

October 27, 2014

Re: Ebola waste from hospitals

Dear [REDACTED]

As you have likely heard, there is a national effort to address and plan for the care of persons infected with Ebola virus. While there have been few verified cases in the U.S., efforts are underway to not only limit its spread, but also to prepare for the care of persons who become infected. Ebola virus disease is spread through direct contact with blood or other bodily fluids of a person who is sick with Ebola. A person infected with Ebola is not contagious until symptoms appear. Ebola is only spread through direct contact with bodily fluids which include saliva, mucus, vomit, feces, sweat, tears, breast milk, urine and semen.

Individuals infected with Ebola virus will likely become hospitalized at some point. Body fluids from those individuals must be disposed. The Center for Disease Control (CDC) has published information that Ebola does not survive for long periods of time outside of the human host, and that the virus will not survive wastewater treatment. Thus, disposal to the sewer is acceptable. This tells us the Ebola virus behaves very similarly to the many other viruses found in wastewater day in and day out.

While destruction by treatment is well understood, the wastewater industry has questioned whether exposure to raw wastewater is a possible means of Ebola transmission to wastewater workers. The industry realizes workers can be exposed to raw wastewater from sewer line breaks, pump station maintenance, and exposure at the headworks of the wastewater treatment plant prior to treatment. KDHE shares this concern over worker safety. The CDC has indicated guidance addressing this issue should be available by the end of October. Until that guidance becomes available, however, KDHE has provided the following information to hospitals for the handling of waste body fluids:

Human body fluids from a patient in isolation should be collected for disposal as Ebola waste or collected and treated with 1 part of household bleach to 9 parts water for at least 10 minutes or longer prior to discharge to the sanitary sewer. Facilities should discuss preferred concentrations and treatment time for bodily fluid wastes utilizing this method with their Public Waste Water Treatment facility director and local emergency manager.

Toilet bowls should be primed with a 9:1 (water:bleach) solution prior to introduction of any wastes (i.e., prior to patient use) to ensure wastes voided during toilet equilibrium actions are appropriately treated. Body fluids expelled directly from the patient into a toilet must be treated again with 1 part of household bleach to 9 parts water for at least 10 minutes prior to discharge to the sanitary sewer; this will require consideration of the toilet bowl water volume to ensure a 9:1 (water:bleach) solution is achieved during treatment.

This procedure is also found on the *Ebola Waste Management in Kansas* flow chart provided to hospitals. A copy of the flow chart is included with this letter for your reference.

We believe this added step of disinfection at the point of generation, along with an environment in a sewer that is hostile to viruses provides a sufficient level of protection wastewater workers. This advice assumes the workers are practicing every day personal protection and hygiene measures recommended by The National Institute for Occupational Safety and Health (NIOSH) for those working in a sewer system. Those recommendations include:

- Workers at wastewater facilities should wash their hands frequently with anti-bacterial soap. Be sure to wash thoroughly and scrub under nails with a brush. Especially be sure to wash up before eating, smoking or drinking.
- Workers should protect open cuts or wounds and be sure to replace contaminated dressings.
- Workers should avoid direct contact with wastewater; always wear rubber gloves and protective clothing when working with wastewater.
- Workers should not wear contaminated or soiled clothing, wash work clothes regularly to remove contaminants. It is suggested that work clothing for wastewater workers be washed on-site, it IS NOT recommended to bring sewage contaminated clothing home. Let work clothing (and work boots) remain at work. Bringing the contaminated clothing home may expose other family members to pathogens. It is also recommended that workers take a shower at the end of each shift.
- In spite of best efforts, at times things may go wrong that result in copious amounts of wastewater or wastewater residues spewing forth onto workers. If workers get sprayed or soaked down with sewage or sewage residues, they should change clothes and take a shower.
- Workers should keep fingernails short and SHOULD NOT bite their nails.
- Workers SHOULD NOT stick fingers or hands in their mouths, noses, eyes or ears.

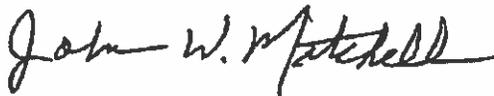
A brief PowerPoint presentation on worker safety for wastewater exposure and other hazards faced by wastewater workers can be found on the KDHE web site at:

<http://www.kdheks.gov/water/download/Safety.pdf>

Again, there have been few confirmed cases of Ebola virus disease in the US. However, the country needs to be prepared to respond to those infected with Ebola if the need arises. As a wastewater treatment provider, you play a key role in public health and sanitation on a daily basis. We appreciate those efforts and ask for your continued support of public health in your community.

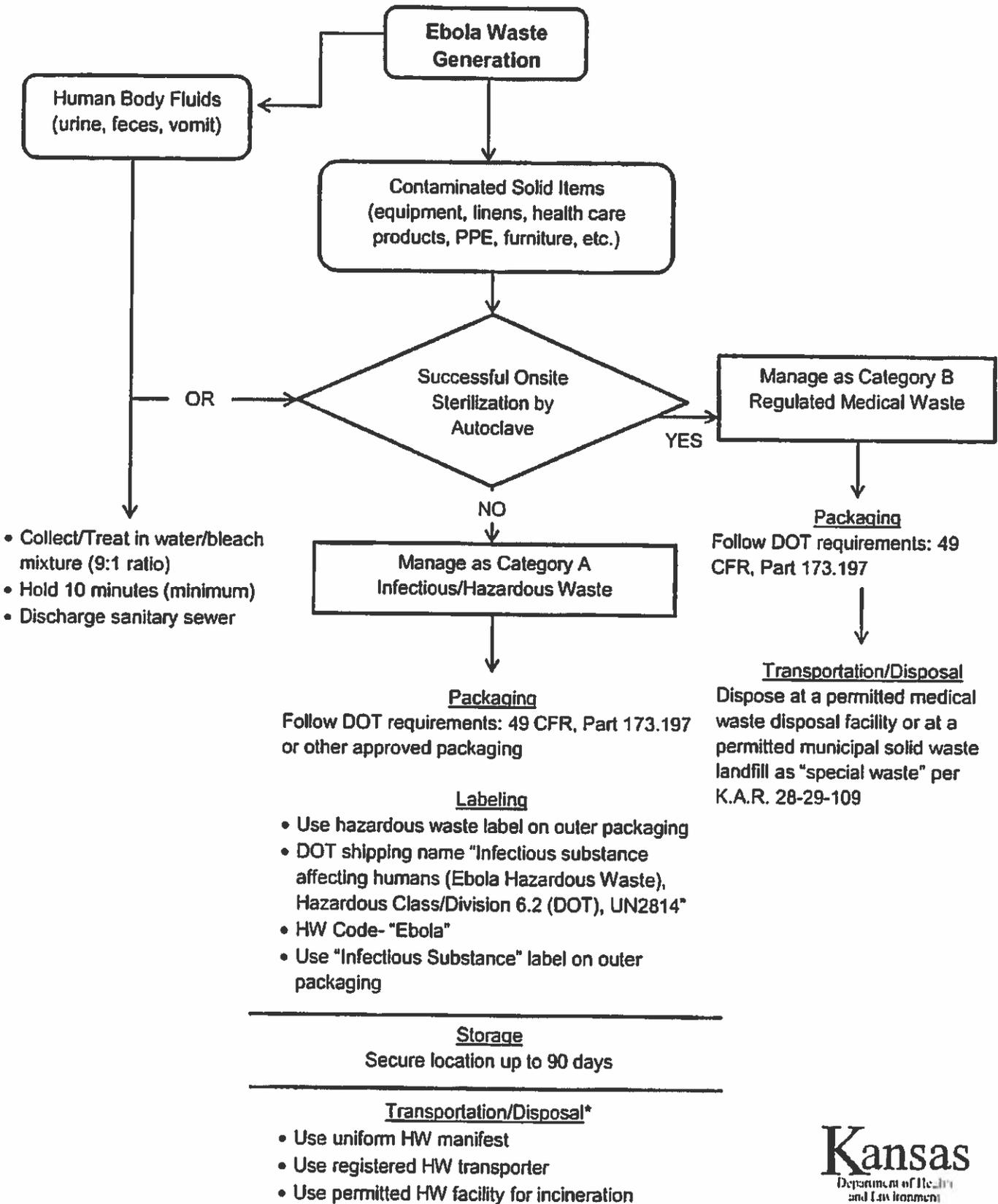
If you have questions, please contact Mike Tate, the Director of the Bureau of Water at 785-296-5504, or mtate@kdheks.gov.

Sincerely Yours,



John W. Mitchell
Director, Division of Environment

Ebola Waste Management in Kansas



*Contact KDHE for assistance