

Article

Respiratory Syncytial Virus Reinfections in Children in Western Australia

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Table S1. The detection profile and rationale of detections identified as persistent.

ID	Detections excluded	Interval (days)	Age-Group at first detection	Rationale
1	1	74	1-4 yrs	Late detection for second detection (>35) with discrepant results on the second assay.
2	1	76	1-4 yrs	Hyperinsulinemia, congenital central hypoventilation syndrome with tracheostomy; late detection (>35) for second with discrepant detections results on additional testing. 2nd detection occurred when presenting with constipation.
3	1	76	1-4 yrs	Extreme prematurity, inhaled fluticasone; on hydrocortisone replacement therapy; interval positive results, same RSV type with late second detection. Other viral aetiology identified for respiratory presentation (parainfluenza).
4	1	96	<1 yr	Multiple complex congenital anomalies with immunodeficiency and respiratory muscular insufficiency. Same RSV type (A) with late detection (35) for this test, with other discrepant results.
5	1	105	<1 yr	Syndrome with immunodeficiency and agenesis of the corpus callosum. Late detection for second with the same type (B). Non-respiratory presentation for the second detection.
6	1	126	5-15 yrs	Cystic fibrosis on oral steroids for allergic bronchopulmonary aspergillosis and specific antibody deficiency. Multiple interval detections.

7	2	56	<1 yr	Same RSV type (type B), late detection (>35) for second; presentation for second detection with gastrointestinal upset
8	2	57	<1 yr	Tracheomalacia. Testing for the second detection was undertaken as part of a planned bronchoscopy for tracheomalacia. Late detection for the second detection (>35) and discrepant results on the alternative test.
9	2	57	<1 yr	Late detection on second detection (>35). Non-respiratory presentation for the second test.
10	2	57	5-15 yrs	Profoundly immunocompromised with lymphoproliferative syndrome with multiple detections in the intervening period. No new respiratory symptoms
11	2	59	1-4 yrs	Extreme prematurity. Second detection (>35) with discrepant results on the second test. An alternative virus was detected that was attributed to presentation (adenovirus).
12	2	60	1-4 yrs	Hepatoblastoma on treatment; multiple interval detections with declining detection strength.
13	2	62	1-4 yrs	Prematurity. Late detection (>35) for the second detection with the same type detected (A).
14	2	63	<1 yr	Prematurity. Late detection for the second (>35) with an alternative virus detected that was attributed to presentation (adenovirus).
15	2	63	1-4 yrs	Renal cell sarcoma on treatment with multiple detections over the intervening period.
16	2	64	<1 yr	Extreme prematurity: Second detection at the detection limit with a discrepant second test. Other respiratory virus detected (parainfluenza)
17	2	64	<1 yr	Lympho-vascular malformation of tongue; late second detection (>35). 2nd presentation for additional imaging; no respiratory symptoms
18	2	66	<1 yr	Trisomy 21, severe pulmonary hypertension, poor weight gain. Multiple interval detections with declining strength; same RSV type (B). No new clinical symptoms with detection at 66 days
19	2	71	5-15 yrs	Acute lymphoblastic leukaemia; same RSV type (A) with multiple interval detections.
20	2	75	<1 yr	Multiple interval detections: late detection (>35) on one assay at day 75, with discrepant results on repeat testing the next day. Another new respiratory virus was detected (human metapneumovirus).
21	2	75	1-4 yrs	Viral-induced wheeze with two five-day courses of oral prednisolone in between—interval positives with late second detection of same RSV type (B).
22	2	77	<1yr	Investigated for immunodeficiency for recurrent infections, failure to thrive, and recurrent unexplained hypoglycaemia. Multiple interval detections with declining detection strength. A new virus was detected (adenovirus); the second presentation was associated with fever.
23	2	77	1-4 yrs	Acute lymphocytic leukaemia; same RSV type, declining detection strength, no new symptoms.
24	2	78	1-4 yrs	On fluticasone, asthma; mannose-binding lectin deficiency. Treated with oral prednisolone at first presentation for five days. Admitted with fever; adenovirus LRTI. Late detection of RSV (>35).
25	2	86	<1 yr	Extreme prematurity, late detection (>35) for second, with other interval detection at 46 days; same RSV type; no respiratory symptoms at day 86.

				alternative aetiology identified for presentation- gastrointestinal upset with cryptosporidium detected.
26	2	94	<1 yr	Prematurity. Late detection for second detection (>35) with discrepant results on the second assay.

Table S2. The inpatient management of the first and second detection. P-values were calculated by comparing the subgroups using χ^2 ; -, $p>0.05$. GI, gastrointestinal.

First Detection	All	Predisposing Factor	No Predisposing Factor	p-value
Management	237	139	98	
	% (N)	% (N)	% (N)	
Nutritional Support (Any)	62% (147)	64% (89)	59% (58)	-
• Intravenous fluids	31% (73)	34% (47)	26% (26)	-
Respiratory support (any)	74% (178)	76% (107)	72% (71)	-
• Low flow	44% (104)	41% (58)	46% (46)	-
• Pressure support	27% (64)	31% (43)	21% (21)	-
• Mechanical ventilation	4% (10)	4% (6)	4% (4)	-
Antibiotics	46% (111)	52% (73)	38% (38)	-
Chest x-ray	51% (121)	55% (77)	44% (44)	-
Phlebotomy	56% (134)	61% (86)	48% (48)	0.048
Intensive Care	14% (33)	16% (23)	10% (10)	-

Second Detection	All	Predisposing Factor	No Predisposing Factor	p-value
Management	219	128	91	
Nutritional Support (Any)	36% (79)	45% (57)	24% (22)	0.002
• Intravenous fluids	25% (54)	32% (41)	14% (13)	0.002
Respiratory support (any)	57% (125)	67% (86)	43% (39)	0.0004
• Low flow	34% (75)	38% (48)	30% (27)	-
• Pressure support	22% (48)	29% (37)	12% (11)	0.003
• Mechanical ventilation	1% (2)	1% (1)	1% (1)	-
Antibiotics	47% (104)	58% (74)	33% (30)	0.001
Chest x-ray	48% (106)	54% (69)	41% (37)	-
Phlebotomy	51% (111)	59% (76)	38% (35)	0.002
Intensive Care	9% (20)	11% (14)	7% (6)	-