**Key Question:**

**Is there short term immunity following infection from Norovirus and if so, how long for?**

| 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 |
|---|---|---|---|
| Johnson, P., Mathewson, J., DuPont, H., Greenberg, H. 1997<br><br>1 group controlled human/lab based before-after study<br><br>Journal of Infectious Disease | 42 volunteers were given 3 norovirus challenges. Those who became ill with the challenge (22 for second challenge and 19 for 3rd challenge) had a repeat challenge in 6 months. Participants were assess for clinical illness (defined) and antibodies were measured<br><br>  <br>Adobe Acrobat Document | Antibody levels did not correlate to illness.<br>In majority of cases resistance to infection lasted up to 6 months:<br>60% became ill after first inoculation,<br>18% ill after 2nd inoculation<br>0 ill after 3rd inoculation | Based upon clinical symptoms, homologous immunity demonstrated for up to 6 months<br><br>Medium quality<br>Direct evidence<br>Strong study design |
| Parrino, T., Schreiber, D., Trier, J. et al 1977<br><br>Lab/human based before-after study<br><br>NEJM | 12 male volunteers were challenged with norovirus. All were rechallenged 27-41 months later, and 4 those who became ill and were rechallenged 4-8 weeks later. Antibody levels were measured in 5 ill and 3 asymptomatic<br>Small bowel biopsies were obtained at different intervals from 10 ill and 11 asymptomatic participants | Antibody levels did not correlate to clinical illness.<br>100% abnormal small bowel biopsies did correlate to clinical illness and 100% of normal biopsies correlated to asymptomatic participants.<br>6/12 ill first inoculation<br>Those same 6 became ill at 2nd inoculation<br>4 of those 6 were given a 3rd challenge (4-8 weeks) and 1 became ill (received challenge at 8 weeks) | Based upon clinical symptoms short term immunity may be acquired by some people and last up to 8 weeks<br><br>Medium quality<br>Direct evidence<br>Weak strength of design<br><br>  <br>Adobe Acrobat Document |
| Wyatt,R., Dolin, R., Dupont, H et al Human/lab before-after study 1974 | 176volunteers inoculated with norovirus 5 of those who became ill were re-inoculated 9-15 weeks later | 11/17 became ill on first inoculation.<br>0/5 became ill on 2nd inoculation (p=0.04) | People may develop immunity for 9-14 weeks following an infection of norovirus<br><br>Quality – medium<br>Direct evidence<br>Weak design |

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|---|---|---|---|
| Journal of Infectious Diseases |  Adobe Acrobat Document | | Older study with older technology but results are consistent with other studies |
| Blacklow, N., Dolin, R., Fedson, D. et al 1972<br><br>Lab/human before-after study<br><br>Annals of Internal Medicine | 40 volunteers inoculated with either 1sr passage 1:5 diluted (n=21) or 2nd passage undiluted norovirus(n=19)<br>6 of these people were given a 2nd challenge 6-14 weeks later<br><br>  Adobe Acrobat Document | 14/21 became ill (1st passage)<br>7/19 became ill (2nd passage)<br>0/6 became ill when re-challenged | Homologous immunity may be developed for 6-14 weeks following clinical infection of norovirus<br>Quality medium<br>Direct effect<br>Weak design<br>Older study using old technology however results are consistent with other studies of stronger design |
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**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:**

During an outbreak staff who became ill and are now cleared to return to work should be assigned to ill patients as much as possible since most of them will have short term immunity for several weeks.
Evidence Grade: B 11

**Rationale for evidence grade rating**:
One strong design study with support from multiple weak design studies of high/medium quality with consistency of results