





**Key Question:** Can norovirus be spread by droplet form? Are using face masks protective?

Ref. List # Author/Year ID#	Participants, Intervention (or exposure), Methods and Outcome Measures	Results	Conclusions and Comments: Strength of Design, Quality and Directness of Evidence
<p>Friesema, I., Vennemo, H et al. 2009</p> <p>Controlled Clinical trial</p> <p>Epidemiology and Infection</p>	<p>54 volunteer units from health care facilities implemented a defined set of IC measures within 3 days of a GI outbreak. Attack rates of patients/residents and staff were evaluated and correlated to practices using univariate and multivariate regressions</p>  <p>Adobe Acrobat Document</p>	<p>For staff the use of a face mask when exposed to vomit was associated with decreased attack rate in both univariate and multivariate regressions</p> <p>Multivariate relative risk 0.36 CI (0.23-0.57)</p>	<p>The use of face masks by staff for activities when they are exposed to vomit appears to reduce the risk of illness.</p> <p>High quality Direct effect Strong design</p>
<p>Marks, P., Vipond, I. et al 2003</p> <p>Cohort study</p> <p>Epidemiology and Infection</p>	<p>Questionnaires were given to all ill children in one school outbreak. Comparisons were made between those classrooms where there was vomiting and those with no vomiting. 59% of ill students responded. Stool samples sent on 7 students</p>  <p>Adobe Acrobat Document</p>	<p>Attack rates increased significantly with the # of vomiting episodes students were exposed to (<math>\chi^2 37.8</math> <math>P &lt; 0.0001</math>)</p> <p>Odd ratio for student exposed to vomiting in classroom = 4.1 (1.8-9.3) <math>p = 0.0001</math></p> <p>Temporality of illness to exposure rules out 5/7 stool samples positive for a single strain of norovirus by PCR</p>	<p>Strong suggestion that norovirus may be transmitted by droplet form.</p> <p>High quality Evidence is extrapolated Moderate study design</p>
<p>Marks, A., Vipond, I et al 2000</p> <p>Cohort study</p> <p>Epidemiology and Infection</p>	<p>126 people from a restaurant outbreak, where one person had vomited onto the floor during the meal, contacted. 83 responded, 52 had GI illness. Structured questionnaire completed and 9 stool samples analysed. People were plotted onto a table and seating plan of the</p>	<p>Significant relationship between distance from index case and risk of becoming ill <math>\chi^2</math> for linear trend 11.47 <math>P = 0.0007</math>.</p> <p>1/12 wait staff ill (not person who cleaned up vomit)</p> <p>5/9 stool positive for norovirus and negative for bacterial pathogens</p> <p>Univariate analysis ruled out</p>	<p>Strong suggestion of droplet spread</p> <p>Medium quality Evidence by extrapolation Moderate design</p>

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	restaurant and onset, and duration of each documented as well as food consumed Relative Risks were calculated  Adobe Acrobat Document	food	
Marx, A., Shay, D., et al 1999  Cohort study  Infection Control & Hospital Epidemiology	Outbreak investigation of LTC site used medical records, questionnaires, environmental swabs and lab tests (11 stools and 1 vomitus) 52/91 residents ill Diarrhea in 90%, vomiting in 70% 34/97 staff ill (diarrhea 95%, vomiting 52%) IC measures had not been implemented until day 22 of outbreak	Those who were exposed to cases RR 2.2 (1.0-4.9) $P < 0.05$ or vomit RR 2.6 (1.1-6.5) $p < 0.05$ were more likely to become ill 9/11 stools positive for NV vomitus negative 0/7 environmental swab positive for NV  Adobe Acrobat Document	Moderately suggestive of possible droplet spread  Medium quality Evidence extrapolated Weak study design  However results consistent with other studies

**Note:** See Evidence Grading System for definitions re design and quality ratings and for criteria for the evidence grade assigned.

### Text Summary For Key Question

**Recommendation:**

Given that it is likely that norovirus may be transmitted via droplet form it is recommended that Health Care Workers wear surgical face masks when they may be exposed to vomit (e.g. patient actively vomiting, cleaning vomit or handling linen grossly contaminated with vomit)

Evidence Grade: B 11

**Rationale for evidence grade rating:**

One strong study design with support from multiple medium and weak design studies of high/medium quality, with consistency of results