

Supplementary Table S1. The list of 10 sentinel hospitals in Beijing

Number	Name of hospital
1	Peking University People's Hospital
2	Beijing Shijingshan Hospital
3	Spaceflight Medical Center Hospital
4	Beijing Luhe Hospital
5	Beijing Daxing District People Hospital
6	Beijing Changping District Hospital
7	Beijing Huairou District First Hospital
8	Beijing Miyun District Hospital
9	Beijing Fangshan District Liangxiang Hospital
10	Beijing Children's Hospital

Supplemental Table S2. The list of 107 pathogens tested

Number	Pathogen name
1	human herpesvirus 1
2	human herpesvirus 2
3	human herpesvirus 3
4	human herpesvirus 4
5	human herpesvirus 5
6	human herpesvirus 6
7	human herpesvirus 6A
8	human herpesvirus 6B
9	human herpesvirus 7
10	human bocavirus 1
	human adenovirus
11	human adenovirus A
12	human adenovirus B
13	human adenovirus C
14	human adenovirus D
15	human adenovirus E
16	human adenovirus 1
17	human adenovirus 2
18	human adenovirus 3
19	human adenovirus 4
20	human adenovirus 5
21	human adenovirus 7
22	human adenovirus 8
23	human adenovirus 12
24	human adenovirus 18

25	human adenovirus 21
26	human adenovirus 24
27	human adenovirus 27
28	human adenovirus 28
29	human adenovirus 30
30	human adenovirus 31
31	human adenovirus 34
32	human adenovirus 38
33	human adenovirus 55
34	Human parvovirus B19
35	Rhinovirus A
36	Rhinovirus B
37	Rhinovirus C
38	Human metapneumovirus
39	Severe acute respiratory syndrome coronavirus 2
40	Human coronavirus 229E
41	Human coronavirus HKU1
42	Human coronavirus NL63
43	Human coronavirus OC43
44	Human respiratory syncytial virus A
45	Human respiratory syncytial virus B
46	Influenza A virus
47	Influenza A virus H1N1
48	Influenza A virus H1N1 (2009)
49	Influenza A virus H3N2
50	Influenza A virus H5N1
51	Influenza A virus H7N9
52	Influenza B virus
53	Influenza C virus
54	Rubella virus
55	Measles virus
56	Human parainfluenza virus 1
57	Human parainfluenza virus 2
58	Human parainfluenza virus 3
59	Human parainfluenza virus 4
60	Mumps virus
61	Enterovirus
62	Enterovirus A71
63	Enterovirus D68
64	Enterovirus B
65	Enterovirus C
66	Enterovirus D
67	Coxsackie virus A5

68	Coxsackie virus A6
69	Coxsackie virus A10
70	Coxsackie virus A16
71	Echovirus type 18
72	Arcanobacterium haemolyticus
73	Corynebacterium diphtheriae
74	Staphylococcus aureus
75	Streptococcus pyogenes
76	Streptococcus agalactis
77	Streptococcus galactis
78	Streptococcus intermedia
79	Streptococcus pneumoniae
80	Angina streptococcus group
81	Listeria monocytogenes
82	Acinetobacter baumannii
83	Bordetella pertussis
84	Fusobacterium necroticum
85	Haemophilus influenzae
86	Haemophilus influenzae type b
87	Klebsiella pneumoniae
88	Legionella pneumophila
89	Moraxella catarracta
90	Neisseria gonorrhoea
91	Neisseria meningitidis
92	Pseudomonas aeruginosa
93	Serratia clay
94	Stenotrophomonas maltophilia
95	Corynebacterium ulcerans
96	Yersinia enterocolitica
97	
98	
99	Chlamydia pneumoniae
100	Chlamydia psittaci
101	Chlamydia trachomatis
102	Mycoplasma pneumoniae
103	Plasma parvovireaplasma
104	Ureaplasma urealyticum
105	Mycoplasma hominis
106	Mycoplasma genitalium
107	Chlamydia pneumoniae

Supplementary Table S3. The positive rate of patients at different age group

Characteristic	Positive number of patients
All (n,%)	572 (90.1%)
Male (n,%)	269 (47.0%)
Age group (n,%)	
children (≤ 5 years old)	70 (89.7%)
adolescents (6–17 years old)	160 (92.5%)
adults (18–59 years old)	105 (89.0%)
older adults (≥ 60 years old)	237 (89.1%)

Supplementary Table S4. Co-infection patterns for different age groups. Only the top pairs of the co-infection were listed

The number of co-infections	
Children (≤ 5 years)	
<i>S. maltophilia</i> – <i>M. pneumoniae</i>	5
<i>M. pneumoniae</i> – <i>S. pneumoniae</i>	3
<i>S. pneumoniae</i> – <i>H. influenzae</i>	3
Adolescents (6–17 years)	
<i>S. pneumoniae</i> – <i>M. pneumoniae</i>	10
<i>M. pneumoniae</i> – <i>S. pneumoniae</i>	9
<i>M. pneumoniae</i> – <i>S. aureus</i>	7
Adults (18–59 years)	
<i>S. maltophilia</i> –EB virus	9
<i>S. pneumoniae</i> – <i>M. pneumoniae</i>	9
<i>S. pneumoniae</i> – <i>A. baumannii</i>	6
The elderly (≥ 60 years)	
<i>S. maltophilia</i> –EB virus	21
<i>S. maltophilia</i> – <i>K. pneumoniae</i>	16
<i>S. maltophilia</i> – <i>P. aeruginosa</i>	15