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# INFECTION CONTROL

## In Correctional Laundries

In Washroom Chemistry Basics 101, you learn the main premise for institutional laundering. The wash process is impacted by all of the following: proper agitation, appropriate chemical selection, water temperature, and heat. Microbes are killed by exposure to heat and chemicals, and proper agitation provides the mechanism for obtaining the optimal exposure. While there are very few reported cases of healthcare-associated diseases linked to contaminated fabrics<sup>i</sup>, it is through adherence to these basic principles that risk of actual disease transmission is avoided.

The correctional environment creates a unique set of issues related to processing textiles for an incarcerated population. It is often the practice of many prisons, jails, and offender facilities to utilize mesh bags to process inmates' clothing, bedding, and towels. This practice is often used to: (a) allow offenders to wear their own clothing, (b) streamline the laundry process, (c) reduce the time necessary to sort and return textiles to the appropriate offender, and (d) reduce theft of clothing/textiles by other offenders.

However, the practice of processing inmate laundry in an open weave or mesh bag has drawn recent attention from healthcare and, especially, infection control practitioners, as well as prison laundry directors. Concerns have arisen regarding the (a) over-filling of the bags, (b) introduction of foreign objects into the bags, (c) incidents of undetermined rashes/skin irritation, and (d) an increase in less than adequate removal of soil/stains from processed textiles.

The typical scenario utilizing the individual/offender mesh bag system varies in detail but basically provides each inmate/offender with an open weave mesh bag that holds clothing, bedding, and/or towels for processing in the facility laundry, and the textiles remain in the bag throughout processing. The concept is that only the inmate to whom the textiles belong can retrieve the articles since they are typically sealed/closed by the offender prior to being sent to the laundry and can only be opened by the inmate to whom the bag belongs.

By cramming the bags full of linens and textiles, inmates are reducing the penetration of water, chemicals, and the heat of the dryers into the bag. notes Dr. Marcia Pierce, Professor of Microbiology at Eastern Kentucky University and instructor at ALM's Laundry and Linen College. "The mechanical removal of normal soil from the articles is poor because of the lack of exposure, while microbes in the soil are protected by the lowered exposure to heat and chemicals present in the wash and dry cycles." Dr. Pierce is concerned that since "microorganisms are inactivated due to heat denaturation of their proteins, chemical action on their cellular membranes, and oxidation of their proteins with dry heat. If the soil is not removed, these processes cannot take place and the microbes can survive the intended action of chemicals and heat." It has been noted that the mesh bags can often be stuffed so tightly that the textiles in the center of the bag exit the wash process still dry; therefore, receiving none of the benefits of the wash process.

Two key concepts cited by the Association for Professionals in Infection Control and Epidemiology (APIC) in correctional settings include:

1. A high-risk for individuals at greater risk of tuberculosis, bloodborne pathogens, and sexually transmitted diseases.
2. Correctional facilities' employees have a high risk of communicable disease exposure due to overcrowding, old facilities, and a high-risk population. <sup>ii</sup>

The National Commission on Correctional Health Care (NCCHC), recognizing the importance of an effective infection control program, has defined the correctional infection control program as an essential standard for prisons and jails. Such facilities must meet the requirements of this standard to attain their national accreditation.

Recent recommendations from the Centers for Disease Control and Prevention (CDC) recognize the unique nature of this population and recommended close collaboration with local and state public health personnel for the prevention and control of hepatitis among inmates, releasees, and the communities to which they return.

We agree with APIC in that, because of the nature of correctional facilities and characteristics of the incarcerated population, specific communicable diseases are more prevalent in this population compared with the general population. The infection control program should be prepared with detailed protocols that address these situations. While there are very few reported cases of healthcare-associated diseases linked to contaminated fabrics, inadequate processing, especially in this environment, lends itself to an increased likelihood of adding to the incidents of hepatitis, scabies, e-coli, staph infections, skin diseases/disorders, and other illnesses that can be eliminated through disinfection by proper laundry processing.

In addition to the concern for spread of disease, it is also essential to note that the accidental and/or intentional introduction of foreign objects into the bags poses a problem to the laundry equipment, as well as in increase of exposure to laundry workers to possible infection and disease.

Some facilities have adopted policies that hold inmates fiscally responsible for damage to laundry equipment, clothing, or textiles resulting from the placement of foreign objects in the bags. Contraband, sharps, food, and excrement can be common finds in the laundry bags. It should be noted that the CDC does not require disinfection of washing and drying machines in residential care, as long as gross soil is removed from items before washing and proper washing and drying procedures are used.<sup>iii</sup>

Informal surveys of various correctional laundries provided a number of options to reduce and/or avoid the inherent problems identified through the use of the mesh bagging system. We've noted some of these options below:

- Bedding, clothing, and towel exchange systems.
- Issuance of three different colors of bags to each inmate. One for clothing, one for white products, and a third for linens.
- Stamping the inmate's bedding, towels, and clothing with the inmate's unique identifier and providing scheduled replacement through an exchange program.

Long-time correctional laundry director, Bart Carpenter, RLLD, notes that, "one inherent problem in correctional laundries is that many jails and prisons fail to provide training for laundry staff (both correctional staff and inmates). Plus the rapid turnover of inmates lends itself to less than

optimal operating procedures." Carpenter also comments, "automation of the chemicals/wash formulas has been extremely beneficial to the process."

Alternatives to the problems inherent to the mesh bagging system and opportunities to reduce the overloading and introduction of foreign objects are available and should be evaluated for each facility, their budget, and staffing restrictions. Concern for the future implications of infectious diseases, as noted by APIC, include methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococci (VRE). The results of a study specifically designed to determine the survival of 22 gram-positive bacteria on five such materials was recently disclosed. The researches found that MRSA was able to survive from 1 to as many as 56 days and that VRE survival ran from as few as 11 to more than 90 days.<sup>iv</sup>

It is imperative that facilities don't stick their heads in the sand and ignore potential problems. But the issue can be overcome with proper education of correctional laundry directors to the importance of the entire wash process, proper handling techniques, and the enforcement of policies designed to reduce the risk of exposure.

<sup>i</sup> APIC Text of Infection Control of Epidemiology, 2005 Edition, Laundry, Linens, and Textiles, pp 103-1

<sup>ii</sup> APIC Text of Infection Control of Epidemiology, 2005 Edition, Correction Facilities, pp 55-1

<sup>iii</sup> MMWR, June 6, 2003 / Volume 52 / No. RR-10, pp. 27 II Laundry Facilities and Equipment

<sup>iv</sup> APIC Text of Infection Control of Epidemiology, 2005 Edition, Laundry, Linens, and Textiles, pp 103-7

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