Supplement 3 Characteristics of included studies

Supplement 3a. Summary characteristics of included studies

Study characteristic	**N (%[1])**
Country	
Canada	15 (18)
US	15 (18)
Australia	7 (8)
UK	5 (6)
Denmark	4 (5)
Finland	4 (5)
Italy, Netherlands, Taiwan, Thailand	3, each (14)
China, Greece, Ireland, Israel, Japan, Saudi Arabia (SA), Spain, Sweden, Turkey	2, each (21)
Brazil, Germany, Mexico, Qatar	1, each (5)
SA & UK	1 (1)
Study designs	
RCT (all)	68 (80)
2-arm	52 (61)
3-arm	7 (8)
4-arm non-factorial	1 (1)
factorial 4 x4	4 (5)
crossover	2 (2)
trial registry	1 (1)
conference abstract	1 (1)
Non-RCT	5 (6)
Cohort	4 (5)
Case control	1 (1)
Case series	4 (5)
Case report	3 (4)
Number of centres	
Single centre	56 (66)
Multi-centre	24 (28)
Unclear/NR	5 (6)
Setting	
Inpatient	41 (48)
Outpatient	22 (26)
Inpatient & outpatient	21 (25)
NR	1 (1)
Funding	

Not reported	35 (41)
Non-industry	25 (29)
Industry	9 (11)
Industry & non-industry	15 (18)
No direct funding	1 (1)
Year of publication, median (range)	**2002 (1964-2017)**
Respiratory condition	
Asthma	27 (32)
Croup	22 (26)
Bronchiolitis	15 (18)
Wheeze	14 (16)
Asthma/croup, palatability & tolerability of CS	2 (2)
Pharyngitis	1 (1)
Shortness of breath	1 (1)
Refractory pneumonia	1 (1)
Bronchiolitis & laryngitis	1 (1)
Bronchiolitis, viral wheeze & croup	1 (1)

CS: corticosteroid; N: number of studies; NR: not reported; RCT: randomized controlled trial; SA: Saudi Arabia; UK: United Kingdom; US: United States

[1] sum of percentages may not total 100 due to rounding

Supplement 3b. Summary characteristics of included studies – comparisons

Number of treatment groups	Comparison	No. of studies (no. of patients)	No. of studies contributing data (no. of patients)
2-arms	Systemic CS vs. placebo/no intervention/standard care	26 (4166)	15 (3035)
	Systemic CS vs. systemic CS	12 (1683)	5 (1051)
	Systemic CS vs. non-CS	2 (180)	0
	Systemic CS vs. inhaled CS	3 (124)	1 (18)
	Systemic CS vs. systemic CS + placebo	1 (125)	0
	Systemic CS + inhaled CS vs. systemic CS + placebo	1 (50)	1 (50)
	Inhaled CS vs. placebo/no intervention	14 (2367)	8 (1234)
	Inhaled CS vs. non-CS	1 (66)	0
3-arms	Systemic CS vs. systemic CS vs. no intervention	2 (180)	1 (80)
	Systemic CS vs. systemic CS vs. systemic CS	5 (624)	2 (354)
	Systemic CS vs. inhaled CS vs. non-CS/placebo	1 (144)	1 (144)
	Systemic CS vs. inhaled CS vs. no CS	1 (64)	1 (39)
	Systemic CS vs. inhaled CS vs. inhaled CS	1 (123)	0
	Systemic CS vs. inhaled CS vs. combined (systemic + inhaled)	1 (198)	1 (197)
	Systemic CS + non-CS vs. inhaled CS + sal + non-CS vs. inhaled CS + sal	1 (238)	0
	Inhaled CS vs. inhaled CS vs. no CS	1 (80)	1 (80)
4-arms	Systemic CS + terb vs. inhaled CS + terb + placebo vs. non-CS + terb + placebo vs. placebo	1 (114)	1 (114)
	Systemic CS + sal dose1 vs. systemic CS + sal dose2 vs. sal dose1 + placebo vs. sal dose2 + placebo	1 (70)	1 (70)
	Systemic CS + non-CS vs. systemic CS + sal vs. non-CS + placebo vs. sal + placebo	1 (69)	1 (69)
	Systemic CS + non-CS vs. systemic CS + placebo vs. non-CS + placebo vs. placebo + placebo	1 (800)	1 (800)
	Systemic CS + sal vs. systemic CS + placebo vs. sal + placebo vs. placebo	1 (32)	0
	Systemic CS	5 (5)	0

Non-comparative (case reports/series)	Mode of administration NR	2 (3)	0

CS: corticosteroid; no.: number; NR: not reported; sal: salbutamol; terb: terbutaline; vs.: versus

Supplement 3c. Characteristics of included studies

Author, year Country Funding source	Study design Setting No. of centres	Respiratory condition Age (range)	Comparators, no. of participants	Co-interventions; Maintenance CS	Time points for assessments; FU	Outcomes related to adverse events
Alangari 2014 Saudi Arabia Non-industry funded	RCT ED 1	Asthma 2-12y	1) Budesonide 500mcg/dose, 3 doses 20min apart (neb), n=458 2) Placebo saline, 3 doses 20min apart (neb), n=448	Salbutamol, ipratropium & prednisolone No CS in preceding 7d	Baseline, at 1h, 2h, 3h and 4h from the start of medications; FU 72h post-discharge	The most frequently reported adverse effects were fine tremors (17 cases) and palpitations (11 cases). None of the reported adverse effects was serious, and none was significantly different between the two groups.
Alansari 2013 Qatar Non-industry funded	RCT Pediatric emergency unit 1	Bronchiolitis <=18mo	1) Dexamethasone 1.0mg first day, then 0.6mg for 4d (oral) + sal, 5d total (neb), n=102 2) Placebo (oral) + sal, 5d total (neb), n=98	Epinephrine, oxygen & hydration No CS in preceding 48h	At study entry, then assessed if ready for discharge at 12h, 18h, 24h, 36h & 48h; FU by telephone 1wk post-discharge	Daily telephone surveillance (7 days) revealed no particular side effect concerns in either treatment group.
Aljebab 2017 Saudi Arabia & UK Unfunded	Cohort, 3-arm Pediatric ED of hospital (SA & UK)	Asthma/croup, palatability & tolerability 2-10y (SA); 2-16y (UK)	SA 1) Dexamethasone 0.5mg/5mL elixir (oral), n=33	NR Most patients in prednisolone groups had received oral steroids previously;	After each dose (within 10min) & daily on D1-D5	In SA and the UK, dexamethasone had the highest palatability scores and

	2		2) Prednisolone base 5.0mg tablets (oral), n=52 3) Prednisolone sodium phosphate 15.0mg/mL syrup (oral), n=37 UK 1) Dexamethasone 2.0mg/5mL elixir (oral), n=53 2) Prednisolone base 5.0mg tablet (oral), n=38 3) Prednisolone sodium phosphate 5.0mg soluble tablets (oral), n=42	however, most patients and none had received oral steroids previously in the SA & UK dexamethasone groups, respectively		prednisolone base tablets had the lowest. Palatability scores improved for all formulations of prednisolone with each subsequent daily dose. In SA, prednisolone base tablets were associated with more nausea (24 vs. 7 patients) and vomiting (5 vs. 0 patients) than sodium phosphate syrup. In the UK, vomiting occurred more frequently with prednisolone base (8 patients) than sodium phosphate soluble tablets (2 patients) (p=0.041).

						In both centres, dexamethasone was associated with less side effects. Vomiting (1 vs. 0 patients), nausea (7 vs. 3 patients), and abdominal pain (10 vs. 8 patients) occurred more with dexamethasone sodium phosphate solution than dexamethasone elixir.
Alshehr 2005 Saudi Arabia Funding NR	RCT Emergency rooms & outpatient clinics 3	Croup 3mo-9y	1) Dexamethasone 0.6mg/kg, single dose (oral), n=36 2) Dexamethasone 0.15mg/kg, single dose (oral), n=36	Mist therapy, racemic epinephrine, oxygen & antibiotics No CS in preceding 4wk	12h & 24h after treatment & change in total croup scores per 12h intervals within & between study groups	Two patients developed bronchopneumonia on second day of admission as confirmed by chest x-ray and one patient had bacterial tracheitis. All these three patients were in group A (0.6 mg/kg dexamethasone). No adverse events were

						noted in the group B patients. No patient had a clinical deterioration, either in the emergency room or after discharge and no child had gastrointestinal bleeding or bacterial infection.
Altamimi 2006 Canada Non-industry & industry funded	RCT Pediatric hospital 1	Asthma 2-16y	1) Dexamethasone 0.6mg/kg (max 18mg), single dose (oral), n=67 2) Prednisolone 1.0mg/kg (max 30mg) twice daily (oral), n=67	Salbutamol No CS in preceding 2wk	2d & 5d post-discharge & every week to a maximum of 3wk	Two subjects in the prednisolone group dropped out because of repeated vomiting. Side effects (table 5), n: Abdominal pain (2 dex vs. 3 pred); Vomiting (0 dex vs. 1 pred); Headache (0 dex vs. 0 pred); Palpitation (0 dex vs. 0 pred); Excessive urination (0 dex vs. 1 pred)
Bacharier 2008 USA	RCT, 3-arm	At least 2 wheeze	1) Montelukast 4.0mg once daily (oral) +	Albuterol, prednisolone &	Clinic visits 4wk after randomizati	The 3 groups did not differ significantly in

Non-industry & industry funded	Clinical center 5	episodes in last year 12-59mo	placebo ICS twice daily for 7d (neb), n=95 2) Budesonide 1.0mg twice daily (neb) + placebo LTRA once daily (neb), n=96 3) conventional therapy + placebo (systemic + inhaled), n=47 Multiple courses over 1yr	other non-asthma medications No more than 6 courses of CS in past year	on, then every 8wk; FU by phone 2wk after randomization, followed by calls 4wk after each scheduled clinic visit Linear growth in height or length (assessment method NR) from baseline to study end (12mo)	several other outcomes assessed over the 1-year trial, including oral corticosteroid use, health care use, linear growth, quality of life, and frequencies of adverse events.
Bisgaard 2006 Denmark Non-industry & industry funded	RCT Clinical research unit 1	Wheeze 1mo	1) Budesonide 400mcg/day for 2wk (MDI), n=149 2) Placebo once daily for 2wk (MDI), n=145 Multiple courses over 3yrs	NR NR	Height & bone mineral density measured using Harpenden stadiometry at 3yrs of age	Safety, as evaluated by height and bone mineral density, were not affected by treatment; the height at three years of age measured by stadiometry and bone mineral density measured by ultrasonography at the phalanx were unaffected by

						treatment group.
Bjornson 2004 Canada Non-industry & industry funded	RCT Pediatric ED 4	Croup mean 35+/-23 mo	1) Dexamethasone 0.6mg, max. 20.0mg, single dose (oral), n=359 2) Placebo solution, single dose (oral), n=361	Mist, antibiotics & nebulized epinephrine or beta-agonists No CS in preceding 2wk	D1, D2, D3, D7 & D21 after day of treatment; FU interview with parent on D7 and chart and administrative database review	Among the 720 patients, there were no cases of gastrointestinal bleeding, complicated varicella, or bacterial tracheitis. There were 7 cases of pneumonia (3 in the dexamethasone group). All these cases were managed on an outpatient basis, without significant sequelae. Repeated short courses of oral corticosteroids are not associated with long-term negative effects on bone metabolism, bone density or adrenal function. There were no serious adverse events attributable

						to therapy in any children in our study. However, the study was not sufficiently powered to exclude the possibility of rare adverse events. Supplementary Table 1 list of adverse events, n (dex vs. placebo): Abnormal bowel movements (6 vs. 5); Fever (5 vs. 4); Pneumonia (3 vs. 4); Vomiting or gastroenteritis (3 vs. 4); Otitis media (1 vs. 5); Bronchitis (3 vs. 1); Sore throat (1 vs. 2); Streptococcal throat infection (1 vs. 1); Abdominal pain (1 vs. 1); Rash (2 vs. 0); Dehydration (1 vs. 0); Febrile seizure (1 vs. 0);

						RSV infection (1 vs. 0); Uncomplicated varicella (0 vs. 1); Urinary tract infection (0 vs. 1); Irritability (1 vs. 1); Eye discharge (1 vs. 0); Sinusitis (0 vs. 1); Bleeding from ear (0 vs. 1); Nasal discharge (1 vs. 0)
Brunette 1988 Canada Funding NR	NRCT Hospital 1	Asthma <6y	1) Theophylline 8.0mg/kg every 6-8h (oral) + metaproterenol 0.3-0.7 mg/kg every 6-8h (oral)+ prednisone 1.0mg/kg/day for 7-14d (oral), n=16 2) Theophylline 8.0mg/kg every 6-8h (oral) + metaproterenol 0.3-0.7mg/kg every 6-8h for 7-14d (oral), n=16 Multiple courses over 1yr	None NR	Monthly or every second month, depending on severity of disease; Growth (mean height gain in cm/yr and height as percentile of normal distribution) assessed (assessment method NR) at the end of each of two 1-yr periods	No side effect was observed in a particular case which received longer duration of corticosteroid (high cumulative corticosteroid dose). Growth and weight gains for all children were within the normal range during the two periods.

Buckingham 2002 USA Non-industry funded	RCT Pediatric hospital 2	RSV (bronchiolitis) <24mo	1) Dexamethasone 0.5mg/kg/dose every 12h for 4d (IV), n=22 2) Placebo saline every 12h for 4d (IV), n=19	Other treatment (not specified) No CS in preceding 3wk	Enrolment & daily until discharge; FU 30d after enrolment	Serious adverse events occurred in 2 patients in the dexamethasone group. One infant developed progressive respiratory failure that did not improve with high-frequency oscillatory ventilation or extracorporeal membrane oxygenation; support was withdrawn, and this infant died on study day 38. Another subject developed pneumothorax, which resolved following placement of a pigtail thoracotomy catheter, on study day 7. Neither adverse event was judged to be related to administration of the study

						drug. No patients in either group had microscopic or gross gastrointestinal bleeding, and no patients required antihypertensive therapy during the study.
Bulow 1999 Denmark Non-industry funded	RCT Pediatric hospital 3	RSV (bronchiolitis) 0-2y	1) Prednisolone 5.0mg/ml at dose of 2mg/kg/day, first dose at enrolment and for 4d (oral), or methylprednisolone for patients with IV line (40.0mg/ml at dose of 1.5mg/kg/day) for 5d (IV), n=73 2) quinine hydrochloride (or saline for patients with IV line) for 5d (IV), n=74	Beta-2-agonist, antibiotics, oxygen & hydration No CS in preceding month	Enrolment & 5d; FU 1mo & at 1y	A total of 11 patients (7 in the prednisolone group and 4 in the placebo group) did not complete the treatment because of side effects, primarily vomiting (8 patients), which were mild in all cases.
Chang 2008 Australia Non-industry & industry funded	RCT Pediatric & general ED 3	Asthma 2-15y	1) Prednisolone 1.0mg/kg (max. 50.0mg/day) for 3d + placebo solution for 2d (oral), n=101 2) Prednisolone 1.0mg/kg (max.	NR No maintenance CS or CS preceding presentation	24h, 48h, D5, D7, D10, D14 & D28	There were five recorded adverse events, with no significant difference between groups. In the 3-day group,

			50.0mg/day) for 5d (oral), n=100			two parents reported that their child had behavioural disturbance (cranky and irritable) and one had a rash, while two children in the 5-day group had behavioural disturbance (angry and aggressive).
Chen 2008 China Funding NR	RCT, 3-arm Pediatric outpatient, hospital ward, or ED 1	Asthma 1-14y	1) Budesonide 0.5mg (neb) + sal + ipratropium; 1-6yo (n=32); 6-14yo (n=21) 2) Budesonide 0.2-0.4mg (neb) + sal + ipratropium; 1-6yo (n=25); 6-14yo (n=16) 3) Dexamethasone 2.0mg (<2yo), 4.0mg (2-6yo) (IV); 1-6yo (n=15); 6-14yo (n=14)	NR No CS within 48h	0.5h before & post-treatment & 5d post-treatment	All three groups of children showed no adverse effects.
Chub-Appakarn 2007 Thailand Funding NR	RCT Pediatric hospital ward 1	Croup 6mo-5y	1) Dexamethasone 0.5ml/kg of 0.15 mg/kg, single dose (IV), n=20 2) Dexamethasone 0.5 ml/kg of	Epinephrine, mist, antibiotics & oxygen No CS in preceding 2wk	0, 1h, 2h, 3h, 4h, 6h, 8h, 10h & 12h post-treatment	There was no significant adverse reaction from dexamethasone treatment in either group.

			0.6mg/kg, single dose (IV), n=21			
Clavenna 2014 Italy Non-industry & industry funded	RCT Family pediatric health units 9	Wheeze 1-5y	1) Beclomethasone 400mcg (1ml) twice daily for 10d (neb), n=264 2) Placebo twice daily for 10d (neb), n=261	Paracetamol, nasal saline irrigation & antibiotics No CS in preceding month	Entry visit, D11 (or prior if requested by parents) & daily diary symptom recording during 10d treatment	No differences were found in the incidence of adverse events reported by parents at the end of the therapy. Table 4 AEs reported by parents, n (beclo vs. placebo): Any AEs (97 vs. 98) Hoarseness (34 vs. 34); Diarrhea (27 vs. 35); Skin rash (19 vs. 22); Vomiting (19 vs. 20); Candidiasis (12 vs. 15); Others (25 vs. 26) Two serious adverse events were reported by pediatricians: 1 hospital admission for urinary tract infection in the beclomethasone group and 1

						hospitalizatio n for adenoidectom y and tonsillectomy in the placebo group. Neither adverse event was drug related.
Connett 1994 UK Non-industry funded	RCT, factoria l Hospita l 1	Asthma >18mo	1) Prednisolone 2.0mg/kg single dose (oral) + sal 0.15mg/kg every 30min for 3h (max. 5.0mg) (neb), n=18 2) Prednisolone 2.0mg/kg single dose (oral) + sal 5.0mg every 1-4h as needed (neb), n=19 3) Placebo single dose (oral) + sal 0.15mg/kg every 30min for 3h (neb), n=15 4) Placebo single dose (oral) plus sal 5.0mg every 1-4h as needed (neb), n=18	NR No CS in preceding 2wk	On arrival, after nebulizatio n & at treatment completion	Tremor and hyperactivity were more commonly reported in those children receiving the more intensive nebuliser regimen but symptoms were mild and self-limiting in most instances. Vomiting was more a feature of disease severity than any particular treatment group. There was no significant change in heart and respiratory rates throughout the study period,

						though there was a trend towards decreasing tachypnoea in all four groups.
Connolly 1969 Ireland Funding NR	RCT Hospital 1	RSV Bronchiolitis 0-2y	1) Prednisolone D1=15.0mg; D2-3=10.0mg; D4-5=5.0mg; D6-7=2.5mg (NR, likely IV), n=47 2) Placebo (NR, likely IV), n=48	Ampicillin, oxygen NR	FU 1mo & 1y	There was no evidence in this trial that prednisolone treatment of the patients affected the antibody response. In the dosage used in this trial, prednisolone had no beneficial or harmful effects on the course of the disease in severely ill children. There were no deaths.
Corneli 2007 USA Non-industry & industry funded	RCT ED 20	Bronchiolitis 2-12mo	1) Dexamethasone 1.0mg/kg (max. 12mg), single dose (oral), n=305 2) Placebo solution 1.0ml/kg (max. 12ml), NR (oral), n=295	Not specified No CS in preceding 14d	Baseline, 1h & 4 h; FU at 7-10d by telephone	There were few adverse events. No infant had gastrointestinal bleeding, hypertension, or complicated varicella. Vomiting within 20 min after administratio

						n of study medication (5.5% in dex; 4.7% in placebo). Pneumonia was diagnosed in three infants; two were in the placebo group, and an empyema developed in one of these two infants.
Cronin 2016 Ireland Non-industry funded	RCT Tertiary hospital ED 1	Asthma 2-16y	1) Dexamethasone 0.3mg/kg (max. 12.0mg) single dose, n=123 2) Prednisolone 1.0mg/kg per day, once daily (max. 40.0mg) for 3d, n=122	Regular inhaled bronchodilators prior to enrolment in trial No IV or oral CS in previous 4wk	Baseline & D4 for primary outcome; 14d period for adverse events	Seven patients in the PRED group (5.7%) vomited within 30 minutes of the dose of steroid on day 1 in the ED compared with none in the DEX group (absolute difference -5.7%; 95%CI -9.9% to -1.54%). Seven patients vomited after the prednisolone dose on day 2, and 6 vomited after the dose on day 3. A total of 14 patients

						vomited after at least 1 dose of prednisolone. No other adverse events attributable to the study medications were noted.
Csonka 2003 Finland Non-industry funded	RCT Pediatric ED 1	Viral respiratory infection-induced lower airway disease 6-35mo	1) Prednisolone 2.0mg/kg in ED followed by 2.0mg/kg/day for 3d (oral), n=113 2) Placebo 10.0mL fructose in water (in ED) followed by subsequent doses for 3d, n=117	NR NR	Diary recordings twice daily for 14d; examination by physician 14d-21d post-ED visit	Fifteen children (4 in the placebo group and 11 in the prednisolone group) discontinued the study medication because of perceived side effects. The reported reactions were mild and resolved without special interventions. These included vomiting (4 vs 9), diarrhea (6 vs 6), rash (0 vs 2), and restlessness (2 vs 3) in the placebo and prednisolone groups, respectively.

Daugbjerg 1993 Denmark Non-industry & industry funded	RCT, 4-arm Pediatric department 5	First or recurrent wheeze 0-18mo	1) Prednisolone 4.0-6.0mg/kg on admission; D2-3=1.6-2.6mg/kg (oral) + terbutaline 0.12-0.2mg/kg (4ml) every 4h until discharge or for 5d (neb), n=31 2) Placebo solution (oral) + budesonide 0.5mg every 4h until discharge or for 5d (neb) + terbutaline 0.12-0.2mg/kg (4ml) every 4h until discharge or for 5d, n=29 3) Placebo solution (oral) + placebo (neb) + terbutaline 0.12-0.2mg/kg every 4h until discharge or for 5d (neb), n=27 4) Placebo solution (oral) + placebo (neb) + placebo saline (neb), n=27	NR No CS preceding study	Daily for 5d or until discharge	No side effects were observed, specifically no hoarseness, oral candidiasis or continued fever, in any of the groups. No significant tachycardia was found in the treatment groups compared with placebo.
Dawson 1993 Australia Industry funded	RCT Hospital 1	Asthma <6.5y	1) Prednisolone 1.0mg/kg tablets, every 24h for 5d (oral), n=25 2) Prednisolone 1.0mg/kg solution, every	None NR	D1 to D5	Twenty-one of the children taking the solution took it easily on day 3, compared to two in the

			24h for 5d (oral), n=26			tablet group on the same day. A difference was noted on day 1 with regard to mood change but there was no significant difference at any stage between the groups in terms of excitability. The only children who appeared to be nauseated on day 1 were eight children receiving the tablet treatment. Thereafter, only one child in the tablet group experienced severe nausea although the incidence of mild nausea was evenly distributed. We could not demonstrate any statistical difference between the two treatments in terms of their

						propensity to cause vomiting (on all five days), abdominal pain frequency (days 2-5), nausea (days 2-5) or mood change (days 2-5). As a result of persistent vomiting, the parents of two children receiving tablets stopped treatment prematurely.
Ducharme 2009 Canada Non-industry & industry funded	RCT Hospital 5	>=3 wheeze episodes in lifetime, onset of URTI 1-6y	1)Fluticasone propionate 250mcg (3 doses twice daily at start of URTI) until 48h elapsed without symptoms, for max. 10d (MDI), n=62 2) Placebo (3 doses twice daily at start of URTI until 48h elapsed without symptoms (MDI), n=67 Multiple courses over 6-12mo	Albuterol, nasal saline irrigation No more than 1 dose of CS in preceding 6mo or 2 doses in preceding 12mo	Monthly telephone contacts and a medical visit every 4mo; Growth assessed using an upright stadiometer at baseline, every month, and at the end of follow-up (6-12mo);	Thirteen serious adverse events (4 in fluticasone group and 9 in placebo) occurred in 13 children during the study period - namely, pneumonia, seizure, admission to an intensive care unit, burn, respiratory syncytial virus infection, atelectasis,

					Basal cortisol assessed using an immunoassay system, with or without corticotropin testing, at baseline and end of the study (12mo)	and Kawasaki's disease. None of the serious adverse events were considered by an independent physician masked to treatment to be attributable to the study drug. Table E3 adverse health events, n (FP vs. placebo): Otitis media (27 vs. 23); Fever (18 vs. 20); Gastroenteritis (14 vs. 11); Pneumonia (13 vs. 10); Sinusitis (10 vs. 9); Injuries (5 vs. 9); Chickenpox (9 vs. 6); Croup (5 vs. 4); Vomitinig (4 vs. 4); Pharyngitis (6 vs. 4); Streptococcal infection (2 vs. 4);

						Conjunctivitis (2 vs. 3); Eczema (6 vs. 1); Rash (5 vs. 2); Serous otitis media (4 vs. 2) Author reports harms separately from adverse health events: harm defined as failure to thrive, defined by a weight below the 3rd percentile at the end of the study period or a decrease in weight by at least 2 major percentile lines on the Centers for Diseases Control and Prevention growth charts. The gain in height and weight was significantly lower in children treated with fluticasone than in children given

						placebo, with a difference between the groups of 5 percentage points. Two children in the fluticasone group and 1 in the placebo group met the definition of failure to thrive; the number needed to harm was not significant. There were no significant group differences in the change in lumbar bone mineral density, bone mineral content, or bone age; low values for these and cortisol were normal when repeated or when corticotropin testing was performed.
Eboriadou 2010 Greece Funding NR	RCT, 3-arm Pediatric ED 1	Croup 6mo-5y	1) L-epinephrine 5.0ml (1 of 1:1000mg/ml), 5-10min (neb), n=25	Oxygen No CS in preceding 24h	Before treatment & at 15min, 20min, 60min, 90min &	The L-epinephrine group was the only group with side effects of

			2) Dexamethasone 0.6mg/kg (max. 8mg), single dose (IM), n=19 3) Beclomethasone dipropionate 200mcg (MDI), n=20		120min post-treatment; patients asked to return if relapse in next 24h	treatment. Tremor and tachycardia were observed in 4 children from Group A, who had received LE and were resolved after 2 hours, when the action of LE wear off.
Eden 1967 USA Industry funded	RCT Hospital 1	Croup 8mo-5y	1) Dexamethasone 0.10mg/kg at 0.1cc/kg/dose every 6h for 48h, total daily 0.40mg (IM), n=25 2) Control preparation 0.1cc/kg/dose every 6h for 48h (IM), n=25	Oxygen, humidity & tetracycline NR	Every 6h for total 48h	No untoward effects were noted. There were no episodes of congestive heart failure or sodium retention.
Escobedo Chavez 1992 Mexico Industry funded	RCT Hospital ED 1	Asthma 1mo-14y	1) Methylprednisolone 3.0mg/kg, single dose (IM) + placebo 4.5ml + sal 0.5ml every 4h (neb), n=25 2) Aminophylline 5.0mg/kg every 6h (IV) + sal 70 mcg/kg every 8h + oxygen (neb), n=25	Saline, salbutamol & oxygen No CS in preceding 15d	Baseline & discharge	We detected no side effects with the use of methylprednisolone in a single dose or any treatment failures that merited the use of methylxanthines or additional steroid doses.
Fifoot 2007 Australia	RCT, 3-arm	Croup 6mo-6y	1) Prednisolone 0.2ml/kg of 1.0mg/kg, single	Antipyretics or nebulized adrenaline	Baseline & hourly up	No patient suffered any adverse

Non-industry funded	Pediatric ED 1		dose (oral), n=34 2) Dexamethasone 0.2ml/kg of 0.15mg/kg, single dose (oral), n=34 3) Dexamethasone 0.2ml/kg of 0.6mg/kg, single dose (oral), n=31	No CS in preceding wk	to 4h post-treatment; FU 1wk by telephone following index visit	outcomes from receiving study steroid, either at index presentation or during the follow-up period. One patient from each group vomited their first dose of medication, all except one (dex 0.6mg/kg) tolerated second dose.
Fitzgerald 1996 Canada Industry funded	RCT Pediatric ED 3	Croup 6mo-6y	1) Budesonide 2.0mg (4ml) for 5min (neb), n=35 2) Adrenaline 4.0mg (4ml) for 5min (neb), n=31	Additional medications permitted 2h after study No CS in preceding 4wk	Baseline, 30min, 60min, 90min, 120min, 12h & 24h post-treatment	Six patients in each treatment group reported adverse events. These included vomiting, an erythematous rash, diarrhea, wakefulness, excessively active behavior, wheezing, and a nosebleed. These were minor and did not result in withdrawal from the study or require

						specific treatment.
Francis 1997 Australia Funding NR	RCT (trial registry data) Acute care setting 4	Asthma ≤48mo	1) Fluticasone propionate 1.0mg twice daily (neb) + placebo tablets once daily (oral) for 7d, n=37 2) Prednisolone (dose NR) daily for 7d (oral), n=19	NR No CS treatment for >7d in preceding 4wk	D1 to D7	Most frequent adverse events – on-therapy, n (FP vs. pred): Nausea & vomiting (7 vs. 1); Diarrhoea (3 vs. 0); Normal tooth eruption (2 vs. 1); Ear, nose and throat infections (2 vs. 0); Psychomotor disorders (2 vs. 0); Temperature regulation disturbances (2 vs. 0); Asthma (1 vs. 2); Hoarseness/dysphonia (0 vs. 2); Serious adverse events - on-therapy: Subjects with non-fatal SAEs (2 vs. 0): Ketonuria, glycosuria and hyperglycaemia (1 vs. 0);

						Subjects with fatal SAEs (0 vs. 0)
Garbutt 2013 USA Non-industry funded	RCT Primary care office 10	Croup 1-8y	1) Dexamethasone 0.6mg/kg (max. 18mg), single dose, followed by placebo for 2d, 2 doses total (oral), n=46 2) Prednisolone 2.0mg/kg/d (max. 60mg/d) for 3d (oral), n=41	Acetaminophen & ibuprofen No CS preceding current croup episode	FU interviews at D1 to D4 & D11; FU chart review within 28d of index visit	No serious adverse events occurred. Study groups did not differ in reporting side effects from the study medications (24% dexamethasone, 26% prednisolone, P = 1.0; Table 4). The most common side effects identified with specific questioning were mood changes (57%), sleep problems (36%), stomach pain (19%), and headache (13%). Table 4 adverse events, n (dex vs. pred): A side effect at D11 (11/45 vs. 10/39); Mood changes (25 vs. 24);

						New sleep problems (18 vs. 13); Stomach pain (9 vs. 7); Headache (7 vs. 4); Vomiting (3 vs. 7); Nausea (3 vs. 4); Dizziness (3 vs. 2); Tremor (1 vs. 0)
Ghirga 2002 Italy Funding NR	NRCT NR, "ambulatory infants" 1	Wheeze - early URTI before signs of wheeze 7-12mo	1) Beclomethasone 400mcg 3 doses daily for 5d (neb), n=12 2) Control (no intervention), n=13 Multiple courses - 4 treatment periods of 5d (12 infants completed 48 treatment periods in group 1)	NR NR	Twice daily	At this writing, four years after the study was completed, no apparent adverse effects were reported. Plasma cortisol measured in four patients receiving at least 2 treatment periods of 5 days a month was normal.
Gill 2017 Canada Funding NR	Cohort Pediatric hospital ED 1	Croup >2y (mean 4.7y vs. 4.8y)	1) Dexamethasone 0.6mg/kg (max 12mg), single dose, n=22 2) Controls diagnosed with viral URTI (no dexamethasone	NR No chronic glucocorticoid therapy or any glucocorticoids within 10d of ED visit	AM of admission & D1, D3 & D7	Single-dose oral dexamethasone 0.6mg/kg for croup is not associated with decreased endogenous glucocorticoid

			or antibiotics), n=5			levels in children. A 3-year-old previously healthy boy returned to the ED within 24 hours and was given a diagnosis of pneumonia. He was discharged home from the ED with oral antibiotics, and his symptoms resolved by 7 days. The other, also a 3-year-old boy, returned to the ED 4 days after dexamethasone administration for unilateral facial swelling. Serologic testing for paramyxovirus (mumps) was negative, and he was given a diagnosis of viral parotitis. His symptoms resolved by 7

						days. Four participants visited their primary care physician within 7 days of dexamethasone administration. One patient was healthy, another was given a diagnosis of otitis media and treated with oral antibiotics, and two patients who had persistent coughs were prescribed salbutamol. None of the participants were admitted to hospital, and there were no serious adverse events or deaths.
Goebel 2000 USA Funding NR	RCT Pediatric ED or children's clinic 2	Bronchiolitis ≤23mo	1) Prednisone 2.0mg/kg/day for 5d (oral) + albuterol 0.3mg/kg/day (or 0.15mg/kg/dose (neb)) for 5d (oral), n=24	NR NR	Clinical scores on D0, D2, D3 & D6; FU when convalescence completed	One patient in the prednisolone group was observed by his caretakers to be "jittery" at times after enrollment.

			2) Placebo solution (oral) + albuterol 0.3mg/kg/day (or 0.15mg/kg/dose (neb)) for 5d (oral), n=24			This resolved after a decrease in the albuterol dose. No evidence of treatment complications was observed in any of the other patients.
Grant 1996 USA Non-industry funded	Cohort Primary care clinic & teaching hospital ED 1	Asthma 2-14y	1) Prednisone 2.0mg/kg (max. 60mg/day), single dose intermittent for 6mo (oral), n=86 2) Placebo (NR), n=86 Multiple courses over 1yr	Bronchodilators as needed NR	NR	Ninety-four episodes of acute infection occurred in 50 subjects and 222 episodes of symptoms of infection occurred in 62 subjects (table 1 episodes of infection, number of doses, and association between doses and frequency of infection). No difference was observed in the mean number of doses of prednisone received by those with the infection compared with those

						without the infection. No correlation was observed between the number of doses of prednisone received and the number of episodes of each infection. This included all episodes of otitis media, streptococcal pharyngitis, pneumonia, and urinary tract infection; eight (73%) episodes of chickenpox; eight (57%) episodes of skin infections; and 14 (88%) episodes of ringworm.
Gries 2000 USA Funding NR	RCT Tertiary care center 1	Asthma 6mo-7y	1) Dexamethasone 1.7mg/kg/dose single dose, (IV), n=15 2) Prednisolone 2.2mg/kg/dose, twice daily for 5d (oral), n=17	Albuterol No CS in preceding 2wk	D3, D5, D7, D14 & D28; Urinary cortisol/creatinine assessed by radioimmunoassay (standard methods) on D14	Ten of the 17 children who received PO Pred took the prednisone without much difficulty. However, 3 children missed more than 75% of their doses

						because of refusal to take their medicine, and another 4 missed approximately one third of the doses despite force and coaxing by their parents. There were no complications from the IM injections including no cases of persistent swelling, bruising, soreness, or atrophy at the injection site. Patients with any personality changes within the first 5 days (%): IM dex - 10/14 (71); oral pred - 14/16 (87). The median urinary cortisol/creatinine value for the IM Dex group was lower than that for the

						PO Pred group, but this difference was not statistically significant.
Hedlin 1999[1] Sweden Funding NR	RCT Pediatric hospital 1	Asthma – first sign of URTI 1-3y	1) Budesonide 400mcg, 4 times daily for 3d then twice daily for 7d (MDI), n=9 2) Placebo, 4 times daily for 3 days then twice daily for 7d (MDI), n=11 Multiple courses over 1yr, or max. 6 treatments *subgroup of children from Svedmyr 1999 with therapeutic failure from budesonide given 3d course (6.0mg, 4.0mg, and 2.0mg on respective days) of oral betamethasone	Beta-agonists and/or theophylline NR	D10 & D13; Routine height measurements (assessment method NR) were taken (timing of assessments NR); Serum cortisol (on D8-10 of second course of study medication, morning of day after third dose, and at 12-14d after therapy) and urinary cortisol/creatinine (in the night after third dose of betamethasone and at 12-14d after therapy)	There were no significant differences between pretreatment and post-treatment serum cortisol, osteocalcin, ICTP and urine cortisol/creatinine ratio in the groups, (the comparison was made in the children who had assessments before and after budesonide/placebo) nor were there any significant differences between the active and placebo treated groups. It was, however, noteworthy that the urine cortisol/creatinine ratio decreased in

					assessed by radioimmunoassay	5/6 children studied in the active group and in 4/10 in the placebo group. Neither this change nor the difference was statistically significant. PIIINP decreased after both budesonide and placebo treatment periods ($p< 0.05$). Short courses of oral betamethasone have pronounced systemic effects, whereas 10d of high doses of budesonide do not produce significant systemic effects.
Husby 1993 Denmark Funding NR	RCT Pediatric hospital 1	Croup 3mo-4.9y	1) Budesonide 1000mcg (2ml 500mcg/ml), two doses 30min apart (neb), n=20 2) Placebo saline 0.9% (2ml), two	Antibiotics No CS preceding study	Baseline & 2h post-treatment	No side effects were reported.

			doses 30min apart (neb), n=16			
Inglis 1993 USA Funding NR	Case report, 2 Hospital	Croup 18mo; 14mo	Case 1) Prednisolone 1.0mg/kg, twice daily for 4d (NR) Case 2) Dexamethasone 0.3mg/kg, 3 doses in 24h (NR)	Case 1: racemic epinephrine, acyclovir sodium Case 2: amoxicillin/clavulanate potassium, cefuroxime sodium	NR	Case 1: Twenty days into illness, airway endoscopy revealed shallow mucosal ulcerations of patient's glottis and subglottis, but a normal appearing tracheobronchial tree. Cultures were positive for HSV-1, Staphylococcus aureus and a-hemolytic streptococcus; Case 2: On day 11 of illness, airway endoscopy revealed severe subglottic edema and ulceration, purulent tracheal secretions, but normal tracheal mucosa. A tracheal aspirate

						produced a moderate growth of a-hemolytic streptococci and a few yeast. A swab of the subglottic region showed growth of HSV-1 but no respiratory syncytial virus, influenza A or B, or parainfluenza viruses. The patient required intubation postoperatively and was started on a regimen of nafcillin sodium and dexamethasone sodium phosphate, 1.5mg/kg per day. She was extubated after 48 hours and the dexamethasone therapy was discontinued. Her stridor gradually resolved

						spontaneously over the next 7 days without further intervention.
Jan 2000 Taiwan Funding NR	Non-RCT Pediatric hospital clinic 1	Asthma NR	1) Group A: Methylprednisolone 1.0mg/kg/6h (IV) for 1d, n=NR 2) Group B: Methylprednisolone 1.0mg/kg/6h (IV) for 2d, n=NR 3) Group C: Methylprednisolone 1.0mg/kg/6h (IV) for 3d, n=NR	NR NR	D1 to D3	An acute effect of glucocorticoid therapy on the suppression of osteoblasts was biochemically revealed by the finding of reduced serum osteocalcin levels; this suggests that early change in serum osteocalcin may be a useful indicator for patients at high risk of bone loss. Levels of serum osteocalcin progressively declined with increasing duration of GC therapy, with tendency toward a decrease of serum phosphate.

						However, serum calcium levels remained unchanged before and after therapy. Osteocalcin levels (µg/L): Group A - 2.7 +/- 3.; Group B - 2.2 +/- 1.9; Group C - 1.8 +/- 1.5
Jartti 2006 Finland Non-industry and industry funded	RCT Pediatric hospital 1	First or second wheeze episode 3mo-35mo	1) Prednisolone 5.0mg tablets, first dose 2.0mg/kg then 2.0mg/kg/day in 3 divided doses for 3d (oral), n=46 2) Placebo tablets, in 3 divided doses for 3d, n=32	Albuterol, beta-2-agonists, antibiotics, & racemic epinephrine No CS in preceding 4 weeks	Study entry & twice daily during hospitalization, daily diary notes for 2wk post-discharge; FU visit & phone call 2wk post-discharge	The prednisolone treatment was well tolerated. No clinically significant adverse effects occurred.
Jartti 2007 Finland Non-industry and industry funded	RCT Pediatric hospital 1	At least third wheeze 3mo-7y	1) Prednisolone 5.0mg tablets, first dose 2.0mg/kg then 2.0mg/kg/day in 3 divided doses for 3d (oral), n=23 2) Placebo for 3d, n=35	Salbutamol & antibiotics No CS in preceding 4wk	Study entry & twice daily during hospitalization, daily diary notes for 2wk post-discharge; FU visit & phone call 2wk post-discharge	The prednisolone treatment was well tolerated. No clinically significant adverse effects occurred.
Jartti 2015 Finland	RCT	Wheeze – first acute	1) Prednisolone first dose 2.0mg/kg, then	NR	2wk daily diary; FU at 2wk, 2mo &	There were no differences in the

Non-industry and industry funded	University hospital 1	rhinovirus-induced 3-23mo (mean 13.2mo vs. 12.2mo)	2mg/kg/d in 2 divided doses for 3d (max. 60.0mg/day), n=34 2) Placebo, n=40 Multiple courses over 1yr	No previous systemic or inhaled CS treatment	12mo post-discharge	incidence of adverse events between the prednisolone and placebo groups (results not shown). No clinically significant adverse events were reported.
Johnson 1996 Canada Non-industry funded	RCT Pediatric ED 1	Croup mean 15mo vs. 17mo	1) Dexamethasone 10.0mg (4ml) - 10.0mg (<8kg), 15.0mg (8-12kg) or 20.0mg (>12kg), 10min (neb), n=28 2) Control, saline (4ml), 10min (neb), n=27	Humidified oxygen No CS in preceding 2wk	Baseline, 2h & 4h post-treatment	Two patients with neutropenia treated with dexamethasone had a clinical course consistent with bacterial tracheitis.
Johnson 1998 Canada Industry funded	RCT Pediatric ED 2	Croup 3mo-9y	1) Budesonide 4.0mg for 20min (neb), n=48 2) Dexamethasone 0.6mg/kg, single dose (IM), n=47 3)Placebo suspension, single dose for 20min (neb), n=49	Racemic epinephrine & mist therapy No CS in preceding 4wk	Study entry & hourly for 5h post-treatment until discharge; FU 72h post-discharge	No child had gastrointestinal bleeding or bacterial tracheitis.
Klassen 1994 Canada Non-industry funded	RCT Pediatric ED 1	Croup 3mo-5y	1) Budesonide 2.0mg (4ml), single dose (neb), n=27 2) Placebo saline 0.9%	Racemic epinephrine or dexamethasone, or oxygen tent	Baseline & hourly for 4h; FU at 1wk	No adverse events were noted in the budesonide group. No patient in that

			(4ml), single dose (neb), n=27	No CS in preceding 2wk		group had clinical deterioration, either in the emergency department or after discharge. One patient in the placebo group had a burning sensation on the face.
Klassen 1996 Canada Non-industry funded	RCT Pediatric ED 1	Croup 3m-5y	1) Dexamethasone 0.6mg/kg (oral) + budesonide 2.0mg (4ml) (neb), n=25 2) Dexamethasone 0.6mg/kg (oral) + placebo saline 0.9% (4ml) (neb), n=25	Racemic epinephrine & croup tent No CS in preceding 2 weeks	Baseline & hourly for 4h; FU 1wk	Two patients in the budesonide group and 1 patient in the placebo group vomited their initial doses of dexamethasone within 30min and required readministration of dexamethasone, which was subsequently tolerated in all 3 patients.
Klassen 1998 Canada Non-industry funded	RCT Pediatric ED 2	Croup 3mo-5y	1) Budesonide 2.0mg (4ml) (neb) + placebo syrup (oral), n=65 2) Dexamethasone 0.6mg/kg (oral) + placebo saline 4ml (neb), n=69	Epinephrine, supplemental glucocorticoids & mist therapy No CS in preceding 2wk	Baseline & hourly for 4h; FU 1wk post-enrolment	All parents were asked about the presence of oral thrush and only 1 parent whose child was in the budesonide group

			3) Budesonide 2.0mg (4ml) (neb) + dexamethasone 0.6mg/kg (oral), n=64			reported this condition at the 1-week follow-up. Parents of 1 patient treated with dexamethasone reported hives, and parents of 1 patient treated with dexamethasone reported violent behavior. Parents of 1 patient who had received budesonide and dexamethasone reported their child to be more hyperactive than usual.
Kuyucu 2004 Turkey Funding NR	RCT Pediatric outpatient clinic and ED 1	Bronchiolitis 2-21mo	1) Epinephrine 3ml of 1:1000 solution for 10min (neb) + dexamethasone 0.6mg/kg, single dose (IM), n=23 2) Sal 0.15mg/kg of 1mg/ml solution added to 0.9% saline for 10min (neb) + dexamethasone 0.6mg/kg, single dose (IM), n=23	NR No CS in preceding 2wk	Baseline, 30min, 60min, 90min & 120min, then 24h, 5d; FU by regular hospital visits in subsequent 2mo	No side-effects such as pallor, vomiting or tremor were encountered in the patients.

			3) Epinephrine 3ml of 1:1000 solution for 10min (neb) + placebo saline, single dose (IM), n=11 4) Sal 0.15mg/kg (1mg/ml solution added to 0.9% saline) for 10min (neb) + placebo saline, single dose (IM), n=12			
Lai 2005 China Funding NR	RCT Hospital pediatric inpatient ward 1	Asthma 1-5y	1) Budesonide 0.05mg/kg every 12h (neb), n=9 2) Dexamethasone 0.1mg/kg every 8h (neb), n=9 Multiple courses over 8-19mo	Terbutaline (as needed) 0.25mg/kg every 6h to a max. of 5.0mg NR	On admission, at discharge & at follow-up; Growth (mean height) assessed (assessment method NR) at baseline and approximately 8-19mo after randomization; Adrenal suppression assessed from blood pressure (systolic	The measures of blood pressure (systolic and diastolic), blood glucose and serum potassium revealed no significant changes between admission and discharge in either group of patients (Table 3). Thus, there were no adverse effects in these patients. Table 4 also shows that there were no significant differences in

					and diastolic) and blood glucose at baseline and approximately 8-19mo after randomization	total height growth, mean rate of height increase, systolic or diastolic blood pressure, or blood glucose between the treatment groups.
Langton Hewer 1998 UK Funding NR	RCT Hospital 1	Asthma 1-15y	1) Prednisolone 0.5mg/kg/day until discharge (max. 60.0mg/day) (oral), n=35 2) Prednisolone 1.0mg/kg/day until discharge (max. 60.0mg/day) (oral), n=33 3) Prednisolone 2.0mg/kg/day until discharge (max. 60.0mg/day) (oral), n=30	Bronchodilators (nebulized) No CS in preceding 14d	Baseline, 0h, 12h, 24h, 36h, 48h, 60h & 72h; FU 2wks post-enrollment	No serious short-term side-effects were noted but hyperactivity related to nebulized B2 agonist therapy was seen. No side-effect possibly attributable to prednisolone therapy was noted in any of the three treatment groups. Three children in prednisolone 2.0mg group were withdrawn because of vomiting, a diagnosis of pneumonia or the parents

						withdrew consent.
Lee 2001 Taiwan Funding NR	Case report Pediatric clinic of hospital 1	Asthma 5y	1) Terbutaline solution (loading dose: 5.0mg/kg/dose, maintaining dose: 0.6mg/kg/h); Methylprednisolone (BW 21kg, 2.0mg/kg/dose, 40.0mg every 6h) (IV), and; Procaterol 12.5mcg twice daily (oral)	NR	D1 to D3	On day 3 of admission the patient was found to have major behaviour changes and hyperventilation. She started screaming unreasonably, gazing forward and sometimes upward and became panic. She had visual hallucinations and delusion.
Leer 1969 USA Industry funded	RCT Hospital 5	Bronchiolitis <30mo	1) Betamethasone, 1.0mg/5lb first dose and 0.5mg/5lb every 12h (total 3.5mg/5lb (6 doses) for 72h) (IM/IV), n=148 2) Aqueous vehicle, 5cc every 12h for 72h for total 6 doses (IM/IV), n=149	Mist, oxygen, parenteral fluids & antibiotics NR	Clinical signs every 6h	There were no detrimental corticosteroid effects in any of the patients. The corticosteroid neither increased the incidence of staphylococcal or other bacterial pneumonias nor masked superinfections.
Lehmann 2008 Germany Funding NR	Case report Pediatric	Asthma 2y	1) Prednisolone-21-hydrogen	None 3wk washout period (but under	Post skin prick test	Patient had been on well-tolerated long-term

	Allergology Clinic 1		succinate (PSH) 50.0mg (IV) 2) Prednisone (100.0mg, suppository) 3) Betamethasone (dose NR, oral) 4) Dexamethasone (dose NR, IV)	long-term maintenance therapy of daily 100mcg fluticasone propionate (inhaled) and intermittent prednisone suppositories		therapy of 100mcg inhaled fluticasone dipropionate daily for frequently recurring episodes of asthmatic exacerbations, with intermittent prednisone suppositories for acute bronchopulmonary obstruction with no occurrence of adverse events and no other glucocorticoid preparations. Patient was admitted to department due to severe bronchospasm (neither bronchodilators nor rectally administered prednisone provided symptom relief) and given 50mg of prednisolone-21-hydrogen succinate intravenously.

						Within a few minutes the boy developed generalized urticaria, facial angio-oedema, nausea and severe dyspnea requiring nasal oxygen supplementation. Medication was interrupted and symptoms spontaneously resolved within 30 minutes. Testing with PSH at a dilution of 1:10 elicited a positive result (wheal diameter 6 mm), whereas no reactions were observed to prednisone, betamethasone or dexamethasone. An oral provocation test with betamethasone and a

						titrated intravenous dexamethasone challenge test were tolerated without any complications.
Leipzig 1979 USA Funding NR	RCT Hospital 2	Croup 8mo-5y	1) Dexamethasone 0.3mg/kg (4mg/ml) 2 doses 2h apart (IM), n=16 2) Placebo saline, two doses 2h apart (IM), n=14	Vaponephrine, mist tent therapy & racemic epinephrine NR	Baseline, 12h & 24h NR	We observed no adverse effects or late relapses.
Lin 1991 Taiwan Funding NR	NRCT Hospital 1	Acute wheeze <36mo	1) Group A: <12mo old (n=29): hydrocortisone 5.0mg/kg loading dose (IV) plus 2.5mg/kg/dose every 6h for 3d + meptin liquid (procaterol hydrochloride) 1.25mcg/kg/dose on admission, then twice daily (oral) 2) Group B: >12mo old (n=23): hydrocortisone 5.0mg/kg loading dose (IV) plus 2.5mg/kg/dose every 6h for 3d + meptin liquid	IV fluid, oxygen & antibiotics NR	Daily for 5d	Regarding side effects, two patients in Group B and one patient each in Groups A and C had tremor. One patient in Group A had irritability, and another had diarrhea.

			(procaterol hydrochloride) 1.25mcg/kg/dose on admission, then twice daily (oral) 3) Group C: No hydrocortisone or procaterol (n=28)			
Lucas-Bouwman 2001 Netherlands Funding NR	RCT Hospital 1	Asthma 3mo-8y (mean 2y)	1) Prednisolone 1.0mg/kg tablets, twice daily for 5d (oral), n=NR 2) Prednisolone 1.0mg/kg solution, twice daily for 5d (oral), n=NR	Bronchodilators (inhaled) NR	6d to 8d after index visit	Vomiting was observed in 23% of patients using crushed tablets, and in none of the patients on oral solution.
Nahum 2009 Israel Funding NR	Case series (n=3, 1 case relevant) Pediatric ED 1	Asthma 5y	1) Methylprednisolone 2.0mg/kg for 2d (IV)	NR	D1 & D2; FU 3mo post-discharge	He presented with wheezing, received an intravenous bolus of methylprednisolone sodium succinate (2mg/kg), and immediately developed restlessness and facial rash which resolved spontaneously. On the following day, he received again the same medication and

						immediately developed respiratory distress and cyanosis with oxygen desaturation of 89%. He recovered with oxygen supplementation and was treated afterward with oral betamethasone sodium phosphate without adverse events.
Paniagua 2016 Spain Funding NR	RCT (conference abstract) Pediatric ED 1	Asthma >12mo	1) Dexamethasone, NR, 2 doses (oral), n=287 2) Prednisone/prednisolone, NR, 5d (NR), n=290	NR NR	NR; FU at 7d & 15d post-ED visit	No differences were found regarding vomits (2.1% vs 4.1%).
Panickar 2009 UK Non-industry funded	RCT Pediatric ED 3	Wheeze 10-60mo	1) Prednisolone 10.0mg/day (10ml) once daily for 10-24mo old (oral); 20.0mg/day (10ml) once daily for >24mo old (oral), for 5d, n=343 2) Placebo solution (10ml) once daily for 5d (oral), n=344	Albuterol, oxygen & antibiotics NR	4h, 12h & 24h after albuterol & daily post-discharge; FU by phone 1mo post-discharge	No clinically significant adverse events were reported to the patient safety committee. In one child in the prednisolone group, parents attributed excess

						vomiting to the study drug and discontinued the medication after discharge from hospital.
Panigada 2014 Italy Funding NR	Case report Pediatric Pulmonary and Allergy Unit 1	Progressive shortness of breath, subsequent diagnosis of inflammatory myofibroblastic tumor cell proliferation 5y	Albuterol (inhaled) + prednisone 1.0mg/kg (28.70kg) (oral), n=1	NR NR	NR	The child was sent home on inhaled albuterol and prednisone to be tapered and discontinued after 7-10 days. Fifteen days after first presentation, 1 day after the discontinuation of prednisone, the boy was readmitted because of progressive shortness of breath. He had moderate-to-severe dyspnoea, inspiratory, and expiratory wheezes: SaO2 was 97% in room air, RR 39 breaths/min.

						Spirometry demonstrated to significant changes in FVC (1.43L), a decrease in FEV1 (1.29L) and a "box-shaped" flow/volume loop, consistent with fixed large airway obstruction. A computed tomography (CT) scan showed an endoluminal mass in the superior portion of the trachea, 15mm from glottis, nearly completely occluding the lumen. Tracheostomy was performed, followed by bronchoscopy . Histological examination of the biopsies showed spindle cells surrounded by collagenous stroma,

						displaying strong positivity for vimentin, focal positivity for a-smooth muscle actin, and weak positivity for clusterin. No desmin, ALK, S100, CD21, and CD 23 expression was detected. A diagnosis of IMT of the trachea was performed and a complete surgical resection of the neoplasm was carried out.
Plint 2009 Canada Non-industry and industry funded	RCT Pediatric ED 8	Bronchiolitis 6wk-12mo	1) Epinephrine 3ml 1:1000, 2 doses 30min apart (neb) + dexamethasone 1.0mg/kg (max 10mg) in ED plus 5 once-daily 0.6mg/kg/dose, total 6d (oral), n=200 2) Epinephrine 3ml 1:1000, 2 doses 30min apart (neb) + placebo, total 6d (oral), n=199	Bronchodilators (albuterol, epinephrine) & antibiotics No CS in preceding 2wk	Baseline to 30min, 60min, 120min & 240min; FU daily until D7, then every 2d until D14 & every 3d until D22	Adverse events were uncommon (see Supplementary Appendix). Pallor was reported in 76 infants (9.5%), tremor in 15 (1.9%), and vomiting in 14 (1.8%), with no significant differences among the groups. One hospitalized

			3) Placebo 2 doses 30min apart (neb) + dexamethasone 1.0mg/kg (max 10mg), total 6d (oral), n=200 4) Placebo 2 doses 30min apart (neb) + Placebo solution (max 12ml), total 6d (oral), n=201			infant in group 2 and one in group 3 had mild, transient hypertension, which resolved rapidly. Supplementary table: side effects and adverse events, n (Epi + Dex vs. Epi vs. Dex vs. Placebo): Tremor (4 vs. 4 vs. 5 vs. 2); Pallor (23 vs. 22 vs. 15 vs. 16); Vomiting (2 vs. 4 vs. 5 vs. 3); Varicella (0 in all groups); Dark stools (17 vs. 14 vs. 12 vs. 16); Hypertension (0 vs. 1 vs. 1 vs. 0); Hyperkalemia (0 vs. 0 vs. 1 vs. 0)
Razi 2015 Turkey Funding NR	RCT Hospital 1	Asthma 7-72mo	1) Budesonide 1.0mg/2ml, 2 doses for up to 5d, n=50 2) Sterile saline 2ml, 2 doses for up to 5d, n=50	Standard care: methylprednisolone 1.0mg/kg/day, for up to 5d (IV) + sal 0.15mg/kg every 4h + ipratropium bromide 250mcg every 6h	Every 4h until discharge	No drug-related adverse effects were identified during hospitalization.

				NR		
Roberts 1999 Australia Industry funded	RCT Women's and Childre n's Hospita l 1	Croup 6mo-8y	1) Budesonide 2.0mg (4ml) for 10min each dose, every 12h (max. 4 doses) (neb), n=42 2) Placebo for 10min each dose, every 12h (max. 4 doses) (neb), n=40	NR No CS in preceding 4wk	Baseline, 2h, 6h & 12h after first dose, then 12-hourly up to 48h if in hospital; FU by telephone 1d & 3d post-discharge	The adverse effects in both groups were attributable to either manifestation s of the disease state or the mode of drug administratio n (Table 3). Four patients (3 placebo, 1 budesonide) experienced an exacerbation in symptoms to the point of causing interventional treatment mode outside of the protocol nebulised adrenaline). These exacerbations occurred shortly after beginning nebulisation and were apparently induced due to distress caused by using the nebuliser mask. All four

						of these patients had severe croup symptoms (croup score >=8) at the time of nebulisation. The nebuliser mask was poorly accepted in up to 18% of patients in this study if the four exacerbations were considered to be mediated by nebuliser-induced emotional distress. Table 3 adverse effect profile, n (Bud vs. placebo): Emotional distress (5 vs. 6); Vomiting (2 vs. 3); Rash (0 vs. 2); Eye irritation (1 vs. 1); Irritated tongue (0 vs. 1)
Roorda 1998 Netherlands Funding NR	RCT Hospital NR	Croup 4-52mo	1) Fluticasone propionate 1000mcg, 2 divided doses	NR No CS in preceding 48h	Admission, 30min, 2h, 6h, 12h & 24h	No side effects of the treatment regimens were reported

			30min apart (MDI), n=9 2) Placebo (NR), n=8			during the study.
Roosevelt 1996 USA Non-industry funded	RCT ED 1	Bronchiolitis <12mo	1) Dexamethasone 1.0mg/kg every 24h for max. 3 doses (IM), n=65 2) Placebo saline, every 24h for max. 3 doses (IM), n=53	Antibiotics, bronchodilators & tribavirin NR	Admission & every 12h; FU 1wk post-discharge	Three patients had occult blood in their stools; two were in the dexamethasone group. No episodes of gross haematochezia were observed.
Sadowitz 2012 USA Funding NR	Case series (n=4, 1 case relevant) ED 1	Pharyngitis 3y	Dexamethasone 10.0mg single dose (oral?) + acetaminophen + amoxicillin, n=1	NR NR	NR	The patient was given a 10-mg dose of dexamethasone in addition to acetaminophen and amoxicillin; she was able to tolerate liquids and was discharged. The patient returned to the ED 2 days later with persistent complaints of fever and sore throat, now with an inability to tolerate oral fluids. Pertinent

						physical examination findings included pulse rate of 166 beats per minutes; oral temperature of 40.3 degrees C; dry, erythematous mucous membranes with blood clots; and sores over the tonsils and posterior oropharynx. The tonsils had markedly enlarged from the previous visit. Multiple petechiae were present on the soft palate, with blood noted to be oozing from gums after throat exam. No palpable lymph nodes were found. A completed blood cell (CBC) count demonstrated a white blood cell (WBC) count of 16.4

						x 10^9/L with 50% blasts on the peripheral smear, platelet count of 6 x 10^9/L, and hemoglobin level of 9.8 g/dL. The patient received 2 fluid boluses of normal saline and was admitted to to the pediatric intensive care unit (PICU) and intubated for airway protection because of rapidly enlarging tonsils. Bone marrow aspiration demonstrated acute lymphocytic leukemia (ALL). The patient was placed in the high-risk treatment group because of dexamethasone administration before the

						diagnosis of ALL and in the absence of a pretreatment CBC count following the guidelines for high-risk leukemia established by the Children's Oncology Group. Induction therapy include IV daunorubicin, decadron, asparaginase, and vincristine. The patient's initial course of treatment was complicated by a ruptured duodenal ulcer with peritonitis and osteonecrosis. The patient survived these complications and achieved remission and continues on maintenance chemotherap y at this time.
Saito 2017 Japan Funding NR	RCT Pediatri c	Asthma <3y	1) Budesonide 1.0mg/dose,	At admission, received hydrocortisone (IV)	Daily;	Serum cortisol levels in the BIS and PSL

	depart ment of hospital 1		twice daily (neb), n=30 2) Prednisolone 0.5mg/kg, 3 times daily (IV), n=20	& one inhalation of procaterol; LTRA for wheezing episodes NR	Serum cortisol assessed (assessmen t method NR) on admission and D4 of hospitalizati on	groups at the time of admission were 15.0mcg/dL and 17.2mcg/dL (p>0.05), respectively. However, serum levels on the fourth day of hospitalizatio n were 17.0mcg/dL and 10.9mcg/dL, with significant suppression in the PSL group. Adverse events did not occur in either group.
Schuh 2008 Canada Non-industry funded	RCT Pediatri c ED 1	Bronchiolitis 8wk-23mo	1) Dexamethasone 1.0mg/kg in ED + 4 doses 0.15mg/kg starting 24h later, total 5d (oral), n=61 2) Dexamethasone 1.0mg in ED + 4 doses placebo syrup starting 24h later, total 5d (oral), n=64	Albuterol Baseline reports 3 patients with prior inhaled ICS	Baseline, D4 & D6 (home visits); FU by telephone on D28	The mean blood pressure increased from 96.1+/-8.8 mmHg to 99.5+/-14.8 mmHg in the single-dose group and from 96.4+/-7.9 mmHg to 103+/-16.8mmHg in the multiple dose group. Bag urine was obtained on

						day 6 visit in 47 study infants and tested positive for glucose in 1 child belonging to the multiple-dose group.
Schuh 2009 Canada Industry funded	RCT Pediatric ED 1	Asthma >=2y	1) Montelukast 1.0mg/kg: 2-5y=4.0mg; 6-14y=5.0mg; and, 15-17y=10.0mg at 24h, 48h, 72h, 96h & 120h (oral), n=67 2) Prednisone/prednisolone 1.0mg/kg: 2-5y=4.0mg; 6-14y=5.0mg; and 15-17y=10.0mg at 24h, 48h, 72h, 96h & 120h (oral), n=63	Albuterol & fluticasone >1 single dose or oral prednisolone or >250mcg per day of inhaled fluticasone within 72h	48h & D8	In the montelukast group, adverse effects developed in 3 patients. One patient experienced facial swelling of unknown etiology at 96 hours, another patient had vomiting and diarrhea at 72 hours, and the third patient complained of abdominal and leg pains on day 4. None of these patients required treatment for these events, and the relationship between montelukast and the

						‘‘event’’ is questionable. No adverse effects developed in the children given prednisolone after discharge.
Siomou 2003 Greece Industry funded	Case control, 3-arm Pediatric hospital 1	Bronchiolitis, viral wheezing, or croup 2mo-10y	1) Hydrocortisone 10.0mg/kg/day for 3d (NR), n=28 2) Methylprednisolone 2.0mg/kg for 3 days (NR), n=21 3) Control, 3d, n=51	NR Never/no CS in last 2mo	Baseline, 2 days after CS administration & 12d after end of therapy	In summary, short-term IV corticosteroid administration to children suffering from acute respiratory diseases led to partial but reversible inhibition of bone formation markers, especially detectable in the >1-year-old children, without affecting the bone resorption markers. The fall in the serum phosphate levels and decrease in the maximum renal phosphate reabsorption decrease in

						the maximum renal phosphate reabsorption were significant but transient.
Sparrow 2006 Australia Funding NR	RCT Pediatric ED 1	Croup mean 37mo (28.8) vs. 45mo (31.6)	1) Dexamethasone 0.2ml/kg of 0.15 mg/kg, single dose (oral), n=68 2) Prednisolone 0.2ml/kg of 1.0mg/kg, single dose (oral), n=65	Adrenaline No CS preceding study	Enrolment, 30min post-treatment, hourly for next 4h & every 4h until discharge; FU 7d-10d post-discharge	No adverse events were noted in either group.
Stafford 1998 Australia Industry and non-industry funded	NRCT Pediatric hospital or ED 1	Asthma/croup 1-12y	1) Prednisolone 5.0mg/ml solution (oral), n=8 2) PredMix 5.0mg/ml solution (oral), n=46 3) Dexamethasone 5.0mg/ml (oral), n=80	NR NR	Daily	No significant differences were found regarding the incidence of nausea, vomiting and abdominal pain, or any of the objective parameters tested.
Storr 1987 UK Non-industry & industry funded	RCT Pediatric hospital 1	Asthma NR (mean 5y)	1) Prednisolone 30.0mg (<5yo), otherwise 60.0mg, max. dose 3.0mg/kg (range 1.0-3.0mg/kg) single dose (oral), n=67 2) Placebo solution identical to treatment,	Salbutamol 5.0mg in 2ml saline (neb), on admission & 3 times or more daily when indicated No CS in preceding 48h	Admission, 4h, 12h, 24h & 36h	Prednisolone has a bitter aftertaste. Most children disliked the drink. 2 children in each group vomited almost immediately and were consequently excluded.

			single dose (oral), n=73			There were no observed side-effects related to the single prednisolone dose.
Sumboonnanonda 1997 Thailand Funding NR	RCT Pediatric hospital 1	Croup <5y	1) Dexamethasone 0.5mg/kg/d, 3d (IM/IV), n=14 2) Control, n=18	Aerosolized adrenaline, antibiotics, IV fluid & cool mist NR	Admission, 24h & 48h; FU 3wks post-discharge	Complications included pneumonia in 4 controls, Acinetobacter sepsis in 1 control and bacterial tracheitis in 1 cases.
Sung 1998 Canada Non-industry funded	RCT Tertiary pediatric hospital 1	Asthma >6mo or <18y	1) Budesonide 4000mcg (4ml), single dose (neb), n=24 2) Placebo, single dose (neb), n=20	Salbutamol 0.15mg/kg every 30min for 3 doses, then hourly for 4 doses	Baseline, discharge & 7d to 10d post-treatment	No adverse effects were noted in either group.
Super 1989 USA Funding NR	RCT General hospital or children's hospital 2	Croup NR (mean 16mo)	1) Dexamethasone 0.6mg/kg, single dose (IM), n=16 2) Placebo saline, single dose (IM), n=13	Mist, racemic epinephrine, oxygen & antibiotics	Baseline, 30min, and every 12h until discharge	In two dexamethasone-treated patients in the main study, including one with a culture-positive influenza A viral infection, laryngotracheitis progressed to pneumonia. The other patient was the one who received a second

						injection of dexamethasone. At the time of his second injection, he had roentgenographic evidence of pneumonia. We did not encounter any side effects directly attributable to dexamethasone.
Sussman 1964 USA Non-industry funded	RCT Hospital NR	Bronchiolitis 1-25mo; Laryngitis 15mo-10y	1) Dexamethasone 0.1mg in divided daily dose every 6h: D1-9=0.2ml/lb/day; D10-11=0.1ml/lb/day; D12-13=0.05ml/lb/day; D14=0.02ml/lb/day (IM), n=31 2) Sodium chloride 0.15mEq/ml for 14d (IM), n=26	Oxygen, penicillin & streptomycin NR	Daily	Adverse reactions to steroid therapy were not noted on clinical examination and superinfections, bacterial or viral dissemination, were not encountered.
Svedmyr 1995 Sweden Funding NR	RCT, crossover NR	Asthma 3-10y	1) Budesonide 0.2mg 4 times daily for first 3d, 0.2mg 3 times daily for next 3d and 0.2mg twice	Maintenance bronchodilators permitted No CS in preceding month	NR	Ten adverse events were reported in the budesonide group and

			daily for last 3d (neb), n=NR (all groups=26) 2) Placebo (NR), n=NR (all groups=26) Multiple courses; 17 children completed one paired (Grp 1&2) treatment; 15 children completed 4 paired treatments			nine in the placebo group. There were two cases of dysphonia in the budesonide group. The other events were correlated more to the children's URTI such as headache, diarrhoea, epistaxis or sore throat. There were no significant differences between the two groups.
Svedmyr 1999[1] Sweden Funding NR	RCT Pediatric hospital 4	Asthma – first sign of URTI 1-3y	1) Budesonide 400mcg, 4 times daily for 3d then twice daily for 7d (MDI), n=28 2) Placebo, 4 times daily for 3d then twice daily for 7d (MDI), n=27 Multiple courses over 1yr, or max. 6 treatments	Beta-agonists and/or theophylline No CS in preceding 2mo	Daily for 10d	In the budesonide group a 24-month-old girl discontinued treatment during the first treatment period because of a suspected side effect. The child became emotionally unstable and vomited after inhaling the study drug.

						Almost 1 y later, she used budesonide for 10 d with no side effects at all. The symptom of hoarseness, a well-known side effect with ICS, is of special interest. Nine children reported 18 episodes of hoarseness in the placebo group, compared with 2 children reporting 4 episodes in the budesonide group. This difference was statistically significant (p = 0.024). Figure 4 – bar chart of adverse events (counts, only once per treatment period), including vomiting, otitis,

						hoarseness, sore throat, conjunctivitis, croup, stomach ache, diarrhea, agitation, sleep disturbances, and aggressivenes s.
Tagarro 2014 Spain Non-industry funded	Cohort University hospital 1	Bronchiolitis 0-6mo	1) Dexamethasone 1.0mg single dose, or for 6d, or 1.0mg on first day plus 0.6mg for 5d, 6d total (likely oral), n=33 2) Prednisone 1.0-2.0mg for 5d (likely oral), n=15 3) No steroids, dose/duration NR, n=32	Adrenaline & salbutamol NR	NR	No significant adverse effects attributable to steroids or bronchodilato rs were found in the clinical records, apart from hyperglycemi a. Hyperglycemi a was found in 4 out of 23 patients tested (17%). Two of them had received PRD, one of them DXM and one no steroids.
Tal 1983 Israel Non-industry funded	RCT Hospita l 1	Acute wheeze 1-12mo	1) Dexamethasone 0.3mg/kg (4mg/ml) on admission + 0.1 mg/kg every 8h (IM), n=8 2) a) Sal solution 2.5mg (0.5ml),	Oral/IV fluid & humidified oxygen NR	Admission, 3h after first IM dose & each morning (8am) until discharge	One infant developed a remarkable tremor as a side effect of salbutamol. No other side effects or complications

			on admission & every 6h (neb); b) Sal syrup, 0.15mg/kg, every 8h (oral); and, c) Placebo saline (IM), n=8 3) Dexamethasone 0.3mg/kg (4mg/ml) on admission + 0.1mg/kg every 8h (IM); a) Sal solution 2.5mg (0.5ml), on admission & every 6h (neb); and, b) Sal syrup, 0.15mg/kg, every 8h (oral), n=8 4) Placebo saline 0.075ml/kg on admission, then 0.025ml/kg every 8h during next 3d (IM), n=8			of the treatment were documented.
Tamura 2008 Japan Funding NR	Case series Medical center, inpatient 1	Refractory mycoplasma pneumonia 5y (n=6, range 3y-9y)	Methylprednisolone 30.0mg/kg once daily for 3d (IV), n=1	NR NR	NR	All cases: There were no adverse events in any patients during steroid treatment; Case patient 1: On the 10th clinical day, we initiated methylprednis

						olone pulse therapy once daily for 3 days. Six hours after the initiation of steroid therapy, she became afebrile. On the next day, dyspnea was resolved. Chest radiograph on that day showed dramatic improvement. Five days after the initiation of steroid therapy, laboratory findings were normalized. She was discharged on the 17th day of admission without sequelae.
Teeratakul pisarn 2007 Thailand Non-industry funded	RCT Pediatric outpatient or ED 2	Bronchiolitis 4wk-24mo	1) Dexamethasone 0.6mg/kg, single dose (IM), n=89 2) Saline solution 0.6mg/kg, single dose (IM), n=85	Epinephrine, salbutamol, IV fluids, antimicrobial drugs & oxygen No CS in preceding 2wk	Baseline & every 6h until study endpoint (resolution of respiratory distress); FU at 2wk intervals for	Soon after study endpoint, but before being discharged, systemic CS was prescribed to seven children (four in the dexamethaso

					at least 1mo	ne group) because of re-wheezing. None of the children received theophylline or ribavirin. Three children (two in the dexamethasone group) developed occult blood in stools. Six children (three in the dexamethasone group) had subsequent diarrhea. Three children (all in the placebo group) had subsequent pneumonia with suspicious bacterial causes and required additional antibiotics. Table 5 - probable adverse outcomes of treatment up to 1 month post-treatment, n (Dex vs. Placebo):

						Occult blood in stools (2 vs. 1); Pneumonia (0 vs. 0); Diarrhea (3 vs. 3)
van Woensel 1997 Netherlands Non-industry funded	RCT Hospital 1	Bronchiolitis <2y	1) Prednisolone powder 1.0mg/kg/day in 2 divided doses for 7d (oral), n=27 2) Placebo in 2 divided doses for 7d (oral), n=27	Oxygen, bronchodilators, or antibiotics No CS in preceding 2mo	Baseline & daily for 7d	In the present study no clinically significant side effects of prednisolone were found.
Webb 1986 UK Non-industry funded	RCT, crossover "unit", outpatient 1	Persistent wheeze <18mo	1) Prednisolone 1.0mg/kg, twice daily for 5d (oral), n=NR (total patients in study = 38) 2) Placebo, twice daily for 5d (oral), n=18 crossed over Multiple courses; 38 children completed a total of 56 treatment courses	Bronchodilator & antibiotics NR	Daily for 5d & clinical exam 3d after treatment course (D8)	There were no side effects reported by the parents and none was detected on clinical examination at the time of review three days after completing the five day course of treatment.
Zhang 2003 Brazil Non-industry funded	RCT Pediatric hospital ward 1	Bronchiolitis <12mo	1) Prednisolone 1.0mg (oral) + standard care for 5d (NR), n=28 2) Standard care (oxygen, fluid replacement, nebulised	IV hydrocortisone in first 24h after hospitalization No CS in preceding 4wk	Enrolment, 1mo, 3mo, 6mo & 12mo after discharge	The potential side-effects of prednisolone were not included as outcome measures in this study as the safety of

			fenoterol) for 5d (NR), n=24			short-term steroid therapy has been well confirmed. At the time of analysis of the data, all 52 patients' hospital records were reviewed and no adverse event was noted in the patients who received prednisolone.

[1]Hedlin 1999 and Svedmyr 1999 are associated publications; Svedmyr 1999 reports on an RCT comparing budesonide with placebo, and Hedlin 1999 reports systemic effects on a subgroup of these children with moderate to severe asthma exacerbations who required additional treatment (with oral betamethasone) and/or hospitalization;
admin: administration; BW: birthweight; cc: cubic centrimetre(s); CCT: controlled clinical trial; cm: centimeter(s); CS: corticosteroid; d/D: day(s); ED: emergency department; FP: fluticasone propionate; FU: follow-up; g: gram(s); h: hour(s); IM: intramuscular; IV: intravenous; kg: kilogram(s); L: litre(s); max.: maximum; mcg: microgram(s); MDI: metered-dose inhaler; mg: milligram(s); mL: milliliter(s); mo: month(s); neb: nebulized; NR: not reported; NRCT: non-randomized clinical trial; RCT: randomized clinical trial; RSV: respiratory syncytial virus; SA: Saudi Arabia; sal: salbutamol; UK: United Kingdom; URTI: upper respiratory tract infection; vs: versus; wk: week(s); y: year(s); yo: year old