

Getting Children to Wash Their Hands



A 2010 shigellosis outbreak originating in an Illinois fast food restaurant infected 21 people and hospitalized 7. Health investigators suggested the source was an ill food handler who worked while sick and did not practice proper handwashing after visiting the restroom.

Public Health Reasons

Fecal-oral transmission is the primary pathway for the spread of enteric pathogens with contaminated hands playing a significant role in this transmission route. Infants (under 12 months old) and toddlers (1-4 years old) have the highest age-specific attack rates of enteric pathogens because they frequently place contaminated objects and hands in their mouths. This can be illustrated by the results of a study conducted by Jiang et al. These researchers showed that after the introduction of a DNA marked toy ball, the marker spread within 1 to 2 hours and reached its peak by hour 6. The high frequency of detection of markers on the hands of children and teachers indicated that hands played a major role in transmission. Highly contaminated surfaces included toy balls, windows, walkers, cabinets, and doors. Researchers observed that children frequently touched these surfaces.

Hand washing is an essential component in disease prevention programs and can reduce the incidence of gastrointestinal illness rates, as well as sickness and absenteeism, by as much as 30% to 40%. In fact, hand washing is cited as a “Method of Control” for nearly 30% of the 142 communicable diseases in the American Public Health Association (APHA) *Control of Communicable Diseases Manual*. Washing one’s hands is the best way to prevent the spread of pathogens, but it is often difficult to get children to comply. In Vietnam and Peru, researchers and governmental agencies initiated handwashing programs targeting children through educational entertainment, such as short TV programs. The research showed that children would wash their hands if an influential person in their lives, such as a teacher or their mother, encouraged them. It also showed that in some cultures, children are often messengers driving change in their communities by reporting on what they learned in school.

Furthermore, younger children may need assistance washing their hands. Some may not have the motor skills to wash their own hands, while others may not be able to reach the sink in order to properly wash their hands. A stool can be used to help children reach the sink, but care needs to be taken to ensure the safety of the child. Most children under 18 months of age are not coordinated enough to safely stand on a stool without assistance. However, not all children develop coordination and motor skills at the same pace, so each child must be evaluated individually.

Practices

Set a good example

Staff should wash their hands thoroughly and at all the appropriate times (See “Practicing Good Hand Hygiene for Care Providers” fact sheet).

Conduct a needs assessment

- Determine how hand washing can be improved throughout the child-care facility.
- Identify the challenges that hinder good handwashing habits.
- Find out:
 - why children are not washing their hands
 - if handwashing sinks, soap, and paper towels are available
 - if children can reach the sinks, the soap, and the paper towels
 - if there is adequate time available for children to wash their hands
 - if children use the proper skills to wash their hands
 - if the reasons for proper handwashing have been communicated
- Use the answers to these questions to develop programs and policies that promote handwashing.

Communicate handwashing messages in the child-care facility

- Decide on your handwashing message.
- Develop your handwashing promotion plan.
- Get participation by involving others in activities, such as:
 - asking children to help hang handwashing posters; and
 - helping children develop a handwashing collage to display at the facility.

Form strategies to promote handwashing

- Display handwashing posters (perhaps student-created posters) in strategic locations, such as restrooms and eating areas.
- Arrange for a voice-recorded message in restrooms, such as “Did You Wash Your Hands?”
- Create a bulletin board or posters on hand washing.
- Create a handwashing puppet show.
- Do a hands-on demonstration to learn proper handwashing procedures.

- Create handwashing cheers and spirited dance routines.
- Make and wear handwashing armbands.

Assess the success of the educational effort

- Observe handwashing practices before, during, and after the effort.
- Determine if the usage of soap and paper towels has changed.
- Review changes in student absences.

Assist younger children with hand washing

- Caregivers and teachers must provide assistance for children:
 - who can stand but not wash their hands by themselves; and
 - who may not be able to stand on their own but can safely be supported at the sink with one arm and without pressing the child against the sink.
- For a child who is unable to stand or be safely held at the sink to wash hands under running water, the following method must be used:
 - Wipe the child's hands with a damp paper towel moistened with a drop of liquid soap, and discard the towel.
 - Wipe the child's hands with a clean, wet paper towel until hands are free of soap, and discard the towel.
 - Dry the child's hands with a clean paper towel.
- Child-care providers must wash their own hands after assisting children with hand washing (See "Practicing Good Hand Hygiene for Care Providers" fact sheet).

References

1. Aronson, A. S., & Shope, T. R. eds. 2008. *Managing infectious diseases in child care and schools: a quick reference guide*. 2nd Edition. Elk Grove Village, IL: American Academy of Pediatrics.
2. Centers for Disease Control and Prevention (CDC). 2012. National Center for Health Statistics. <http://www.cdc.gov/nchs/> (accessed October 30, 2012).
3. Dutton, P., Peschiera, R. F., & Nguyen, N. K. 2011. The power of primary schools to change and sustain handwashing with soap among children: The case of Vietnam and Peru. The World Bank. http://www.wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/12/14/000333037_20111214022358/Rendered/PDF/660010WSP00PUB0schools0vietnam0pe ru.pdf (accessed 10/08/12).
4. Heymann, D. L. 2008. *Control of Communicable Diseases Manual*. 19th Ed. Washington, DC: American Public Health Association.
5. Hezel, L., Bartlett, C., Hileman, J. W., Dillon, L., & Cessna, T. 2000. Effective handwashing in an elementary school. *School Nurse News* 17 (3): 26-30.
6. Jiang, X., Dai, X., Goldblatt, S., Buescher, C., Cusack, T. M., Matson, D. O., & Pickering, L. K. 1998. Pathogen transmission in child care settings by using cauliflower virus DNA as a surrogate marker. *The Journal of Infectious Diseases* 177 (4): 881-888.
7. Michaels, B. 2002. Handwashing: An effective tool in the food safety arsenal. *Food Quality* 9:45-53.
8. Michaels, B. & Ayers, T. 2003. Handwashing (and drying), the most effective means of reducing the risk of infection. Proceedings of the Third International Conference on Food Safety 2002. Porto, Portugal May 24-25, 2002, pp. 151-68.
9. Michaels, B., Redmond, E., Clayton, D., & Griffith, C. 2002. To reduce rates of foodborne illness lets target handwashing (and drying) a most effective means of reducing disease transmission. Thinking Globally – Working Locally. Orlando, FL, September 18-20, 2002.
10. Michaels, B., Selman, C., von Holy, A., Todd, E., Soule, B., & Griffith, C. 2003. Symposium: role of infected foodworker in foodborne illness outbreaks and intervention strategies. *Journal of Food Protection* 66:183-184.
11. Morrow, A. L., Townsend, I. T., & Pickering L. K. 1991. Risk of enteric infection associated with child day care. *Pediatric Annals* 20:427-433.
12. National Food Service Management Institute. 2004. Wash your hands: educating the school community. University, MS: National Food Service Management Institute.
13. Pickering, L.K., 1990. Bacterial and parasitic enteropathogens in day care. *Seminars in Pediatric Infectious Diseases* 1:263-269.
14. Stegelin, D., Personal communication, January 12, 2006.

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