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### Authors

Widera, Eric  
Chang, Anna  
Chen, Helen L

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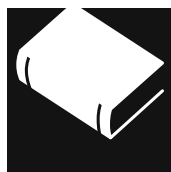
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## Clinical Vignettes



## Presenteeism: A Public Health Hazard

Eric Widera, MD<sup>1,2,4</sup>, Anna Chang, MD<sup>1,2</sup>, and Helen L. Chen, MD<sup>1,3</sup>

<sup>1</sup>Division of Geriatrics, University of California at San Francisco, San Francisco, CA, USA; <sup>2</sup>San Francisco Veterans Affairs Medical Center, San Francisco, CA, USA; <sup>3</sup>Center for Elders Independence, Oakland, CA, USA; <sup>4</sup>VA Medical Center 181G, San Francisco, CA, USA.

"Presenteeism" occurs when an employee goes to work despite a medical illness that will prevent him or her from fully functioning at work. This problem has been well studied in the business and social science literature, and carries increased importance in the health care setting due to the risk of infectious disease transmission in vulnerable patient populations. In this manuscript, we discuss an outbreak of viral gastroenteritis in a long-term care facility and the role presenteeism played in disease transmission and extension of the outbreak. We use existing literature to point out the hazards of presenteeism in the health care sector. We will also discuss factors that may be involved in the decision to work while ill and propose policy changes that may reduce the incidence of presenteeism in health care organizations.

**KEY WORDS:** presenteeism; infection control; *norovirus*; long-term care; outbreak.

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## INTRODUCTION

Presenteeism is defined as "the problem of workers being on the job, but, because of illness or other medical conditions, not fully functioning"<sup>1</sup>. While many employers have always been aware of costs due to absenteeism, there is now increasing evidence that the presence of ill or medically impaired employees may also result in significant costs to the organization in the form of decreased productivity while at work<sup>2-5</sup>. Research on the impact of presenteeism is mainly focused on productivity loss due to chronic conditions such as allergies, arthritis, depression, and diabetes<sup>6</sup>. Acute infectious illnesses pose an additional risk from presenteeism as employees can serve as a vector of disease transmission. To our knowledge, few studies have reported this relationship between presenteeism and infectious disease transmission in health care settings. We describe a viral gastroenteritis outbreak in a long-term care facility in which presenteeism was a key risk factor in disease transmission and extension of the outbreak. We review the risks and underlying factors that promote presenteeism, and

propose novel solutions in light of its importance to public health, the safety of our health care workforce, and the health of our patients.

## CASE REPORT

On January 19, 2005 (day 1), three nursing home residents and one staff member at a 100-bed, two-floor urban facility developed symptoms of nausea, vomiting, and diarrhea (Fig. 1). General infection control measures were reinforced, including hand hygiene education for nursing home residents and staff, contact isolation for symptomatic residents, and new surface disinfection procedures. On days 2 and 3 of the outbreak, seven more residents developed similar symptoms, as well as four additional staff. Two of these staff members reported diarrhea after arriving at work and were asked to go home after discussions with the infection control team. At this point, the public health department was notified and more restrictive measures were instituted, including closure of the dining room, suspension of group activities and outings, limitation of visitors, volunteers, and trainees, rescheduling of elective surgery and non-urgent clinic appointments, and discontinuation of new admissions. Staffing strategies were also temporarily changed so that nursing staff did not float in or out of the unit. As per policy, supervisors were instructed to refer employees with signs or symptoms of an infectious illness to Employee Health for diagnosis and determination of suitability to continue work. However, no daily systematic screening process took place to identify ill staff members at the start of their shift.

Over the course of the next 10 days, 23 residents and 18 staff developed symptoms of nausea, vomiting, and diarrhea. Laboratory studies of affected staff and residents confirmed *norovirus* genotype 2. By day 8 of the outbreak, it became increasingly clear that ill staff members continued to work despite strong recommendations to the contrary by management. Often, symptoms were not reported until employees had arrived for and sometimes completed their shifts. Several employees also reported ill family members with similar symptoms. Infection Control responded by contacting each ill staff member to verify symptoms, provide education, and ask that they remain home. Several nursing staff members who were symptomatic at work were asked to leave as soon as they reported symptoms and to not return until they received clearance from Employee Health. Staffing was managed through the use of registry or per diem nursing coverage when appropriate.

No new cases occurred from days 13 through 17 of the outbreak. However, on day 18, a staff member arrived at work ill with gastrointestinal symptoms. On day 21, an additional two

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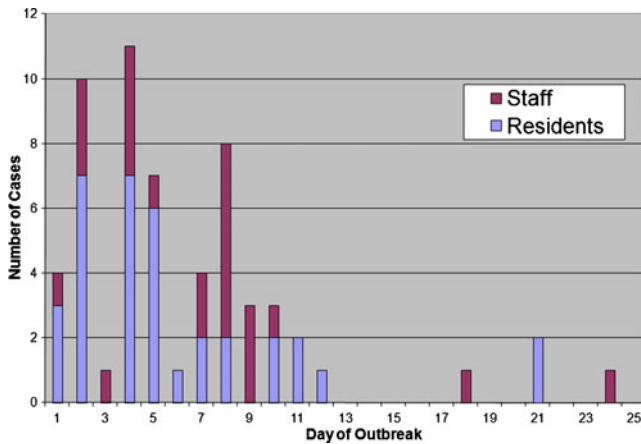


Figure 1. Nursing home residents and staff with abrupt onset of nausea, vomiting, and diarrhea.

residents developed gastroenteritis. As voluntary measures to prevent presenteeism failed, the local department of public health mandated enforcement of “back to work” rules. These rules required employees with gastrointestinal symptoms to obtain clearance from Employee Health before being allowed to return to work. This clearance was given only after 48 symptom-free hours had elapsed. The final case was identified 24 days into the outbreak, and gastroenteritis-specific infection control measures were discontinued on day 34.

## DISCUSSION

The concept of presenteeism has been a topic of discussion since the 1980s in the social science and business literature worldwide<sup>1,7</sup>. This literature focuses mainly on the economic impact based on loss of worker productivity, which has been estimated to cost more than \$150 billion per year in the United States<sup>1</sup>. Presenteeism has not yet made a significant entrance into the health care literature, unlike its counterpart absenteeism, which has received far more attention. In April 2010, a search for the term “absenteeism” in PubMed resulted in 5,636 English-language citations. In contrast, a search for “presenteeism” yielded 135 citations. Fifty percent of the citations were found in occupational medicine or health care management journals. The majority of these presenteeism articles focused on the impact of decreased worker productivity in workers with chronic physical or mental health conditions, or the validation of instruments designed to measure presenteeism. Only 12 of the 135 articles included workers in their study populations, and only 2 studies suggested that presenteeism might be linked to communicable disease spread<sup>8,9</sup>.

Health care personnel who return to work despite having ongoing symptoms of an infectious disease extend the risks of presenteeism far beyond reduced productivity issues into the realms of patient safety and public health. The *norovirus* outbreak at our long-term care facility is an example of how workers continue to work with symptoms of a contagious disease. Although we cannot directly link transmission from staff to residents due to limitations in data collection, there are many case reports that implicate ill health care workers as

vectors for transmission of diseases such as influenza<sup>10</sup>, pertussis<sup>11</sup>, methicillin-resistant *Staphylococcus aureus*<sup>12</sup>, and *norovirus*<sup>13,14</sup>. *Norovirus* is of particular concern with regards to presenteeism. *Norovirus* are a leading cause of gastroenteritis outbreaks as the virus can easily spread from person to person, with as few as ten virus particles thought sufficient to cause an infection<sup>15–17</sup>. The highly contagious nature of *norovirus* frequently leads to outbreaks in long-term care settings as residents are often functionally dependent and require close contact with nursing staff. This dependency on staff increases the risk of staff-to-resident transmission in propagating outbreaks<sup>13,18,19</sup>. Nursing staff may also work at more than one facility, as was the case in our reported outbreak, making presenteeism in the face of an ongoing infectious disease outbreak an even greater public health risk. The risks of an otherwise self-limited viral infection in a frail institutionalized population cannot be over-emphasized; nursing home residents in the United States are four times more likely to die from gastroenteritis than community dwelling adults<sup>20</sup>.

Health care workers as a group are very likely to continue to work when infected with diseases such as influenza and *norovirus* despite the serious public health risks of presenteeism<sup>21,22</sup>. Rosvold et al. surveyed 1,015 Norwegian physicians. During 1 year, 80% of the physicians went to work during an illness for which they would have “sick listed” a patient. Two thirds of these episodes involved a possible contagious disease such as respiratory or gastrointestinal infections<sup>23</sup>. In another survey, 1,339 UK physicians were asked if they would take the day off if they had symptoms of a severe cold. Eighty-seven percent of general practitioners and 57.8% of hospital consultants responded “definitely not” versus 31.9% of the comparison group, salaried office workers<sup>24</sup>. Medical trainees also appear to have high rates of presenteeism<sup>25</sup>. Ohrt and McKinney reported in a study on influenza vaccination that 70% of medical residents and students admitted that they had worked while experiencing influenza-like symptoms<sup>26</sup>. Similarly, long-term care employees have high rates of presenteeism. In a large Swedish population study<sup>27</sup>, nursing home aides were among those workers at the highest risk for working while ill. Another study done during an investigation of an acute gastroenteritis outbreak in a nursing home revealed that 94% of surveyed ill employees went to work while ill and 8% vomited while at work<sup>28</sup>.

What drives health care workers to come to work while ill? The answer to this question is complex as it may depend upon the discipline of the employee, their social status within an organization, their level of job and financial security, and the care demands at work. Social status within an organization seems to play a large role independent of clinical discipline. For instance, a survey of physicians in various levels of training showed that medical students often cited factors that were dependent on the opinions and impressions of others as a reason to come to work with a respiratory tract infection<sup>25</sup>. This was opposed to staff physicians who were more concerned about the delivery of patient care if they were to call in sick. A similar finding is seen within nursing. In a qualitative study of Australian nurses, a sense of tension arose for nurses when determining whether to come to work while ill<sup>29</sup>. This tension was created by previous interactions with supervisors who questioned the legitimacy of prior illnesses and focused on the need to report illnesses in a time frame that would ensure the adequacy of replacement staffing. There also may be significant

financial incentives for going to work while ill for those lower in an organization's hierarchy due to a lack of paid sick leave or high levels of job insecurity<sup>30,31</sup>. Lastly, rates of presenteeism can be influenced by care demands at work. In Nordic elder care staff, higher levels of work-related demands due to understaffing and increased time pressures were associated with relatively large increases in presenteeism<sup>8</sup>.

Any recommendation to limit presenteeism's role in disease transmission must positively influence the decision by staff members to stay at home while sick. Even though there are no clinical trials evaluating whether time off from work while ill limits infectious disease transmission, there are some case reports that support that it may<sup>32,33</sup>. In one retrospective study of several *norovirus* outbreaks in Berlin, the duration of outbreaks was found to be inversely correlated with the length of time staff members took off from work<sup>33</sup>. We were unable to identify precise reasons why employees decided not to take time off while ill in our reported outbreak. However, applying concepts from existing literature to our experience with this outbreak, we can make three health care policy recommendations with regards to presenteeism, which may improve patient safety.

The first recommendation is to ensure the availability of unrestricted paid sick leave for all employees working in a health care setting in order to decrease the financial pressure to return to work when ill. A case-cohort study of New York State nursing homes indicated that homes with paid employee sick leave were less likely to have communicable disease outbreaks<sup>34</sup>. Unfortunately, one third of American workers do not have benefits that include sick leave. Data from the National Compensation Survey (NCS) of the US Bureau of Labor Statistics reveal that 12% of hospital workers and 22% of registered nurses do not have paid sick leave<sup>35</sup>. This lack of paid sick leave can lead to a fear of losing income or employment if an employee follows public health guidelines, as seen in a related study looking at compliance with pandemic flu mitigation recommendations<sup>31</sup>. Restrictions on paid sick leave, such as requiring a medical certificate to validate an employee's illness, can limit its effectiveness in preventing presenteeism<sup>25</sup>. Relaxing these restrictions, as was done in the case institution by giving employees 3 days of paid sick leave without a medical certificate, can lead to employees working less often while sick without a subsequent increase in sickness absence<sup>36</sup>.

The availability of unrestricted paid sick leave is only the first step in limiting the impact of presenteeism. The *norovirus* outbreak at our long-term care facility is an example of how many health care workers will continue to work while ill despite the availability of sick leave. This is consistent with other case reports. For instance, a study of 627 ambulatory care employees revealed that 83% of medical practitioners and about 64% of nurses, nurse's aides, allied health professionals, and administrative staff did not report taking sick leave when experiencing influenza-like illnesses<sup>37</sup>. A systematic process that screens all employees for contagious illnesses at the start of their shift may limit the impact of presenteeism. The effectiveness of this intervention is unknown and requires further research, although active case finding is recommended by the CDC as an infection control measure for the H1N1 Influenza pandemic<sup>38</sup>. Policies also need to be in place that not only encourage but require staff to be excluded from work for a minimum amount of time after resolution of symptoms. The minimum amount of time required off may differ for various conditions, including 48 to 72 h for suspected viral gastroenteritis<sup>32</sup>. The financial implications of

mandatory exclusion policies for sick workers are likely to be considered a major barrier to widespread implementation. However, there is evidence that suggests that longer periods of worker exclusion may actually reduce the total number of sick days taken off within an institution due to an overall reduction in the number of ill staff members<sup>32</sup>.

Lastly, any policy that mandates strict back-to-work rules must also ensure adequate staffing and coverage of health care personnel to limit feelings of personal responsibility that encourage presenteeism<sup>39</sup>. Despite the best efforts of education and mandatory exclusion rules, health care providers will likely continue to come to work if they feel that their absence would burden their colleagues or affect delivery of patient care<sup>8,24,25</sup>. Policies that maximize efficiency at work can therefore be detrimental to public health<sup>36</sup>. Furthermore, a policy that ensures adequate coverage may be cost-effective for health care institutions by mitigating the negative financial impact associated with large nosocomial outbreaks. There is evidence that decreased bed occupancy rates resulting from understaffed ward teams during a nosocomial *norovirus* outbreak result in greater costs to the institution than costs from infection control or diagnostic measures<sup>40</sup>. Further research is needed to evaluate cost-effective ways to create some give in the system so that ill health care providers will believe their presence would be more of a risk than their absence.

## CONCLUSION

In the current era of frequent international travel and novel pandemic influenza virus outbreaks, vigilance is required to ensure that appropriate, common sense infection control procedures are in place, including enforcement of policies preventing health care staff from working while they are potentially infectious. These policies should include the availability of unrestricted paid sick leave, systematic processes for screening ill employees, and mandatory exclusion rules. A fundamental shift is necessary by health care organizations to view measures like unrestricted sick leave not solely as employee benefits, but rather as real investment opportunities that help protect patient safety.

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**Corresponding Author:** Eric Widera, MD; VA Medical Center 181G, 4150 Clement Street, San Francisco, CA 94121, USA (e-mail: Eric.Widera@ucsf.edu).

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