

# Information You Can Use

## Hand Washing Research

Hand washing is a key, often-overlooked behavior that is important for food safety, disease prevention, and personal health. Yet, most Americans underestimate the potential seriousness of foodborne illness and its' correlation with hand washing practices. Children as well as adults self report hand washing behaviors that scientists fail to observe during observation of food safety related behaviors (6). There is a clear need to communicate risk and enhance consumer motivation for hand washing and personal hygiene that makes lasting behavior change possible. Most people do not wash their hands as often or as well as needed. Research studies support the need for behavior change, effective hand washing education, research, and improved evaluation.

- Several studies have shown that adults fail to wash their hands frequently and effectively. In a 2000 study from Wirthlin Associates sponsored by the American Society for Microbiology, 1,021 people were asked "Do you always wash your hands after using the bathroom?" 95% responded they did. When 7,836 adults were observed in a subsequent follow-up study in public restrooms in five major metropolitan areas, only 68% washed their hands (6).
- Hand washing is important in the prevention of foodborne illness and transmission of pathogenic bacteria and viruses that include *E.coli* O157, Campylobacter, Salmonella, Shigella, and hepatitis A. In foodborne disease analysis (1994-1998), the Hawaii Department of Health reported 3,590 cases of campylobacteriosis, 507 cases of shigellosis, and 547 cases of hepatitis A. Hawaii has the highest rate in the nation for infections with Campylobacter with numbers rising significantly in the past decade (5).
- In a soon to be published analysis of more than 900 outbreaks in Washington State, inadequate hand washing ranked as the leading cause (31.1%) of foodborne illness outbreaks in the 1990's. Estimates based on data analysis from 1990-1999 indicate 1.5 million foodborne illnesses, 6,500 hospitalizations, and 100 deaths occur each year in Washington State with approximately 500,000 foodborne illnesses linked with inadequate hand washing. A manuscript by David Gifford and Janet Andenburg of the Washington State Department of Health is under development. It will be submitted to the Journal of Food Protection for publication (2).
- The Centers for Disease Control (CDC) estimates that there are 78 million cases of food-borne illness with 325,000 hospitalizations and 5,000 deaths each year. The CDC links poor hand sanitation to 34% of the documented cases of foodborne illness (8).
- An estimated 9.3 million cases of foodborne illness at a cost of \$8.2 billion are linked to personal control hygiene factors (9).
- In a 1993 study conducted nationally, consumers believed that most foodborne disease was a minor illness and that most illness came from food prepared outside the home (4).
- A 1999 study conducted in 82 cities in North America by Audits International showed at least one critical violation that could lead to foodborne illness occurred in 69% of the households (3). The most frequently observed critical violations were cross contamination (31%), improper cooling of leftovers (29%), and neglected hand washing (29%).

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- Outbreaks of *E. coli* O157 infections among children have been associated with petting zoos on farms, and at fairs, and festivals. In the spring and fall of 2000, 56 illnesses and 19 hospitalizations were reported among children visiting farms/petting zoos in Pennsylvania and Washington State. Of the 44 state and territorial public health departments responding to a national CDC survey in June 2000, none had laws to control exposure of humans to pathogens from interaction with farm animals during public events (13).
- *E. coli* O157 infections cause an estimated 73,500 cases of illness, 2,000 hospitalizations, and 60 deaths each year in the United States (8).
- In a study conducted by the Food and Drug Administration, only 2/3rds of those questioned reported they used safe food practices that included hand washing, cross contamination prevention, and thorough cooking of meat and poultry (1).
- Children's health is adversely affected when they fail to practice effective, frequent hand washing behavior. 305 Detroit school children were asked to wash hands four times each school day at planned times. Hand washing was not supervised. Children washing at scheduled times had 24% fewer sick days due to respiratory illness and 51% fewer days lost because of stomach upset than did children in classrooms without scheduled hand washing (7).
- In a recent Viewpoint article in the Journal of Nutrition Education, authors from several universities suggest that personal hygiene (estimated 10 million cases of foodborne illness/yr) and adequate cooking/avoid cross contamination (estimated 3.4 million cases of foodborne illness/yr) should receive the most attention in food safety education programs (9).

Outbreaks of foodborne illness including death have also been linked with community events like fairs and festivals (13). During the 1998 Western Washington Fair, there were 3 confirmed cases of *E. coli* O157. The Western Washington Fair attracts 1.2 million visitors each year. While the Centers for Disease Control have not been able to confirm the source of the bacteria, possible connections were suggested to animal exhibits including the petting zoo and food service operations. Large-scale community events like fairs and festivals are being more carefully scrutinized across the United States.

Meaningful cognitive-behavioral changes in hand washing behaviors are vital to community health and the safety and continued success of large-scale public events. Clearly, failure to wash hands is a significant public health concern and linked with food safety from the farm to the table. Foodborne illness has significant economic as well as social costs in the United States.

## References

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