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REPORT SUMMARIZES ZYGOMYCOSIS OUTBREAK IN SUBSTANDARD LAUNDRY

Richmond KY – January 19, 2016 – Initial reports from Hong Kong this past July indicated “the death of two [three] people at Queen Mary Hospital was linked to a fungus found in linen samples from a laundry”. In a follow-up investigation by Vincent C.C. Cheng, MD and colleagues at Queen Mary Hospital results confirmed that Rhizopus microsporus discovered on the textiles had played a role in the deaths of three patients there.

Similar, but not identical, to the Zygomyces contaminated linen identified at Children’s Hospital in New Orleans, Louisiana in 2008 the investigation at the hospital’s designated laundry revealed deficiencies in the physical environment, transportation of the linen and discrepancy in wash water temperatures.

Following the investigation, Dr. Cheng and associates recommended the need to resolve problems discovered at the laundry citing microbiological testing as a solution for these problems:

- Thorough cleaning, disinfection & de-dusting of the [laundry] facility’s environment and delivery vehicles, including all surfaces and equipment should be enforced and audited.
- Temperature sensors of washing machines should be checked and calibrated regularly by engineers to ensure appropriate washing temperature.
- The laundry process should be reviewed and monitored regularly, especially moisture control during drying & packing process.
- Additionally, there should be clear segregation, including linen, equipment and staff, between clean and dirty areas to avoid cross-contamination of processed items.
- At the hospital level, linen storage conditions, for example, temperature and humidity, must not facilitate proliferation of spore forming organisms.
- Linen consumption should follow the “first-in-first-out” principle, and topping up of linen items must not be allowed.

In a June 2015 article appearing in Infection Control & Hospital Epidemiology, Lynne Sehulster, PhD, M(ASCP) notes concerns related to the reliance on regular microbiological testing of clean textiles (exclusive of an outbreak). “Given that most healthcare laundry facilities will process thousands, if not millions, of pounds of laundry in the 3-year certification period (the period established in the testing program in the United States), testing a very small number of textiles would not meet this criterion.” This recommendation is validated in the Hong Kong incident where only 12.2% of the textiles tested from the designated laundry indicated contamination with Zygomyces yet this was a significant enough percentage to result in tragedy for these fragile patients.

ALM supports Dr. Sehulster’s conclusion, that “Microbiological testing will not detect contamination where we have seen it occur most often—in transit, in storage.” Measures enacted in the U.S. after the New Orleans tragedy by the Centers for Medicare and Medicaid Services (CMS) now require hospitals to provide regular oversight of their contracted services as provided in their Conditions of Interpretation §482.12(e).

Dr. Sehulster concludes that “Healthcare epidemiologists would benefit from gaining some familiarity with HCT [health care textile] laundering, facility policies, and procedures for management of hygienically clean HCTs. If an outbreak of HAIs potentially linked to HCTs occurs, it is not enough to conduct microbial sampling of laundered textiles and declare the laundry process as the source of the problem. Each of the distinct operations of the laundry process needs to be evaluated in order to pinpoint the root cause of the problem. The greatest risks of diminishing the hygienically clean state of HCTs appear to be associated with inadvertent environmental contamination due to a malfunction of the laundry process or poor storage conditions of HCTs after laundering.”
The best mechanism to ensure that a healthcare laundry consistently produces hygienically clean textiles is through observation and assessment of the laundry's compliance with adherence to the accepted standards of practice. “At least one on-site inspection of the laundry facility by hospital staff on an annual basis is needed to make this determination. In order to help infection preventionists or environmental service directors with this inspection, the Association for Linen Management is now making a laundry facility checklist available on its website.”

ADDITIONAL RESOURCES:

- Clinical Infectious Diseases - http://cid.oxfordjournals.org/content/early/2015/12/12/cid.civ1006.abstract

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ii Cheng, et al, Hospital Outbreak of Pulmonary and Cutaneous Zygomycosis due to Contaminated Linen Items From Substandard Laundry, Clinical Infectious Diseases
iv Cheng, et al, Hospital Outbreak of Pulmonary and Cutaneous Zygomycosis due to Contaminated Linen Items From Substandard Laundry, Clinical Infectious Diseases
vi Ibid
vii Ibid