

ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 14 February 2024

Response Date: 23 February 2024

Type of TA Request: Complex

Request:

The requestor asked for information and guidance on the amount of time that patients need to undergo washing during secondary decontamination.

Response:

ASPR TRACIE conducted an online search for relevant resources, including those in the ASPR TRACIE [Chemical Hazards](#), [Hospital Patient Decontamination](#), and [Pre-Hospital Patient Decontamination](#) Topic Collections. We also requested input from members of the ASPR TRACIE Subject Matter Expert (SME) Cadre. Section I provides comments from SMEs, and Section II includes resources containing considerations for patient decontamination duration.

I. ASPR TRACIE Subject Matter Expert Comments

Please note: These are direct quotes or paraphrased comments from emails and other correspondence provided by an ASPR TRACIE SME Cadre member in response to this specific request. They do not necessarily express the views of ASPR or ASPR TRACIE.

SME Cadre Member 1:

- According to the HHS Administration for Strategic Preparedness and Response (ASPR), Biomedical Advanced Research and Development Authority's (BARDA) [Primary Response Incident Scene Management: PRISM: Guidance for the Operational Response to Chemical Incidents](#) (Volume 1, Second Edition), "the duration of showering should be no longer than 90 seconds." However, this guidance assumes that detergent is pre-mixed with the wash water, which is generally not the case for most hospital decontamination processes. **NOTE:** Refer to page 102 of the PRISM document linked in this bullet.
- Time estimates for showering are more generally used to calculate throughput; they were not developed to determine an optimal amount of showering time.
- Effective decontamination ensures that the contaminated areas are first washed with gentle soap and warm water, and then rinsed clean.
- Depending on the amount of contamination, the degree of persistence of the agent (e.g., oily agents), surface area affected, and assistance required by the patient, effective technical decontamination can generally be expected to take from 1-5 minutes per patient (not including time for patients to dry and redress).

- These time estimates depend on the decontamination set up; shower stalls/individual shower areas will be occupied for significantly longer amounts of time than the “wet” time (likely in the 5–8-minute range).
- An optimized system (i.e., one with functional and not time-based goals) can provide technical decontamination that takes a few minutes per patient.

SME Cadre Member 2:

- It is likely that most jurisdictions/hospitals will not have any objective data on this. The 90 second PRISM recommendation (mentioned by SME 1) assumes that there is detergent premixed with the water source. However, it is very unlikely that this would be available in 99.99% of actual mass casualty cases.
- For an individual patient (non-mass casualty situation) with exposure to a caustic chemical, a lot of resources or poison centers will recommend up to 15-20 minutes. Any decrease is likely an attempt to improve the outcomes for multiple patients (rather than one exposed patient).
- It seems to be splitting hairs when we get to 3 vs 5 minutes. I think the more important point would be the water source (bottles of water, buckets of water, garden hose, firehouse, low pressure shower head, immersive industrial shower). However, note that there is no recommendation on the water source that should be used because decontamination cannot be delayed if waiting on a specific water source. The focus must be to get the patients decontaminated immediately with the resources you have.

SME Cadre Member 3:

- There are differences in the references. For example, the Advanced Hazmat Life Support (AHLS) Provider Manual (available for purchase) says that “expert consensus” recommends 3 minutes of water irrigation per person in disasters with large numbers of contaminated patients.
- The rationale is that decreasing the delay in decontamination is more important than a longer duration of decontamination. They also state that longer periods of decontamination are not necessarily proven in medical literature.

SME Cadre Member 4:

- Our health care system looked at this issue several years ago (in semi-formal fashion) and determined the average sized standing person took between 1-3 minutes to disrobe and bag their clothes without assistance, then needed 2-5 minutes to “wash head to toe” (including the armpits and private areas) using a bar of soap with or without a washcloth standing under a continuous stream of water coming from three vertical shower heads they stood in front of. They then needed about 1-2 minutes to dry off and put on a gown.
- Individuals who were obese took 2-5 minutes longer for the same routine previously noted.
- We did not study kids since we are primarily an adult hospital; however, we figured it would probably be the same time whether doing it by themselves (older children) or with their parent or guardian.

- For viscous substance contamination, we project it will require 5-8 minutes or possibly longer.
- We then considered the non-ambulatory patient lying on a Charlie Horse stretcher, which required about 2-3 minutes for clothing removal and same time for the washing and rinsing process (using a handheld hose nozzle from the ceiling), and about 2.5 minutes to dry and then reclothe in a gown.
- In three real world experiences, we found staff had to remind personnel to a) wash from head to toe thoroughly, and b) move the process along as the tendency was for the patients wanting to linger in the shower.

II. Select Resources

Chilcott, R.P., Larner, J., and Matar, H. (Eds.). (2019). [Primary Response Incident Scene Management: PRISM Guidance, Second Edition](#). U.S. Department of Health and Human Services, Administration for Strategic Preparedness and Response, Biomedical Advanced Research and Development Authority.

The Primary Response Incident Scene Management (PRISM) series is comprised of three volumes that can help ensure that patients exposed to potentially hazardous chemicals receive the most effective treatment possible during the initial stages of an incident (after prompt decontamination). Updated in 2019, PRISM incorporates new scientific evidence on emergency self-decontamination, hair decontamination, the interactions of chemicals with hair, and the effects of a combined decontamination strategy referred to as the “triple protocol.” Clinical research showed that these three steps, taken together, remove 99.9 percent of chemical contamination.