

Supplementary Material 1: All included studies, their characteristics and reported PeV prevalence. For articles without a DOI, the PMCID or PMID is given.

No.	Author	DOI	Continent	Sampling Periodlength	Sample	Sample type	Symptoms	Age	Seasonality	IncludedforPrevalence	Includedfor type distribution	PeV prevalence
1	Aizawa et al.	10.1016/j.jinf.2015.10.010	3	1	6	3	4	7		Yes	Yes	52
2	Alam et al.	10.3390/v7010378	3	2	4	1	1	4		Yes	Yes	21
3	Alam et al.	10.1371/journal.pone.0078377	3	1	3	1	1	4	7	Yes	Yes	24
4	Altan et al.	10.1371/journal.pone.0202054	4	6	7	1	5	4		Yes	Yes	4.5
5	Barskey et al.	10.1093/infdis/jit408	2	2	4	4	5	7		Yes	No	0
6	Baumgarte et al.	10.1128/JCM.01468-07	1	1	1	1	1	6		Yes	No	1.6
7	Benet et al.	10.4269/ajtmh.16-0733	7	3	6	4	2	4		Yes	No	0.7
8	Benschop et al.	10.1016/j.diagmicrobio.2010.05.016	1	2	3	1	5	7	4	Yes	Yes	8.6
9	Biscaro et al.	10.1016/j.meegid.2018.02.011	1	1	7	1	1	5		Yes	No	2.6
10	Bozkurt et al.	PMID: 26613223	3	2	5	1	1	5		Yes	No	8.8
11	Braun et al.	10.1093/jpids/pis005	2	1	3	1	8	2		Yes	Yes	Case: 21 Control: 27
12	Breiman et al.	10.1186/s12879-015-0827-x	4	2	4	2	8	4		Yes	No	Case: 1.9 Control: 2.1
13	Brini et al.	10.1371/journal.pone.0188325	4	2	6	2	2	4		Yes	No	8.1
14	Brouwer et al.	10.1007/s00705-018-04131-7	4	2	1	1	8	4		Yes	Yes	Case: 55.3 Control: 59.4
15	Bubba et al.	10.1097/INF.0000000000001344	1	3	6	4	5	4	2; 3	Yes	Yes	5.2
16	Bubba et al.	PMC4718355	1	1	4	1	1	4		Yes	No	6.3
17	Cabrerizo et al.	10.1002/jmv.24658	1	2	5	4	5	6	1	Yes	Yes	2
18	Cabrerizo et al.	10.1097/INF.0b013e31828bbe46	1	1	4	2	2	5	3; 4	Yes	Yes	3.6
19	Calvo et al.	10.1016/j.jcv.2016.10.020	1	2	6	3	3	1		Yes	No	24
20	Chaimongkol et al.	PMID: 22372354	1	1	2	1	1	4		Yes	No	1.9
21	Chakrabarti et al.	10.1007/s00431-018-3209-8	1	1	7	3	5	4	1; 2	Yes	No	10
22	Chang et al.	10.7883/yoken.JJID.2018.019	3	4	7	4	5	5	8	Yes	Yes	0.4
23	Chen et al.	10.1007/s00705-013-1915-0	3	1	6	1	1	4		Yes	Yes	13.4
24	Chen et al.	10.1002/jmv.25222	3	2	5	1	8	6		Yes	Yes	Case: 12 Control: 6.5
25	Chhabra et al.	10.1093/infdis/jit254	2	1	3	1	8	4	2	Yes	No	Case: 4.8 Control: 4.4
26	Chiang et al.	10.1371/journal.pone.0184533	3	2	7	4	5	3	3; 4	Yes	Yes	2.3
27	Chieochansin et al.	10.1016/j.virol.2011.09.021	3	2	4	2	5	6	2; 4; 6	Yes	Yes	1.6
28	Chuchaona et al.	10.1016/j.meegid.2015.02.003	3	1	5	1	1	5		Yes	No	1.8
29	Colvin et al.	10.1542/peds.2012-1391	2	3	4	4	8	3		Yes	No	Case: 7.8 Control: 0
30	Cordey et al.	10.1016/j.jcv.2015.05.003	1	1	6	4	5	5		Yes	No	2.6
31	Cristanziano et al.	10.1016/j.jcv.2015.08.004	4	2	6	1	6	6		Yes	No	5.2
32	Cui et al.	10.1186/s12879-015-0863-6	3	2	5	2	2	5		Yes	No	0
33	De Crom et al.	10.1016/j.jcv.2016.01.014	1	3	4	4	5	5	2	Yes	Yes	15
34	Do et al.	10.1371/journal.pone.0160606	3	2	4	2	2	3		Yes	No	2
35	Elfving et al.	10.1097/INF.0000000000001876	4	1	4	2	8	4		Yes	No	Case: 1.5 Control: 0
36	Feikin et al.	10.1093/infdis/jis530	4	3	4	4	8	6		Yes	No	Case: 0.5 Control: 0.5
37	Felsenstein et al.	10.1097/INF.0000000000000112	2	3	5	3	5	5		Yes	No	2.7
38	Fischer et al.	10.3201/eid2001.130569	1	3	5	4	5	7	2; 3	Yes	Yes	3.0
39	Ghanem-Zoubi et al.	10.1016/j.jcv.2013.06.001	3	2	3	3	4	4	2	Yes	Yes	3.5
40	Gong et al.	10.1371/journal.pone.0151495	3	3	5	4	5	7		No	Yes	-
41	Graul et al.	10.1016/j.jcv.2017.10.008	4	2	3	1	8	4	8	Yes	Yes	Case: 21 Control: 26
42	Guo et al.	10.1371/journal.pone.0068321	3	1	4	1	1	4	2; 3	Yes	Yes	25
43	Han et al.	10.1016/j.jcv.2013.05.023	3	2	5	3	5	5		Yes	Yes	6.5
44	Harvala et al.	10.2807/1560-7917.ES2014.19.15.20772	1	4	5	3	5	7	5	Yes	Yes	1
45	Harvala et al.	10.1016/j.jinf.2014.02.017	1	1	5	4	5	3		Yes	No	5.5
46	Harvala et al.	10.1002/jmv.22023	1	3	4	3	5	6	5	Yes	Yes	0.8
47	Hassan et al.	10.1093/jpids/piy077	2	1	5	1	8	3		Yes	No	Case: 11 Control: 16
48	Hoffmann et al.	10.1371/journal.pone.0043666	4	2	4	2	2	4		Yes	No	0.4
49	Huang et al.	10.1016/j.jmii.2014.06.013	3	4	5	4	5	7		Yes	Yes	5.7
50	Itta et al.	10.1080/23744235.2016.1218045	3	1	6	1	1	4		Yes	Yes	8.8
51	Janahi et al.	10.1186/s12879-017-2225-z	3	2	4	2	2	3		Yes	No	3
52	Jeziorski et al.	10.1002/jcla.21737	1	1	5	3	5	2		Yes	No	7.5
53	Jung et al.	10.1093/ofid/ofw172.21	3	2	6	3	5	5		Yes	No	5.9
54	Karsch et al.	10.1097/INF.0000000000000802	1	2	5	1	4	6	2	Yes	Yes	4.2
55	Khamrin et al.	10.1016/j.jviromet.2011.02.012	3	2	3	1	1	4		Yes	No	6.4

56	Khatami et al.	10.1093/cid/ciu784	6	1	6	4	5	2		No	Yes	-
57	Kolehmainen et al.	10.1097/INF.0000000000000401	1	6	5	4	5	3		Yes	No	3
58	Kolehmainen et al.	10.1016/j.jcv.2012.02.006	1	5	4	1	6	3	3	Yes	Yes	6.4
59	Kool et al.	10.3109/13814788.2014.907267	1	1	2	2	3	4		Yes	No	2.3
60	Kurz et al.	10.1007/s00431-015-2583-8	1	3	5	4	5	1		Yes	Yes	25
61	Lau et al.	10.1016/j.jcv.2012.01.008	3	1	1	1	1	5		Yes	No	0.3
62	Lekana-Douki et al.	10.1186/1471-2334-14-373	4	2	4	2	5	6		Yes	No	0.5
63	Ljubin-Sternak et al.	10.1155/2016/2168780	1	6	6	2	2	5		Yes	No	1.3
64	Malhotra et al.	10.4103/ijmr.IJMR_22_15	3	2	5	2	2	4		Yes	No	0
65	Malhotra et al.	10.1186/s12985-016-0549-8	3	2	6	2	2	4		Yes	No	0.3
66	Masse et al.	10.1155/2017/1423718	1	3	7	2	2	6*		Yes	No	0
67	McNeale et al.	10.1016/j.jcv.2017.12.003	6	1	6	4	4	5		No	Yes	-
68	Memish et al.	10.1016/j.cmi.2015.02.008	3	1	5	2	6	6*		Yes	No	0.04
69	Messacar et al.	10.1002/jmv.24119	2	2	4	3	4	2	2; 3	No	Yes	2.9
70	Midgley et al.	10.1093/jpids/pix010	2	1	6	3	5	2		No	Yes	-
71	MLadenova et al.	10.1016/j.meegid.2015.10.004	1	1	4	1	4	4		Yes	No	4.8
72	Moe et al.	10.1371/journal.pone.0159196	1	2	6	2	2	4		Yes	No	9
73	Momoki et al.	10.7883/yoken.JJID.2017.490	3	5	7	4	5	7	2; 3	Yes	Yes	12
74	Morikawa et al.	10.1016/j.jcv.2015.01.006	3	2	6	2	6	4		Yes	No	2.8
75	Morikawa et al.	10.1016/j.jcv.2015.10.001	3	1	6	2	5	5	2; 3	Yes	No	3.7
76	Nielsen et al.	10.1016/j.jviromet.2013.06.038	1	2	3	4	5	7	2	Yes	Yes	3
77	Nix et al.	10.1099/vir.0.053827-0	5	2	1	1	4	6		No	Yes	-
78	Parisi et al.	10.1016/j.ijid.2016.01.012	1	2	6	3	4	6*		Yes	No	0
79	Parisi et al.	10.1016/j.ejpn.2016.04.002	1	2	6	3	4	5		Yes	No	1.5
80	Patil et al.	10.1017/S095026881700262X	3	3	4	1	1	4		Yes	Yes	14
81	Pellegrinelli et al.	10.1099/jgv.0.000937	1	4	7	2	5	4		Yes	Yes	5.4
82	Pham et al.	10.1016/j.jviromet.2010.07.038	3	2	3	1	1	5		Yes	No	8.1
83	Pham et al.	10.3201/eid1601.091105	3	1	2	1	1	5		Yes	Yes	8.3
84	Pham et al.	10.1002/jmv.21740	3	1	3	1	1	5		Yes	Yes	8.1
85	Piralla et al.	10.1002/jmv.23197	1	2	4	4	5	6	3	Yes	Yes	0.4
86	Rahimi et al.	10.1007/s13365-013-0221-7	3	2	4	3	4	4		Yes	Yes	43.2
87	Renaud et al.	10.1016/j.jcv.2011.02.010	2	2	5	4	5	6		Yes	Yes	3.4
88	Rovida et al. et al.	10.1016/j.diagmicrobio.2013.07.020	1	2	5	1	1	6		Yes	No	0.3
89	Saikruang et al.	10.1007/s00705-014-2191-3	3	1	3	1	1	6*		Yes	No	0.3
90	Sano et al.	10.1111/ped.13467	3	4	6	4	3	1	2	Yes	Yes	20
91	Schuffenecker et al.	10.1016/j.jcv.2012.04.016	1	2	4	3	5	4		Yes	Yes	2.9
92	Sedmak et al.	10.1086/649863	2	5	1	4	5	3		Yes	Yes	4.2
93	Seo et al.	10.3345/kjp.2015.58.3.102	3	2	5	3	4	4		Yes	No	3.4
94	Seo et al.	10.14776/kjpid.2012.19.1.28	3	1	3	1	1	4		Yes	No	16
95	Sharp et al.	10.1097/INF.0b013e318276b328	2	1	3	3	5	5	2; 3	Yes	Yes	17
96	Sharp et al.	10.1128/JCM.01680-12	2	1	3	2	6	5	2	Yes	Yes	2.8
97	Thongprachum et al.	10.1002/jmv.24155	3	3	5	1	1	5		Yes	No	6.6
98	van den Bergh et al.	10.1371/journal.pone.0047711	1	3	3	2	6	2		Yes	No	9
99	Van Someren et al.	10.1097/CCM.0000000000002752	1	1	6	2	2	6*		Yes	No	0.1
100	Vollbach et al.	10.1186/s12985-015-0427-9	1	5	3	3	4	5		Yes	No	0.6
101	Walters et al.	10.1016/j.jcv.2011.07.008	2	4	4	3	5	5	2; 3	Yes	Yes	2.4
102	Yamamoto et al.	10.1099/jmm.0.000167	3	1	6	4	5	6	7	Yes	Yes	10
103	Yip et al.	10.1186/1743-422X-11-182	3	6	5	1	1	5		Yes	Yes	3
104	Zhao et al.	10.1186/s13099-016-0135-z	3	3	6	1	1	4		Yes	Yes	13
105	Zhong et al.	10.1002/jmv.23449	3	3	4	3	5	5		Yes	Yes	8.7
106	Zhong et al.	10.1002/jmv.22114	3	2	3	1	1	4	1; 2; 3	Yes	Yes	55

Continent: 1,Europe; 2, North-America; 3, Asia; 4, Africa; 5, South-America; 6, Oceania; 7, multiple continents

Sampling Period: 1, ≤ 1 year; 2, ≤ 3 years; 3 ≤ 5 years; 4, ≤ 10 years; 5, > 10 years; 6, several separated inclusion periods

Sample collection (last year): 1, ≤ 2006; 2, ≤ 2008; 3, ≤ 2010; 4, ≤ 2012; 5, ≤ 2014; 6, ≤ 2016; 7 ≤ 2018

Sample type: 1, gastro-intestinal (GE); 2, respiratory; 3, cerebrospinal fluid (CSF); 4, several/otherincluded sample types; 5, unknown

Symptoms: 1, gastro-intestinal (GE); 2, respiratory; 3, fever without source (FWS); 4, central nervous system (CNS); 5, several/other included symptoms; 7, unknown; 8, case-control

Age: 1, ≤ 3 months; 2, ≤ 1 year; 3, ≤ 3 years; 4,, ≤ 10 years; 5, ≤ 18 years; 6, No age limit (6*, only adults); 7, unknown

Seasonality: 1, spring; 2, summer; 3, fall; 4, winter; 5, biennial; 6, biannual; 7, different seasonality per type; 8, no seasonality observed