

## **Supplementary material to**

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## **Significance of norovirus in occupational health: A review of published norovirus outbreaks in Central and Northern Europe**

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## **Systematic search for articles on norovirus outbreaks in Central and Northern Europe**

### **EMBASE**

Search performed on the 14<sup>th</sup> of November 2016

1. "Noro\*" (English keyword): 51632 articles
2. "Norwalk\*" (English keyword): 5553 articles
3. 1 OR 2: 51632 articles
4. "Outbreak\*" (English keyword): 2170 articles
5. "Epidemic\*" (English keyword): 278838 articles
6. "Pandemic\*" (English keyword): 42420 articles
7. "Disease Outbreak\*" (English keyword): 86151 articles
8. 4 OR 5 OR 6 OR 7: 291968 articles
9. 3 AND 8: 2651 articles
10. "Personnel" (text word): 367078 articles
11. "Occupational" (text word): 422557 articles
12. "Staff" (text word): 228221 articles
13. „Employee\*“ (text word): 47359 articles
14. „Worker\*“ (text word): 200973 articles
15. „Health personnel“ (text word): 71345 articles
16. 10 OR 11 OR 12 OR 13 OR 14 OR 15: 1010504 articles
17. 9 AND 16: 320 articles
18. 17 AND AND PY=2000 to 2016 AND LA=(ENGLISH; GERMAN; FRENCH): 284 articles
19. 19 NOT SU=MEDLINE (exclude articles which are listed in MEDLINE): 220 articles

### **Global Health**

Search performed on the 15<sup>th</sup> of November 2016

1. "Noro\*" (English keyword): 2996 articles
2. "Norwalk\*" (English keyword): 3365 articles

3. 1 OR 2: 3384 articles
4. "Outbreak\*" (English keyword): 26705 articles
5. "Epidemic\*" (English keyword): 19030 articles
6. "Pandemic\*" (English keyword): 1796 articles
7. "Disease Outbreak\*" (English keyword): 15 articles
8. 4 OR 5 OR 6 OR 7: 42649 articles
9. 3 AND 8: 1374 articles
10. "Personnel" (text word): 22661 articles
11. "Occupational" (text word): 52094 articles
12. "Staff" (text word): 25958 articles
13. „Employee\*" (text word): 11893 articles
14. „Worker\*" (text word): 69129 articles
15. „Health personnel" (text word): 1263 articles
16. 10 OR 11 OR 12 OR 13 OR 14 OR 15: 124171 articles
17. 9 AND 16: 222 articles
18. 17 AND AND PY=2000 to 2016 AND LA=(ENGLISH; GERMAN; FRENCH): 190 articles

## **GMS**

Search performed on the 13<sup>th</sup> of November 2016

1. "Noro\*" (text word): 13 articles
2. "Norwalk" (text word): 2 articles
3. 1 OR 2: 14 articles
4. "Outbreak\*" (text word): 50 articles
5. "Epidemic\*" (text word): 35 articles
6. "Pandemic\*" (text word): 6 articles
7. "Disease Outbreak\*" (text word): 2 articles
8. 4 OR 5 OR 6 OR 7: 75 articles
9. 8 AND LA=(ENGLISH; GERMAN; FRENCH): 5 articles

10. 9 AND PY=2000 to 2016: 5 articles

### **GMS meetings**

Search performed on the 13<sup>th</sup> of November 2016

1. "Noro\*" (text word): 10 articles
2. "Norwalk" (text word): 2 articles
3. 1 OR 2: 11 articles
4. "Outbreak\*" (text word): 43 articles
5. "Epidemic\*" (text word): 53 articles
6. "Pandemic\*" (text word): 10 articles
7. "Disease Outbreak\*" (text word): 0 articles
8. 4 OR 5 OR 6 OR 7: 93 articles
9. 3 AND 8: 1 article

### **PUBMED**

Search carried out on the 17<sup>th</sup> of October 2016

1. "Noro\*" (MeSH terms): 3549 articles
2. "Norwalk virus" (MeSH terms): 679 articles
3. 1 OR 2: 3549 articles
4. "Outbreak\*" (text word): 104085 articles
5. "Epidemic\*" (text word): 84811 articles
6. "Pandemic\*" (text word): 20435 articles
7. "Disease outbreak\*" (text word): 71231 articles
8. 4 AND 5 AND 6 AND 7: 179673 articles
9. 3 AND 8: 1717 articles
10. "french" (language) OR "german" (language) OR "english" (language): 23498916 articles
11. 9 AND 10: 1577 articles

12. 11 AND "2000/01/01" (date - publication): "3000" (date - publication): 1366 articles
13. "personnel" (text word): 298546 articles
14. "occupational" (text word): 244747 articles
15. "staff" (text word): 197535 articles
16. "employee\*" (text word): 53030 articles
17. "worker\*" (text word): 157446 articles
18. "Health personnel" (MeSH term): 424846 articles
19. 13 OR 14 OR 15 OR 16 OR 17 OR 18: 988212 articles
20. 12 AND 19: 186 articles

### **Outbreak Database**

Search performed on the 11<sup>th</sup> of October 2016

GE="Norovirus" (GE: microorganism, genus) AND RY:[2000 TO 2147483647] (RY: publication year) AND NOC="Personnel" (group that suffered from the outbreak) AND (FY="Inpatient care (not ICU)" OR FY="Intensive care unit" OR FY="Nursing home") (FY: facility): 37 results

Online Resource 1: Epidemiological data for NoV outbreaks in health care facilities

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup (GG)	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Cummins and Ready (2016)	AggDat	GB	Hospitals (n=4)	(---) <sub>4</sub>	GGI & GGII	(---)	Patients & HCWs	2015	2	4	0	4	0.00	
					GGII				1	3	0	3	0.00	
					GGII				16	51	7	44	0.14	
					GGII				1	6	0	6	0.00	
Danial et al. (2016)	OutB	GB	Hospital	(---)	GGII	GGII.4 Sydney 2012	Patients & HCWs	2013	1	173	30	143	0.17	
Harris (2016)	AggDat	GB	Hospitals (n=?)	(---)	(---)	(---)	Patients & HCWs	2009 - 2016	5160	91814	18685	73129	0.20	
Schulz-Stübner et al. (2016)	OutB+	DE	Hospitals (n=?)	EC, p2p	(---)	(---)	Patients & HCWs	2013-2015	1	11	6	5	0.55	
									1	100	34	66	0.34	
									1	10	3	7	0.30	
									1	7	4	3	0.57	
									1	13	2	11	0.15	
									1	10	6	4	0.60	
									1	10	4	6	0.40	
									1	11	2	9	0.18	
									1	12	3	9	0.25	

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup (GG)	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Mattner et al. (2015)	AggDat	DE	Hospitals (n=5)	EC, p2p	(---)	(---)	Patients & HCWs	2002/2003	5	130	46	84	0.35	
								2002/2003	13	382	83	299	0.22	
								2007-2009	24	442	129	313	0.29	
								2010-2012	11	181	36	145	0.20	
								2010-2012	18	297	54	243	0.18	
Mitchell et al. (2015)	AggDat	GB	Hospitals (n=5)	(---)	(---)	(---)	Patients & HCWs	2007/2008	59	694	87	607	0.13	
								2008/2009	31	324	40	282	0.12	
								2009/2010	21	272	54	218	0.20	
								2010/2011	3	43	20	23	0.47	
								2011/2012	2	32	11	21	0.34	
								2012/2013	2	25	8	17	0.32	
								2013/2014	1	10	1	9	0.10	

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup (GG)	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Rahamat-Langendoen et al. (2013)-	OutB	NL	Hospital	(---)	GGII	GGII.4 2009, GGII.b, GGII.7, GGII.2	Patients & HCWs	(---)	1	9	2	7	0.22	
Sauvan et al. (2013)	OutB	CH	Hospital	(---)	(---)	(---)	Patients & HCWs	2012-2013	1	163	33	130	0.20	
Heijne et al. (2012)	OutB	NL	Psychiatric institution	p2p	(---)	(---)	Patients & HCWs	2008	1	46	13	33	0.28	
Sukhrie et al. (2012)	OutB+	NL	Hospitals (n=3)	(---)	GGII	GGII.4-2008/GGII.4.-2006b	Patients & HCWs	2009	1	16	11	5	0.69	
						GGII.2		2009	1	6	0	6	0.00	
						GGII.7		2009	1	8	7	1	0.88	
Carpentier et al. (2011)	OutB	FR	Hospital	(---)	GGII	GGII.4	Patients & HCWs	2008	1	150	43	107	0.29	
Danial et al. (2011)	AggDat	GB	Hospitals (n=?)	(---)	(---)	(---)	Patients & HCWs	2007-2009	142	2317	599	1718	0.26	
Hauri et al. (2011)	AggDat	DE	Hospitals (n=?)/rehabilitation centers (n=?)	(---)	(---)	(---)	Patients & HCWs	2007	155	3381	660	2721	0.20	
Illingworth et al. (2011)	AggDat	GB	Hospital and community	(---)	(---)	(---)	Patients & HCWs	2009/2010	24	318	60	258	0.19	[1]



Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup (GG)	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Schmid et al. (2011)	OutB	AT	Hospital with affiliated rehabilitation center and convalescent home	Food, p2p, EC	GGII	GGII.4 2006b	Patients & HCWs	2009	1	204	52	152	0.25	
Schwartz et al. (2011)	OutB	DE	Hospital	p2p	GGII	GGII.4	Patients & HCWs	(---)	1	37	11	26	0.30	
Aziz (2010)	AggDat	GB	Hospitals (n=?)	(---)	(---)	(---)	Patients & HCWs	2009	458	5746	1265	4481	0.22	
Fretz et al. (2009)	OutB	AT	Hospital	p2p, EC	GGII	GGII.4 2006b	Patients & HCWs	2006/2007	1	70	14	56	0.20	
Kanerva et al. (2009)	OutB	FI	Hospital	p2p	GGII	GGII.4 2006b	Patients & HCWs	2006	1	445	205	240	0.46	
Sommer et al. (2009)	OutB+	AT	Hospitals (n=2)	(---)	(---)	(---)	Patients (infants) & HCW	2007/2008	1	2	1	1	0.50	
					GGII				1	5	0	5	0.00	
Leuenberger et al. (2007)	OutB	CH	Hospital	p2p, EC	GGII	GGII.4	Patients & HCWs	2003	1	77	28	49	0.36	
Vardy et al. (2007)	OutB	GB	Hospital	(---)	(---)	(---)	HCWs	2006	1	37	37	0	1.00	
Mattner et al. (2006)	OutB	DE	Hospital	p2p	GGII	GGII.4 Grimsby	Patients & HCWs	2002	1	163	79	84	0.48	

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup (GG)	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Simon et al. (2006)	OutB	DE	Hospital	(---)	(---)	(---)	Patients and relatives thereof	2004	1	13	0	13	0.00	
Fretz et al. (2005)	OutB+	CH	Hospital and affiliated nursing home	p2p, food	GGII	GGII.4 Miami Beach	Patients & HCWs	2003	1	140	78	62	0.56	
Odelin et al. (2005)	OutB	FR	Hospital	p2p	GGII	GGII.4 Lordsdale	Patients & HCWs	2002	1	110	40	70	0.36	
Schmid et al. (2005)	OutB+	AT	Hospital and nursing home	p2p, EC	GGII	GGII.4 (Jamboree like)	Patients & HCW s	2004	1	53	25	28	0.47	
Zingg et al. (2005)	OutB	CH	Hospital	(---)	(---)	(---)	Patients & HCWs	2003	1	45	29	16	0.64	
Baum von et al. (2004)	OutB	DE	Hospital	(---)	(---)	(---)	Patients & HCWs	2004	1	16	12	4	0.75	
Gallimore et al. (2004)	OutB	GB	Hospital	(---)	GGI, GGII	GGI.h Potsdam, GGII.3a Harrow/Mexico, GGII.7 Leeds, GGII.4 Grimsby	Patients & HCWs	2002	1	99	59	40	0.60	
Lopman et al. (2004)	AggDat	GB	Hospitals (n=15)	(---)	(---)	(---)	Patients & HCWs	2002/2003	61	1212	482	730	0.40	
Jansen et al. (2004)	OutB	DE	Hospital and nursing home	p2p , EC, aer	GGII	GGII.4 Grimsby-like	Patients & HCWs	2002/2003	1	322	137	185	0.43	[2]
Meyer et al. (2004)	OutB	DE	Hospital	(---)	(---)	(---)	Patients & HCWs	2002	2	95	67	28	0.71	

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup (GG)	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Verbelen et al. (2004)	OutB	BE	Hospital	(---)	GGII	GGII.4 Camberwell	Patients & HCWs	2002	1	31	11	20	0.35	
Khanna et al. (2003)	OutB	CH	Hospital	p2p	GGII	GGII._ Basel	Patients & HCW s	2001	1	63	36	27	0.57	
Billgren et al. (2002)	AggDat	SE	Hospitals (n=10)	aer, p2p, EC	GGI, GGII	GGI.2 Hawaii, GGII.3 Mexico, GGII.4 Lordsdale	Patients & HCWs	1996	54	794	237	557	0.30	
Kuusi et al. (2002)	OutB	FI	Rehabilitation center	p2p	GGII	(---)	Patients, HCWs, administrative staff, kitchen, cleaning staff & maintenance staff	1999/2000	1	331	118	213	0.36	
O'Neill et al. (2001)	OutB+	GB	Hospital	(---)	(---)	(---)	Patients & HCWs	1999	1	30	9	21	0.30	
Oppermann et al. (2001)	OutB	DE	Hospital	p2p	(---)	(---)	Patients & HCWs	1999	1	83	11	72	0.13	
Cunney et al. (2000)	OutB	IE	Hospital	p2p,food,aer	(---)	(---)	Patients, HCWs & food handlers	1993	1	95	48	47	0.51	

#### Legend

<sup>1</sup>Study type: Aggregated data of diverse NoV outbreaks (aggDat), outbreak case study (OutB), outbreak case studies, i.e. more than one NoV outbreak that are separately reported in a publication (OutB+)

<sup>2</sup>Country according to ISO 3166-1: Austria (AT), Belgium (BE), Germany (DE), Finland (FI), France (FR), United Kingdom (GB), Ireland (IE), the Netherlands (NL), Norway (NO), Sweden (SE)

<sup>3</sup>Transmission path: aerosol (aer), environmental contamination (EC), person-to-person (p2p)

<sup>4</sup>Not specified

[1] Fragmentary data for the 2007/2008 season, therefore excluded; [2] only data available for one nursing home/ hospital outbreak

Online Resource 2: Epidemiological data for NoV outbreaks in community facilities

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Loury et al. (2015)	OutB	FR	Nursing home	Food	GGII	GGII.g/GGII.1, GGII.7	Residents & HCWs	2012	1	84	31	53	0.37	
Teunis et al. (2015)	OutB+	NL	Nursing home	?	(---) <sub>4</sub>	(---)	Residents & HCWs	2009-2012	1	19	11	8	0.58	[1]
Jian et al. (2012)	OutB	AT	School	Food, p2p	GGII	GGII.6/GGII.7 Hybrid	Students	2011	1	48	0	48	0.00	
Sukhrie et al. (2012)	OutB+	NL	Nursing home	(---)	GGII	GGII.4 2010	Residents & HCWs	2009	1	18	11	7	0.61	[2]
								2009	1	17	8	9	0.47	
Vivancos et al. (2010)	AggDat	GB	Nursing homes & residential homes (n=?)	(---)	GGII, GGI (?)	(---)	Residents & HCWs	2006-2007	96	2114	727	1387	0.34	[3]
Friesema et al. (2009)	AggDat	NL	Nursing homes (n=49)	(---)	GGI, GGII	GGII.4 2004, GGII.4 2006a, GGII2006b, GGI.3 Birmingham, GGI.6 Mikkeli, GGII.b Hilversum, GGII.3 Toronto, GGII.7 Leeds	Residents & HCWs	2005-2007	26	1027	390	637	0.38	
Adams (2008)	OutB	DE	Nursing home	(---)	(---)	(---)	Residents & HCWs	2007	1	50	15	35	0.30	
Kaynak et al. (2007)	OutB	DE	Nursing home	(---)	(---)	(---)	Residents & HCWs	2006	1	84	19	65	0.23	

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Dreier et al. (2006)	OutB+	DE	Nursing home	p2p	GGI	GGI.4 Chiba	Residents & HCWs	2004	1	17	5	12	0.29	
			Nursing home	p2p	GGI	GGI.4 Chiba	Residents & HCWs		1	12	5	7	0.42	
			Residential home	p2p	GGI	GGI.2 Southampton	Patients & HCWs		1	24	6	18	0.25	
			Residential home	p2p	GGI	GGI.2 Southampton	Patients & HCWs		1	22	6	16	0.27	
			Residential home	p2p	GGI	GGI.2 Southampton	Patients & HCWs		1	36	3	33	0.08	
			Residential home	p2p	GGI	GGI.2 Southampton	Patients & HCWs		1	10	2	8	0.20	
			Residential home	p2p	GGI	GGI.2 Southampton	Patients & HCWs		1	40	20	20	0.50	
Lopman et al. (2004)	AggDat	GB	Nursing homes (n=135)	(---)	(---)	(---)	Patients & HCWs	2002/2003	14	432	166	266	0.38	
O'Neill et al. (2001)	OutB+	GB	Nursery school	(---)	(---)	(---)	Pupils & school staff	(---)	1	25	2	23	0.08	
			Nursing home				Residents & HCWs		1	35	7	28	0.20	

Legend

<sup>1-4</sup> see supplementary table 1 [1] also asymptomatic subjects tested for NoV, four of five outbreaks in the article were already published in Sukhrie et al. (2012); [2] also asymptomatic subjects tested for NoV; [3] only 34 of 96 gastroenteritis outbreaks are confirmed NoV outbreaks

Online Resource 3: Epidemiological data for NoV outbreaks in hotels, restaurants and canteens

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup	Genotype	Collectives infected	Outbreak year (s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Brey (2016)	OutB	DE	Restaurant	Food?	GGI	GGI.4	Diners & cooks	2016	1	50	2	48	0.04	
Vo et al. (2016)	OutB	FI	Restaurant	Food?	GGI	GGI.7	Diners & relatives of food handlers	2015	1	15	0	15	0.00	[1]
Maritschnik et al. (2013)	OutB	AT	Hotel	Food	GGII	GGII.4 Sydney 2012	Diners & cooks	2012	1	27	1	26	0.04	
Smith et al. (2012)	OutB	GB	Restaurant	Food, p2p, EC?	GGII	GGII.2, GGII.3, GGII.4, GGII.6	Diners, kitchen staff, front of house staff, sommeliers, administrators & kitchen porters	2009	1	257	17	240	0.07	
Baker et al. (2011)	OutB	GB	Restaurant	Food	GGI, GGII	(---) <sub>4</sub>	Diners & kitchen staff	2010	1	12	1	11	0.08	

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Guzman-Herrador et al. (2011)	OutB	NO	Hotel	Food?	(---)	(---)	Meeting participants	2011	1	56	0	56	0.00	
Nicolay et al. (2011)	OutB	IE	Hotel	Food?	GGII	GGII.4 2006	Diners & food handlers	2009	1	28	1	27	0.04	[2]
Boxman et al. (2009)	OutB+	NL	Restaurant	Food	GGI	GGI.6	Diners & food handlers	2007	1	21	7	14	0.33	
Kuo et al. (2009)	OutB	AT	Restaurant	Food	GGII	(---)	Diners & kitchen staff	2007	1	21	2	19	0.10	
Makary et al. (2009)	OutB	FI	Canteen (n=3)	Food	GGII	GGII.1	Employees, cooks	2006	3	114	3	111	0.03	
Schimmelpfennig et al. (2009)	OutB	DE	Restaurant	Food	(---)	(---)	Diners & kitchen staff	2007	1	53	1	52	0.02	
Boraja (2008)	OutB	DE	Restaurant	(---)	(---)	(---)	Diners	2007	1	20	0	20	0.00	
Sinn (2008)	OutB	DE	Restaurant	EC, p2p, food(?)	GGII	GGII.4 2006b	Diners & kitchen staff	2006	1	23	2	21	0.09	
Fell et al. (2007)	OutB	DE	Canteen	Food	GGI	(---)	Diners & kitchen staff	2005	1	70	1	69	0.01	



Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Michel et al. (2007)	OutB	IE	Hotel	p2p	(---)	(---)	Diners & cooks	2006	1	98	11	87	0.11	
Showell et al. (2007)	OutB	GB	Canteen	Food	GGII	GGII.4 v2, GGII.4 v3	Diners & food handlers	2007	1	36	0	36	0.00	
Wit de et al. (2007)	OutB	NL	Restaurant	Food	GGII	(---)	Diners & cooks	2001	1	249	18	231	0.07	
Johansson et al. (2002)	OutB	SE	Hotel	Food, p2p, EC	GGI	GGI.3 Desert Shield	Hotel guests & hotel staff	2000	1	201	9	192	0.04	
O'Neill et al. (2001)	OutB+	GB	Hotel	(---)	(---)	(---)	Hotel guests & hotel staff	1998	1	186	14	172	0.08	
			Hotel	(---)	(---)	(---)	Hotel guests & catering staff	1999	1	23	3	20	0.13	
			Hotel	(---)	(---)	(---)	Hotel guests	2000	1	485	0	485	0.00	
			Restaurant	(---)	(---)	(---)	Diners & cooks	1999	1	7	1	6	0.14	

Legend: <sup>1-4</sup> see supplementary table 1;

[1] Only stool samples submitted by kitchen workers (without symptoms?) and relatives thereof;

[2] also asymptomatic persons tested for NoV



Online Resource 4: Epidemiological data for NoV outbreaks in other settings associated with food handling

Authors/year of publ.	Study type <sub>1</sub>	Country <sub>2</sub>	Setting	Transmission path <sub>3</sub>	Genogroup	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
Einöder-Moreno et al. (2016)	OutB	NO	Conference centre	Food	GGI	GGI.2 Southhampton	Meeting participants, kitchen staff	2013	1	76	2	74	0.03	
Mayet et al. (2011)	OutB	FR	Military camp	Food	GGI	(---) <sub>4</sub>	Military personnel, cook	2011	1	148	1	147	0.01	
Wadl et al. (2010)	OutB	DE	Military base	Food, p2p, EC	GGII	GGII.4 2006b	Military personnel, kitchen staff	2009	1	28	1	27	0.04	[1]
Zomer et al. (2010)	OutB	SE	Manufacturing company	Food	GGI	GGI.3 Desert Shield	Employees, food handlers	2007	1	308	2	306	0.01	
	OutB+	DE	Company excursion	Food	GGII	GGII.2 Melksham-like	Excursion participants	2006	1	73	0	73	0.00	[2]
Seminar			Food	GGII	GGII.2 Melksham-like	Seminar participants	1		21	0	21	0.00		
Social gathering			Food	(---)	(---)	Social gathering participants	1		45	0	45	0.00		
Zühl (2006)	OutB	DE	Broadcasting center	(---)	(---)	(---)	Employees, security staff	2006	1	47	0	47	0.00	
Fretz et al. (2005)	OutB+	CH	Municipality (n=2)	Water	GGI, GGII	GGI.2 White Rose, GGII.4 Camberwell	Inhabitants	2001	1	>650	0	>650	0.00	

Authors/year of publ.	Study type <sup>1</sup>	Country <sup>2</sup>	Setting	Transmission path <sup>3</sup>	Genogroup	Genotype	Collectives infected	Outbreak year(s)	Outbreak(s) [n]	Subjects with symptoms [n]	Employees affected [n]	Subjects (non-staff with symptoms) [n]	Ratio symptomatic employees: symptomatic persons (total)	Remarks
			Ski camp (n=3)	Food, EC	(---)	(---)	Skiers		3	63	0	63	0.00	
			Social gathering	(---)	GGI	GGI.4 Chiba	Family members		1	20	0	20	0.00	

Legend

<sup>1-4</sup> see supplementary table 1

[1] the symptomatic staff member reported only nausea; [2] all three NoV outbreaks are linked to the same food handler

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