USE OF FOMITES TO TRACK ENTERIC BACTERIA RESISTANCE WITHIN A COMMUNITY

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Abstract: The spread of bacteria in communities has been and still is a major public health concern. *Escherichia coli* 0157:H7, a possible nosocomial pathogen can persist on inanimate objects for weeks or even months, causing severe illnesses including bloody diarrhea and haemolytic uremic syndrome. Each year it is estimated that more than 2.2 million lives are lost due to these infections, more than malaria, HIV/AIDS and measles combined. Many factors lead to individuals coming into contact with pathogens. Bacteria may be passed directly through hand to hand contact from fomites such as door knobs, bank machines, public restrooms, and money. Paper currency is least considered when thinking about the spread of bacteria. However paper currency is widely used to purchase goods as well many other services in the community, making it a good vehicle to track the spread of pathogens. We hypothesize this fomite can be used to determine the enteric bacteria present in an area. To examine the bacteria carried by money, dollar bills were pressed onto and cultured on EMB agar. A bacterial colony was gram stained and the negative rods were then inoculated into an Enterotube II. Bacteria identified by the Enterotube II’s, a multitest system, included *Shigella, Acinetobacter, Serratia, and Proteus*. Many of the bacteria being gram negative demonstrated resistance to Penicillin G. Other antibiotic sensitivity tested included, Streptomycin, Erythromycin, Neomycin, Novobiocin, Kanamycin, Tetracycline, Chloramphenicol. Many of the bacteria tested showed resistance to 3 or more antibiotics suggesting that multi-drug resistant enteric bacteria are common. We suggest that monitoring the antibiotic resistance of the enteric bacteria within a community may be a first line signaling emerging antibiotic resistance.

Keywords: Enteric bacteria, Fomite, Antibiotic resistance, Paper currency, Shigella, EnterotubeII multitest system