Study Confirms Problems with Ambulance Drug Temperatures

Researchers reported at the National Association of EMS Physicians meeting Jan. 17 on the results of a study that examined the temperatures of medications stored in ambulances around the United States.

The research team monitored drug temperatures for one year in ambulances in Syracuse, N.Y.; Orlando, Fla.; Portland, Ore.; Topeka, Kan.; and Mesa, Ariz., to evaluate the effect of a variety of climates. In each location, they monitored drugs stored on ambulance shelves, in medication bags and in small, insulated coolers.

"Everywhere we looked, temperatures were outside acceptable ranges, whether they were stored on shelves in the ambulance, in medication bags or in coolers," said Lawrence Brown, EMT-P, director of research at the Department of Emergency Medicine, SUNY-Upstate Medical University in Syracuse, N.Y., and the study's principal investigator. "The coolers did help somewhat, but not enough," he said.

Noting that some services have put refrigerators in ambulances, Brown warned, "Cold was a problem at every study site; you need to be able to address cold as well as heat. There may be other passive temperature control mechanisms that can work. For example, you may be able to address this problem with systematic stock rotations."

The results of the "Medication Storage Temperatures on U.S. Ambulances: a Prospective, Multicenter, Observational Study" will appear in an upcoming issue of the Pharmacopeial Forum, the official journal of the United States Pharmacopeia.

The study was unfunded, but USP, SUNY-Upstate, Rural/Metro, AMR and the American Ambulance Association provided staff time and materials. Sensitech Inc. of Beverly, Mass., provided electronic monitoring devices and data management and analysis at no cost.

Brown stressed that the study examined only whether temperatures stayed within the ranges required by USP. "We did not evaluate the effects of temperature extremes on the medications," he said.

Kurt Krumperman, president of Rural/Metro's EMS Group, who initiated the research when he chaired the AAA Professional Standard Committee, said, "The study doesn't indicate what ambulance services should do, only that insulated coolers are not the answer."

He said the research team is now waiting to hear if USP will sponsor another study and, if so, what the study questions will be. "We may need to look at the effects of temperatures on certain medications," Krumperman said.

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