

ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 20 April 2023

Response Date: 21 April 2023

Type of TA Request: Standard

Request:

The requestor asked for best practices on the use of dry decontamination methods with pediatric patients.

Response:

ASPR TRACIE conducted a search online for resources related to dry decontamination of pediatric patients, including those included in the [Hospital Patient Decontamination](#), [Pre-Hospital Patient Decontamination](#), and [Pediatric/Children](#) Topic Collections. Section I includes pediatric-specific resources while Section II includes additional decontamination resources.

I. Pediatric-Specific Resources

American Academy of Pediatrics. (2021). [Decontamination: Disaster Management Resources](#).

This resource page includes decontamination considerations for children including suggested processes, noting the need for psychological support, and links to additional resources.

Ann & Robert H. Lurie Children's Hospital of Chicago and Illinois Emergency Medical Services (EMS) for Children. (2022). [Caring for Children During Disasters: Decontamination](#).

This PowerPoint presentation highlights unique characteristics of children to consider in decontamination planning. While dry decontamination is not addressed, some of the general considerations may be helpful.

Goodhue, C., and Blake, N. (2020). [Nursing Management of Pediatric Disaster](#).

Chapter 9 of this book includes information about decontamination of children, including a brief description of dry decontamination.

Minnesota Department of Health. (2018). [Pediatric Surge Triage and Decontamination of Children During an MCI](#).

This training module identifies issues to consider when triaging and decontaminating pediatric patients.

Queensland Health. (2021). [Decontamination of Paediatric Patients Guideline](#).

This guideline describes an Australian emergency department's process for decontaminating pediatric patients.

Tennessee Emergency Medical Services for Children. (2012). [Responding to Chemical Incidents](#).

This course teaches responders how to recognize signs and symptoms of pediatric contamination by chemical agent. It also shares information on pediatric decontamination procedures.

II. General Dry Decontamination Resources

Amlôt, R., Carter, H., Riddle, L., et al. (2017). [Volunteer Trials of a Novel Improved Dry Decontamination Protocol for Use during Mass Casualty Incidents as Part of the UK'S Initial Operational Response \(IOR\)](#). PLoS One. 12(6): e0179309.

In this study, authors reviewed the effectiveness of skin decontamination via dry decontamination using paper towels and incontinence pads. Findings indicated that these methods were even more successful when combined with guidance provided by emergency responders and healthcare workers.

ASPR. (n.d.). [PRISM: Primary Response Incident Scene Management: Guidance for the Operational Response to Chemical Incidents](#). (Accessed 4/21/2023.) U.S. Department of Health and Human Services.

This page includes links to a series of evidence-based guidance on mass decontamination during a chemical incident. Included are Volume 1: Strategic Guidance, Second Edition; Volume 2: Tactical Guidance, Second Edition; and Volume 3: Operational Guidance, Second Edition.

Chilcott, R., Larner, J., Durrant, A., et al. (2019). [Evaluation of US Federal Guidelines \(Primary Response Incident Scene Management \[PRISM\]\) for Mass Decontamination of Casualties During the Initial Operational Response to a Chemical Incident](#). Annals of Emergency Medicine. 73(6): 671-684.

The authors evaluated the clinical and operational effectiveness of PRISM through an exercise and found that the triple combination of dry, ladder pipe system, and technical decontamination attained an average decontamination efficiency of approximately 100% on exposed hair and skin sites.

Collins, S., James, T., Carter, H., et al. (2021). [Mass Casualty Decontamination for Chemical Incidents: Research Outcomes and Future Priorities](#). International Journal of Environmental Research and Public Health. 18(6):3079.

The authors reviewed the literature on chemical decontamination in a mass casualty scenario, based on research in vitro and in human volunteers. The authors emphasize the importance of beginning decontamination immediately/removing contaminated clothing and examine the effectiveness of wet and dry decontamination interventions. They also suggest several areas for future research, including chemical vapors, determining safe chemicals to use with human volunteers, and improving assessment of exposure and risk communication.

Collins, S., Williams, N., Southworth, F., et al. (2021). [Evaluating the Impact of Decontamination Interventions Performed in Sequence for Mass Casualty Chemical Incidents](#). Scientific Reports. 11: 14995.

The authors examined UK decontamination procedures (Initial Operational Response and Specialist Operational Response) alone and in sequence (improvised dry, improvised wet, interim wet, specialist decontamination and a no decontamination control). They found “modest additional benefits” associated with conducting decontamination interventions in sequence.

Southworth, F., James, T., Davidson, L., et al. (2020). [A Controlled Cross-over Study to Evaluate the Efficacy of Improvised Dry and Wet Emergency Decontamination Protocols for Chemical Incidents](#). PLoS One. 15(11): e0239845.

The authors describe a study using readily available materials to achieve dry decontamination, wet decontamination, and combined dry and wet decontamination after a chemical exposure. While “improvised decontamination” is relatively effective, the authors noted challenges with reaching certain areas of the body.

Titus, E., Lemmer, G., and Slagley, J., et al. (2019). [A Review of CBRN Topics Related to Military and Civilian Patient Exposure and Decontamination](#). American Journal of Disaster Medicine. 14(2):137-149.

This article discusses chemical, wet, and dry decontamination methods for chemical and biological emergencies, including the drawbacks of each method. It discusses considerations for civilian and military populations.

Wolfe Laney, J. (2018). [Decontamination Decoded: Disrobing, Dry Wiping Removes 99% of Chemical Contaminants](#). Domestic Preparedness.

This article describes studies that found disrobing quickly reduces chemical contamination by 90% and that contamination is reduced an additional 9% when dry decontamination follows.