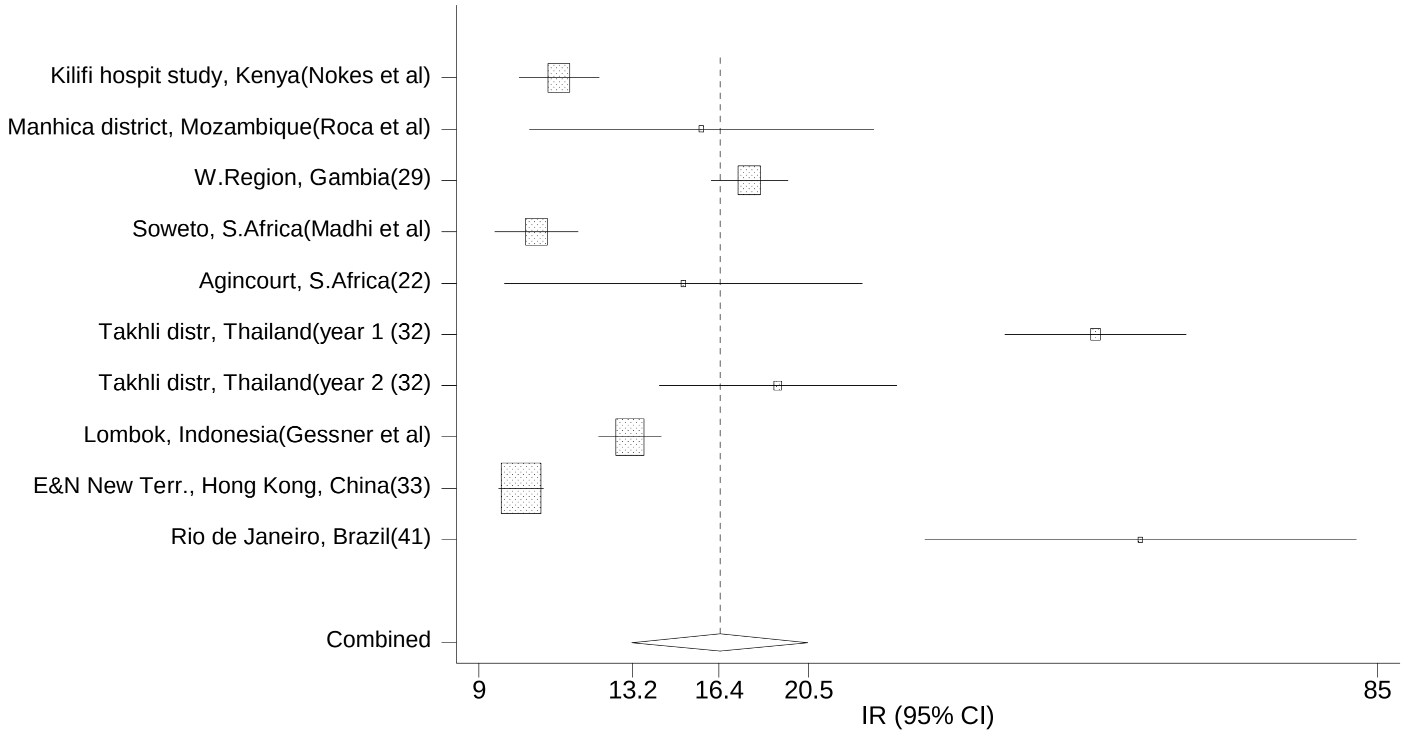
Supplementary figure 5: Meta-analysis of incidence rates (per 1000 children / year) of RSV-ALRI in active and passive case ascertainment studies in developing countries for children 0-<1 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



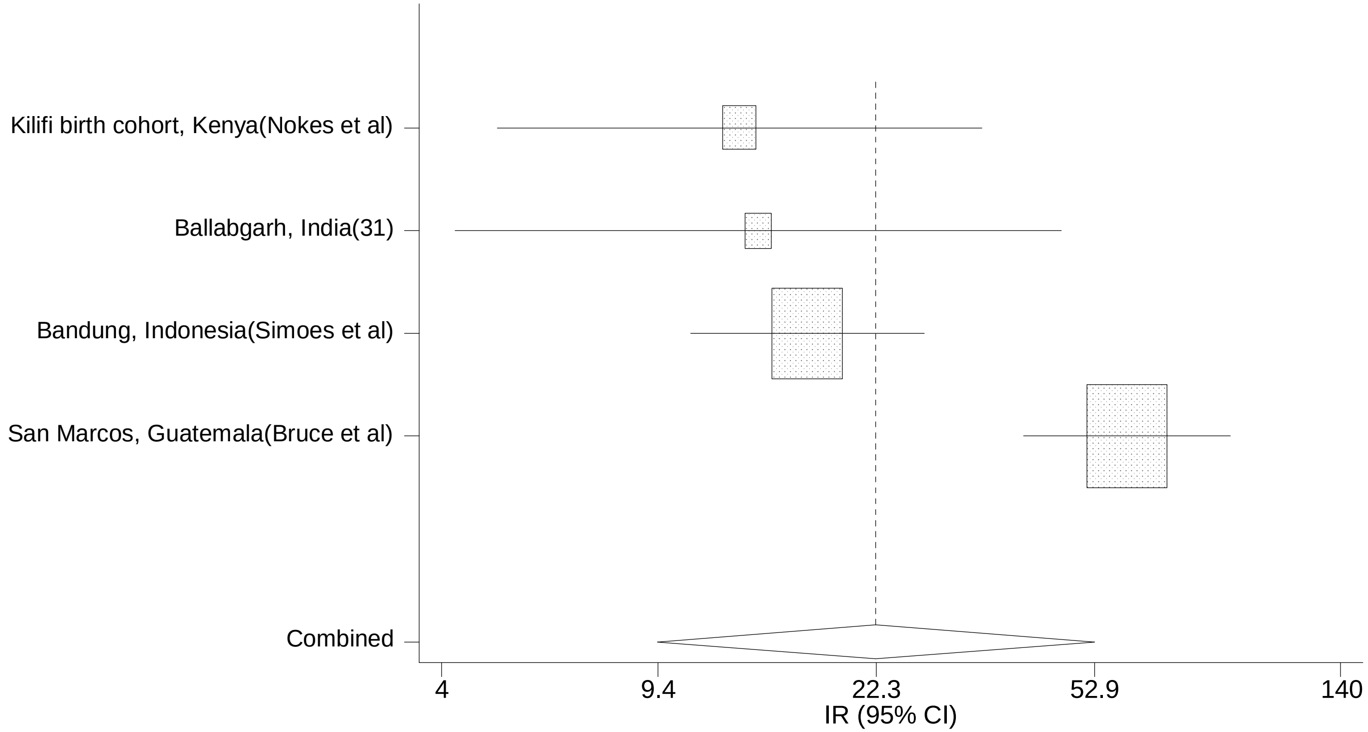
Supplementary figure 6: Meta-analysis of incidence rates (per 1000 children / year) of RSV-ALRI in active case ascertainment studies in developing countries for children 0-<5 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



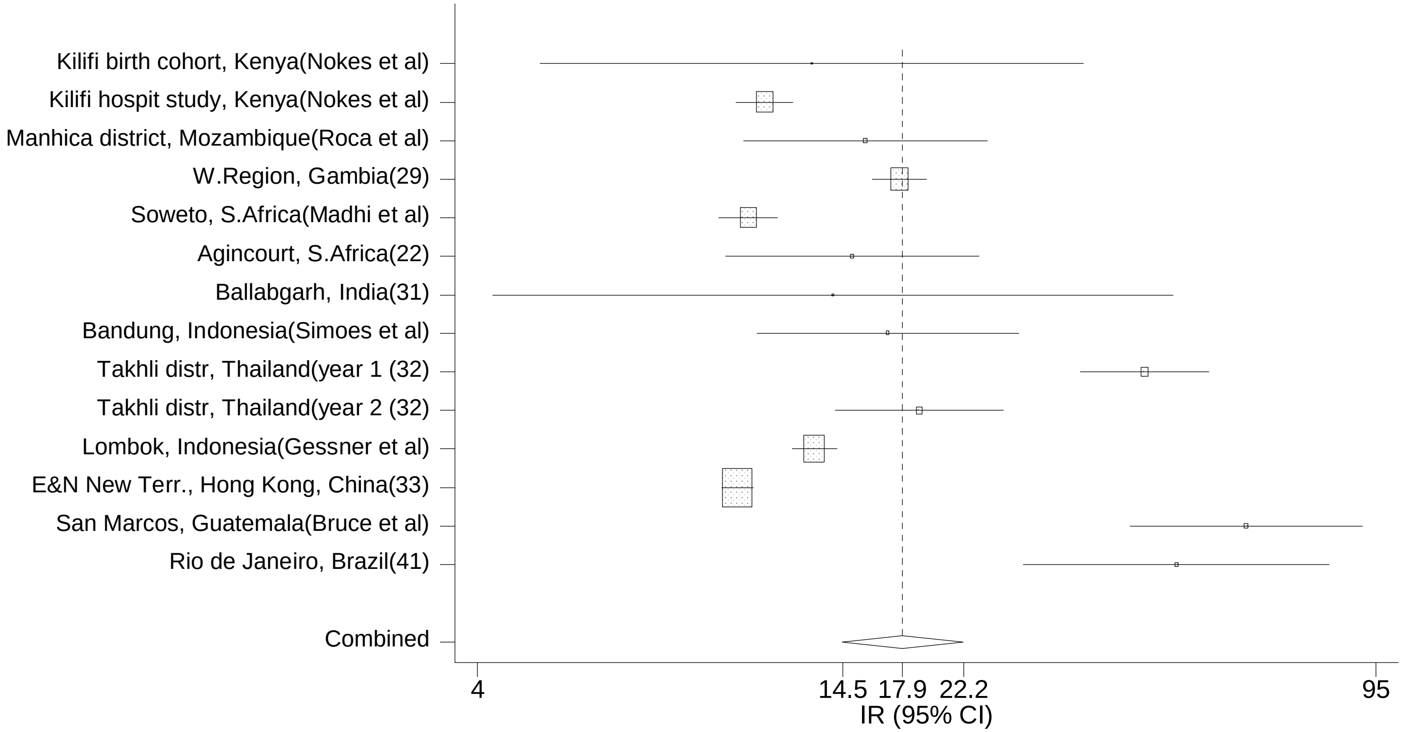
Supplementary figure 7: Meta-analysis of incidence rates (per 1000 children / year) of RSV-ALRI in active and passive case ascertainment studies in developing countries for children 0-<5 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



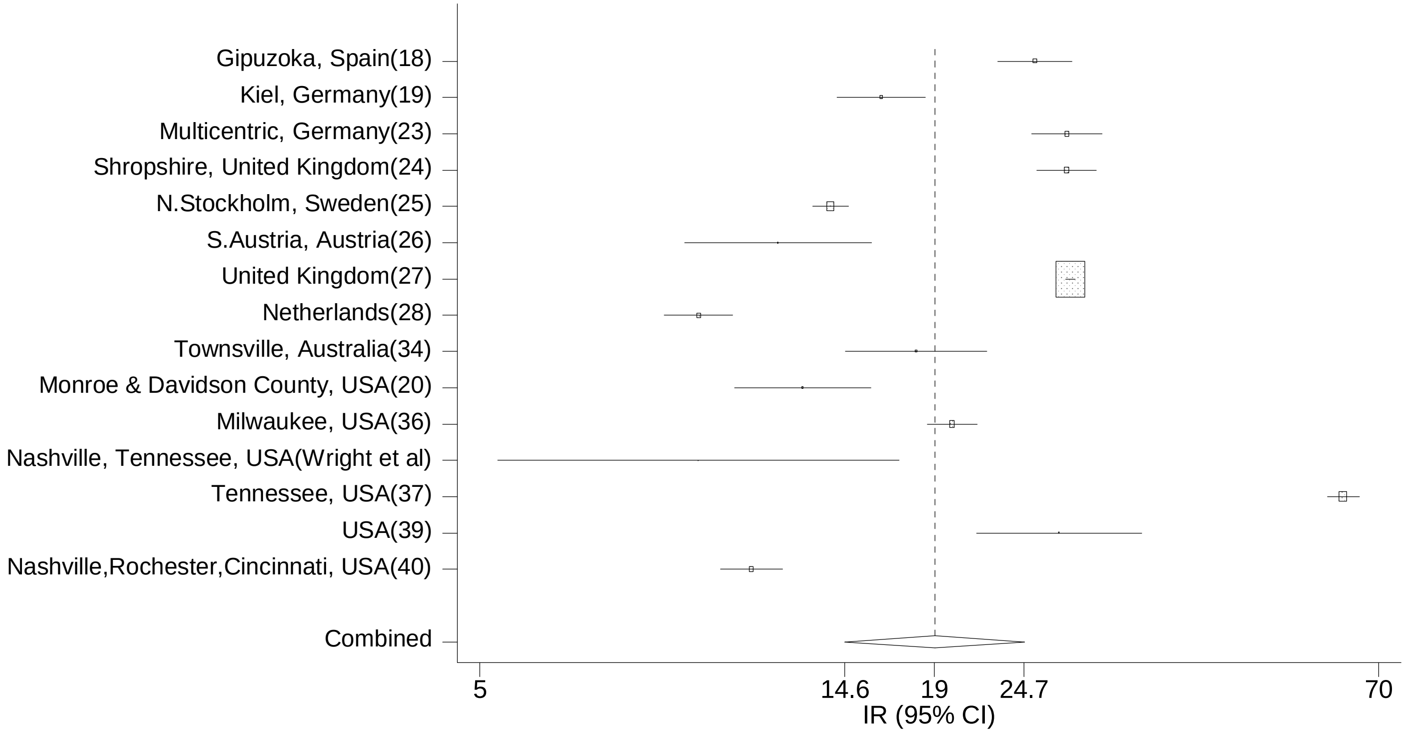
Supplementary figure 8: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in passive case ascertainment studies in developing countries for children 0-<1 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



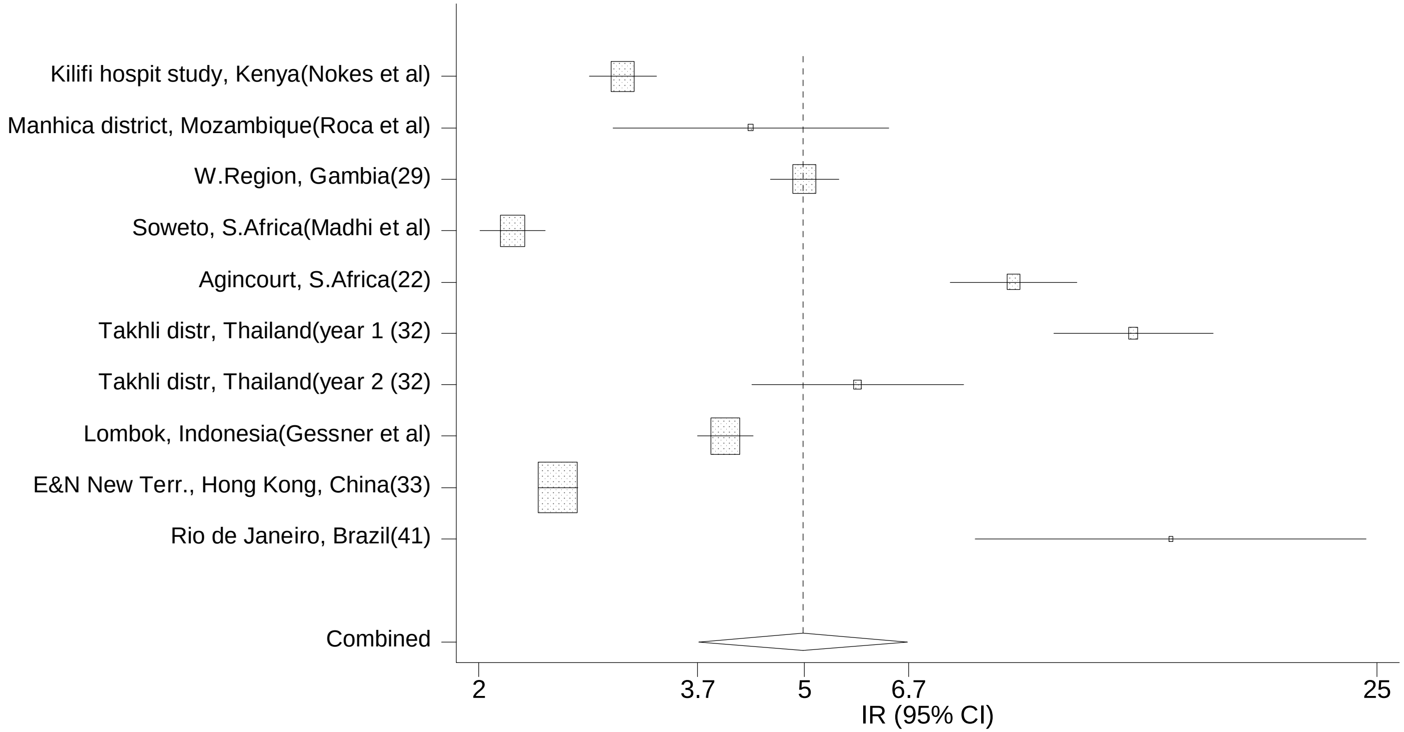
Supplementary figure 9: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in active case ascertainment studies in developing countries for children 0-<1 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



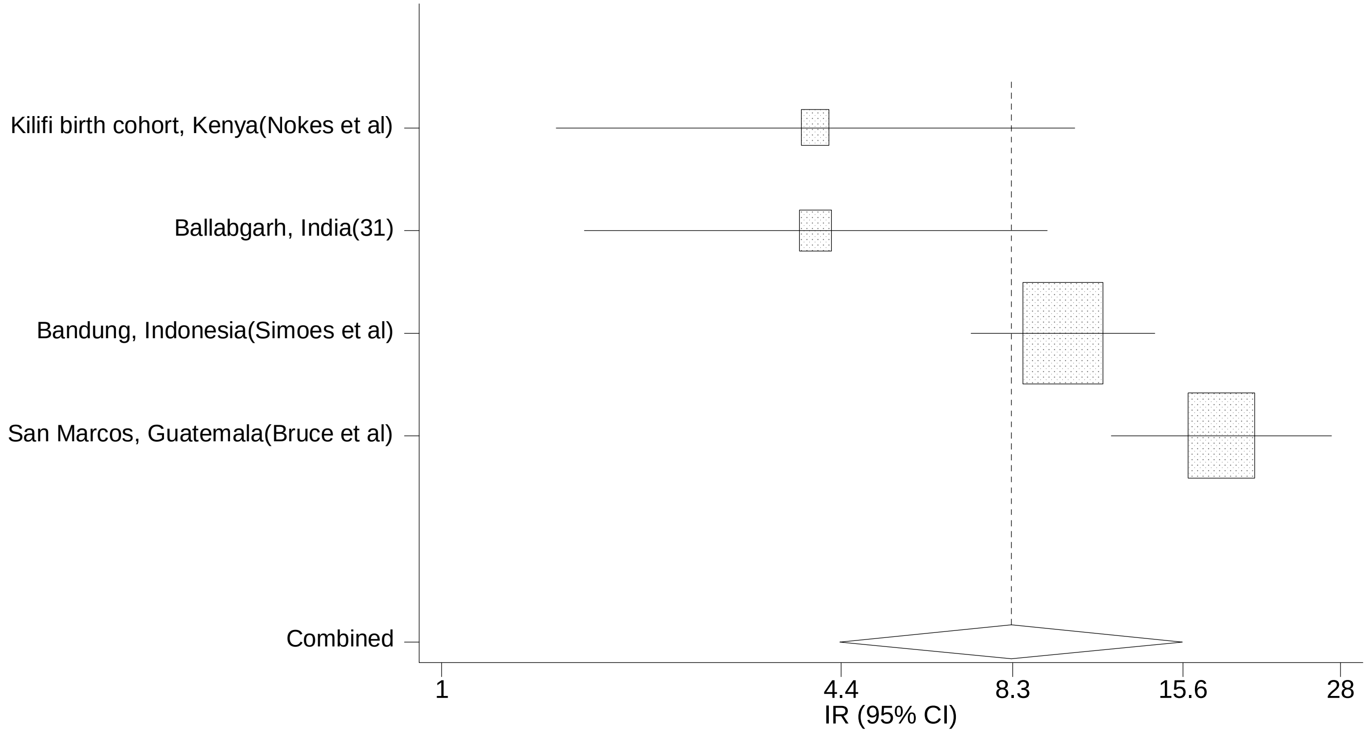
Supplementary figure 10: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in passive and active case ascertainment studies in developing countries for children 0-<1 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



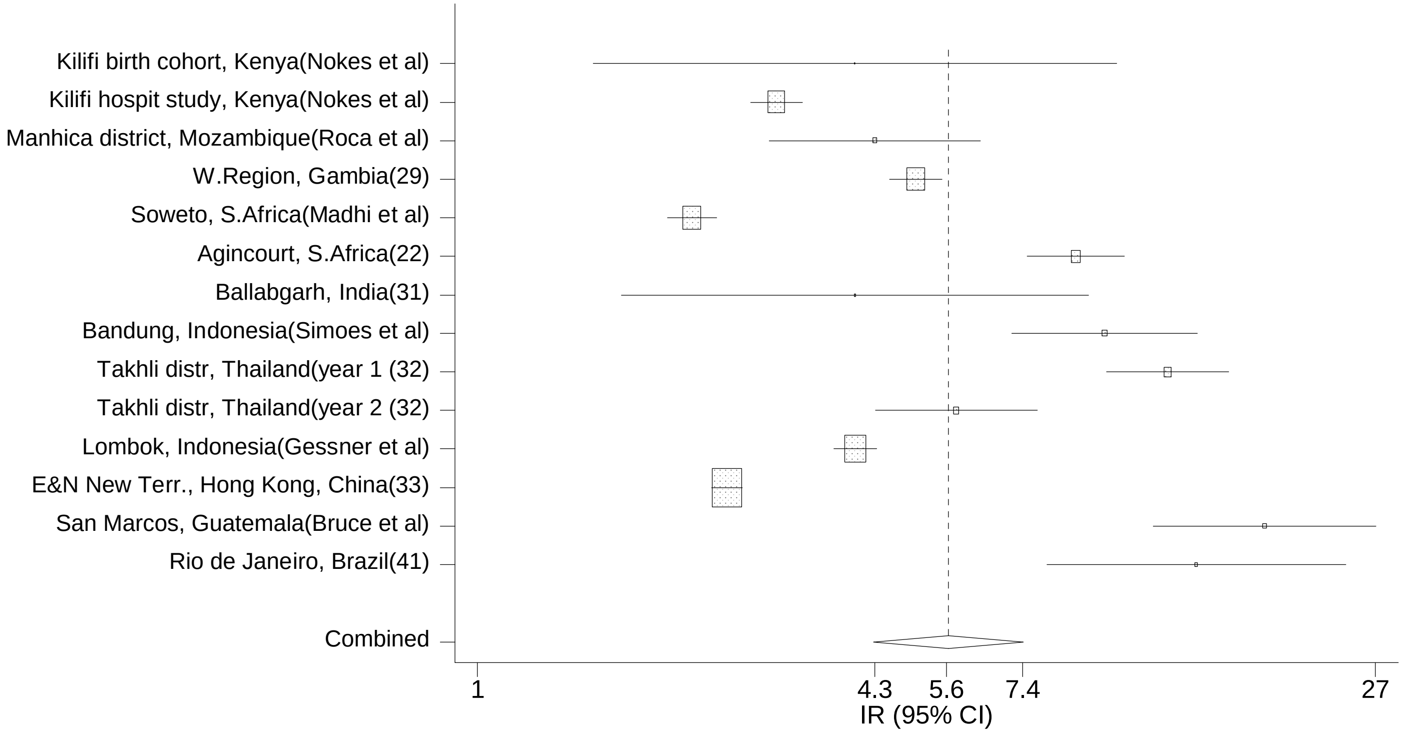
Supplementary figure 11: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in passive case ascertainment studies in industrialised countries for children 0-<1 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



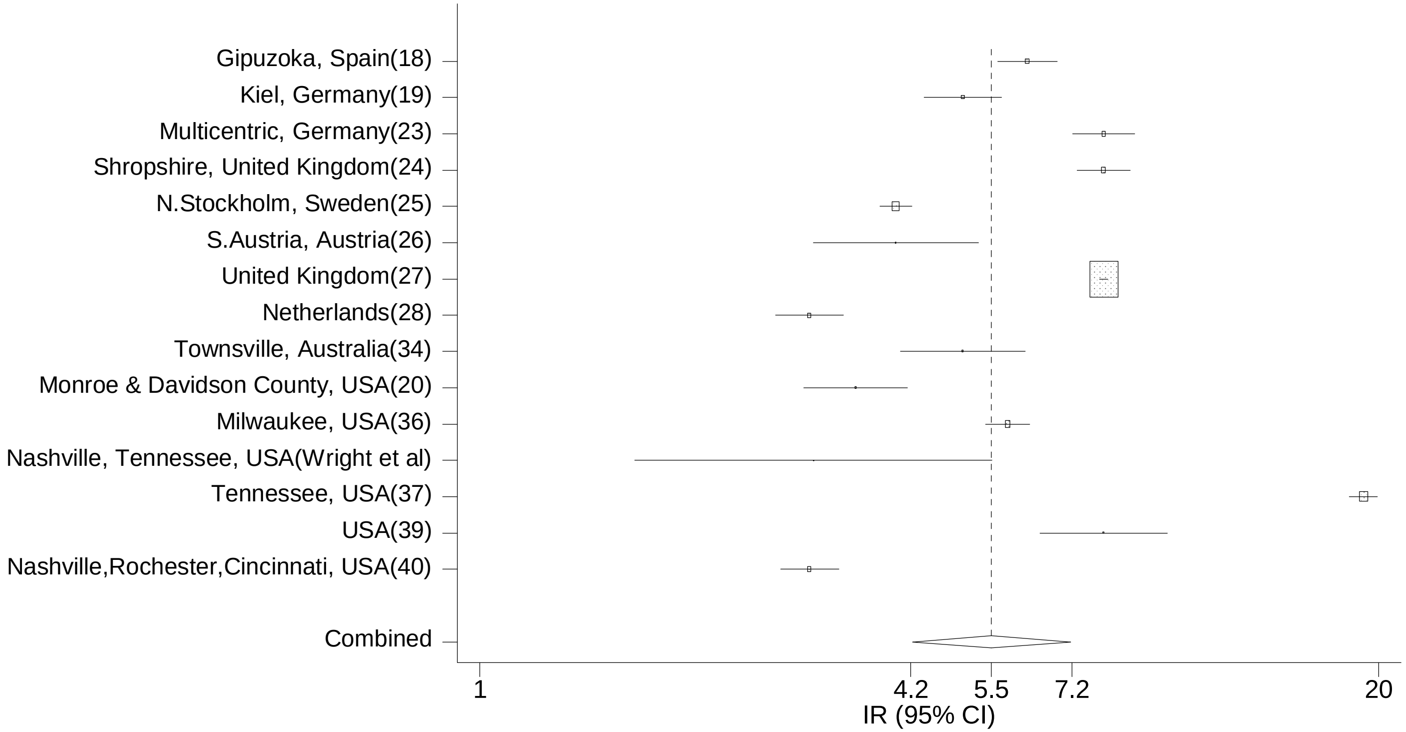
Supplementary figure 12: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in passive case ascertainment studies in developing countries for children 0-<5 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



Supplementary figure 13: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in active case ascertainment studies in developing countries for children 0-<5 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



Supplementary figure 14: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in passive and active case ascertainment studies in developing countries for children 0-<5 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.



Supplementary figure 15: Meta-analysis of incidence rates (per 1000 children / year) of RSV-severe ALRI in passive case ascertainment studies in industrialised countries for children 0-<5 year old. The size of each box indicates the size of the corresponding study; the diamond represents the meta-estimate with its 95% CI.

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Glossary

Incidence: “The number of new health-related events in a defined population within a specified period of time” (ref. Porta, M. (Ed.) (2008) A Dictionary of Epidemiology, New York, Oxford University Press)
Burden of disease: This indicates the impact of disease in a population. The GBD methodology enable the combined measurement of mortality and non-fatal health outcomes
Incidence Rate Ratio: This is defined as the “incidence rate in the exposed group divided by the incidence rate in the unexposed group” (ref. Porta, M. (Ed.) (2008) A Dictionary of Epidemiology, New York, Oxford University Press).
Case Fatality Ratio: This refers to the proportion of cases of a specified condition that are fatal within a specified time (ref. Porta, M. (Ed.) (2008) A Dictionary of Epidemiology, New York, Oxford University Press).
Case ascertainment: This refers to how clinical cases are sought to make a diagnosis. Case detection, by contrast, refers to how diagnosed cases are identified for inclusion in the study database.
Sensitivity is the “probability that a diseased person in the population tested will be identified as diseased by the test”. Specificity on the other hand is “the probability that a person without the disease will be correctly identified as non diseased by the case” (ref. Porta, M. (Ed.) (2008) A Dictionary of Epidemiology, New York, Oxford University Press)
Bias is defined as “systematic deviation of results or inferences from truth” (ref. Porta, M. (Ed.) (2008) A Dictionary of Epidemiology, New York, Oxford University Press)