

# The RADPACK: A New Concept for Stockpiling Medical Countermeasures for a Radiation Disaster at the Local Level

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**Background:** Current U.S. stockpiling strategies focus on medical countermeasures for biological and chemical incidents. The Centers for Disease Control's Strategic National Stockpile (SNS) was initially designed for addressing a biological incident, then added a forward CHEMPACK component for chemical incidents. A health care policy strategy for stockpiling for radiation emergencies is needed. The World Health Organization has recently begun to explore this issue.

**Discussion:** Medical countermeasures for radiation exposure are specific to the involved radionuclides. The current U.S. SNS has a goal to arrive at the local level within 12 hours of deployment, but some radiological countermeasures must be administered more rapidly in order to be effective. These antidotes include prussian blue, diethylene triamine pentaacetic acid, and potassium iodide. Planners should perform accurate modeling of possible scenarios based on hazard vulnerability analyses to determine how many patients might be exposed and to what types of radionuclides. Rapid identification of involved radionuclides coupled with medical knowledge of treatment regimens will determine whether it is necessary to stockpile countermeasures at the local level (i.e., for a drug that must be administered within minutes to hours to be effective) vs. regionally or even nationally (for therapies that can be delayed many hours to days). If supply is limited (as in the case of prussian blue that currently has a single German manufacturer), this must also be considered. An activation, distribution, and local incident management system must all be in place and exercised.

**Conclusion:** A stockpiling strategy for medical countermeasures for radiological emergencies is a major health policy issue. A RADPACK with antidotes needed in the immediate aftermath of a radiation disaster should be developed and stockpiled at the local level. While prophylactic antibiotics for a biological event can be obtained and administered 24 hours after exposure, emergency managers should not rely on a national stockpile for time-sensitive countermeasures after exposure to certain radionuclides.