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TECHNICAL REPORT

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TITLE: Employee hygiene and foodborne disease: Is a new paradigm needed?

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ABSTRACT: Personal hygiene and its relation to foodborne disease is reviewed and the conclusion reached that current methods are not working. Recommendations are made for simple improvements that are self-managing and effective.

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INTRODUCTION

Recent CDC estimates of foodborne disease in the United States ascribes 80% of the cases to unknown etiological agents, chiefly viruses such as Norwalk, rotaviruses and hepatitis^{1,2}. Even without the unknown etiology cases, CDC still proposes that Norwalk-like and other viruses are responsible more than 50% of foodborne illness. In Minnesota, 45% of outbreaks over 1981-1998 were attributed to these agents³. Fifty years ago, outbreaks of poliomyelitis from contaminated water used for drinking or recreation was a common occurrence. Experience has therefore taught us that viruses are a normal hazard associated with human-food contact.

Certain high-virulence pathogenic bacteria, such as some Salmonella species, enterohemorrhagic *E. coli* (“EHEC”), *Shigella* and several others also are associated with person-food contamination in a retail environment. This includes classic food and water borne etiological agents, such as *S. typhi* and *V. cholerae*.

All of these pathogens have in common an extreme virulence and low infectious dose, sometimes as low as a few particles or cells, so contamination by incidental contact is completely feasible as a transfer mechanism.

Even since the beginning of this year, outbreaks of shigellosis⁴ and hepatitis⁵ have reached the national news. The first involved a manager harboring a shigellosis infection due to foreign travel. She returned and infected patrons at a country club restaurant. She pled guilty and was sentenced to fine or imprisonment. The second outbreak resulted in one death and involved patrons from two countries. Increasingly these types of outbreaks are involving national specialty law firms and large settlements.

WHAT’S THE PROBLEM?

Everyone agrees that person-to-food contamination occurs for one simple reason: the hands of employees are dirty with infectious agents that can cause outbreaks, and this is easily transferred to ready-to-eat foods by even incidental contacts.

Almost everyone, including CDC, also generally agrees that proper and thorough handwashing could have eliminated the contamination and most of the resulting outbreaks. (Interestingly, some are raising the issue of some pathogens, particularly viruses, being so virulent handwashing alone may not prevent all disease from contact.)

If it’s that simple, and the FDA Model Food Code adopted in part or whole by most States requires employee handwashing, why do we have such frequent outbreaks and such endemic personal contact-related foodborne disease?

The answer is again simple: management.

WHY MANAGEMENT?

Remember the old saw: “Everyone talks about the weather, but nobody does anything about it”? This would be better phrased: “Everyone talks about handwashing, but nobody does it.” Books and numerous journal articles have been written about the efficacy and optimal methods of handwashing. Companies are founded on the business of selling towels, soaps, supplies, compliance tools, training methods and consulting about doing handwashing right. Every restroom has a sign such as “Employees must wash hands before leaving” and all food codes mandate a minimum rate of handwashing for food service employees.

Nowhere is this more obvious than in the medical profession where, since the time of Lister, Semmelweiss and Pasteur, disease has been associated with health care provider personal hygiene. Yet recurring studies show the lack of handwashing even by physicians and nurses after lavatory functions, and a large fraction of institutional infections have been shown controllable by simple handwashing before seeing patients^{6,7}.

The simple truth is that handwashing doesn't prevent disease because even the most professional employees can't be trusted to wash their hands. But today's food service workforce is increasingly poorly trained, has high turnover, is poorly paid, is denied healthcare benefits and is subsequently is prone to endemic disease and working while ill. And managers are increasingly absent or working on the line.

What about management, who puts up those signs in the restrooms and is responsible for enforcing compliance? Remember the last few times you were in a restaurant restroom? How often did you find towels in the towel dispenser instead of on the floor? Or the air blower hot instead of cold? How often was water puddled on the floor? How often were the sinks and handles clean? How often was the soap dispenser full instead of empty? Or that the soap worked instead of rinsing off your hands? Was there even warm water? etc.

The importance management places on handwashing is immediately visible in the execution of their policies.

WHAT'S THE SOLUTION?

Our society doesn't need another conversational topic, it needs an effective solution to the human-food outbreak problem. Science is not the answer, effective compliance is.

Here are a number of simple and effective methods to eliminate outbreaks of human-to-food disease outbreaks:

1. Install a handwash sink in the food handling area. This makes handwashing a visible activity and enforces compliance naturally. (This has worked effectively in a hospital environment⁷.)
2. Use gloves and utensils to touch food. If you don't touch with your hands, the effectiveness of handwashing technique is moot. (But don't relax your rules!)
3. Vaccinate food handlers against common outbreak agents, such as Hepatitis A. This is being used effectively and economically in a number of jurisdictions in the USA.

It's that simple!

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- ¹ Mead, P. S., L. Slutsker, et al. 1999. "Food-Related Illness and Death in the United States." Emerg Infect Dis 5(5): 607-625.
- ² R.A. LaBudde. 1999. "Foodborne disease and public health: a different perspective." LCF Technical Report #161.
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- ⁴ Knapp S. Jan 18,2001. "Eatery boss pays for sickening secret."The Kingston Whig-Standard.
- ⁵ Marler Clark. March 9, 2001. "Food advocates again demand hepatitis A vaccine." Press release.
- ⁶ Vandebroucke-Grauls L. 2000. "Clean hands closer to the bedside". Lancet 356: 1290-1291.
- ⁷ Pittet D, Hugonnet S, Harbarth S, Mourouga P, Sauvan V, Touveneau S, et al. 2000. "Effectiveness of a hospital-wide programme to improve compliance with hand hygiene". Lancet 356:1307-1312.