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U.S. urged to curb use of 'dirty bomb' ingredient

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By Will Dunham

WASHINGTON, Feb 20 (Reuters) - Radioactive cesium chloride found in medical and research equipment can be used as a deadly ingredient in a "dirty bomb," and U.S. leaders should try to curb its use, the National Research Council said on Wednesday.

About 1,000 machines at U.S. hospitals and universities used for irradiating blood for transplant patients and other purposes contain cesium chloride, the council said.

The concern is that individuals or groups eager to detonate a dirty bomb in a U.S. city could steal this cesium chloride and combine it with conventional explosives such as dynamite into a "dirty bomb" or radiological dispersal device.

The U.S. government should promote alternatives to cesium chloride, said the council, which is part of the National Academy of Sciences and provides advice to U.S. policymakers on science, technology and health issues.

Alternatives to cesium chloride include less-hazardous forms of radioactive cesium, radioactive cobalt and other chemicals that cost more but work just as well in the medical and research equipment, according to the report, commissioned by Congress.

The report proposed that the U.S. government cease licensing new cesium chloride irradiators and discontinue their import and export. The report also said the government should create incentives for owners to decommission devices that rely on radioactive cesium chloride.

About 400 of the cesium chloride irradiators now in use in the United States were made by Canada's MDS Nordion (MDS.TO: [Quote](#), [Profile](#), [Research](#)), according to Leonard Connell of the U.S. Department of Energy's Sandia National Laboratories in Albuquerque, New Mexico, a member of the panel that produced the report.

The report said the number of cesium chloride irradiators appears to be on the rise in the United States. In addition, Connell said, there is no disposal facility for them in the United States.

Theodore Phillips, a professor of radiation oncology at the University of California at San Francisco who headed the panel, said this means cesium chloride, which originally comes from Russia, will continue to pile up.

"If nothing is changed, the amount of it in the United States will continue to increase," Phillips said.

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Congress sought a report on what radioactive material could be used in a dirty bomb. The panel cited the cesium chloride in the irradiators as the leading concern.

"Because of the nature of the applications that employ these irradiators,

they are most commonly located in hospitals, blood banks and universities, many of which are located in cities, large and small," according to the report.

"The presence of these sizable sources in areas that are potentially attractive targets (for attack) is a major factor making radioactive cesium chloride such a concern to the committee," according to the report.

A U.S. Nuclear Regulatory Commission fact sheet on dirty bombs said most types would not release enough radiation to kill people or cause severe illness and that the conventional explosive itself would be more harmful to people than the radioactive material.

But such a bomb could spark panic, contaminate property and require potentially costly cleanup, the agency said. (Editing by Maggie Fox and Cynthia Osterman)

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