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HAZMAT PARTNERSHIPS – THE WISCONSIN STATE LABORATORY OF HYGIENE

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A local Alderman is opening mail at home and finds himself covered in a white powder with a threatening letter inside. What now? It sounds like a job for HazMat. Though HazMat has a robust set of field assessment capabilities with talented personnel there are still responses where additional support and testing resources are required.

The Wisconsin State Laboratory of Hygiene (WSLH) serves as the public and environmental health laboratory for the state of Wisconsin and is home to Laboratory Response Network (LRN) programs. The LRN was developed in response to the 1995 sarin attack in the Tokyo subway and the anthrax letters of 2001. Our LRN mission is to maintain laboratory capability to respond to chemical or biological threat events. This mission includes supporting the first responder community. The WSLH acts as a testing and support resource on situations involving unknown substances or credible threats and works closely with the Type I, II, and III State Asset HazMat teams.

The HazMat-Lab partnership is critical to an effective response. The WSLH works in collaboration with HazMat and our other partner agencies at the federal, state, and local levels and is the next step when more testing is needed than field capabilities allow. We rely on our on-scene response partners to provide assessment information. HazMat metering and characterization information can help direct lab testing, saving time and resources.

The Wisconsin HazMat teams have taken the time and made the effort to engage with the WSLH, inviting us out to training and exercises so we can learn how HazMat operates. A HazMat coordinator once told me “you are part of this team, it’s our responsibility to train you just as you are here to train us.” That’s a partnership. We work together to understand how our response partners operate, what their capabilities and limitations are, and how we can work together to resolve an incident. The outcome is a more effective response to an unknown substance situation.

An example of partnership in action; HazMat teams reached out to the WSLH to help with sample collection protocols they had developed. The goal was to provide clear directions to the teams so that the lab would receive a quality sample for analysis. The teams did an excellent job and we worked together to refine the process into a step-by-step guide for collecting different types of unknown substances in a way that worked well for HazMat. The WSLH then agreed to supply the teams with all of the materials they would need, at no cost, to collect valid lab samples using

the protocols. This includes sterile containers for biothreats screening, glass jars appropriate for chemical analysis, and air sampling Summa canisters. These protocols have since been adopted statewide. Each Type I and II team carries an unknown substance sample collection kit on their response vehicle.

The WSLH presented on this sample collection protocol collaboration at national science conferences, including at the Centers for Disease Control and Prevention (CDC). Other state labs took notice and began collaborating with their HazMat teams to develop similar kits and protocols. Wisconsin HazMat inspired collaboration across the country.

The WSLH trains frequently with different HazMat teams around the state. A recent training focus has been on FTIR and Raman Spectroscopy in HazMat. These are advanced handheld technologies that can provide a presumptive field ID on an unknown substance. We train on the fundamentals of the technologies, the pros and cons, review Wisconsin HazMat case studies, and do hands-on work with real samples.

With the incredible advancements in field instrumentation over the last 10 years, we are seeing complex analytical equipment like portable Gas Chromatography-Mass Spectrometry (GC/MS) technologies marketed for the HazMat field response. Previously this was an instrument only found on the benchtop of a laboratory with a dedicated chemist to run it. These have now been made portable with impressive claims for use in HazMat response; but how effective are they in the field? Is it just an expensive PID? Here is another example of our partnership in action. HazMat teams have reached out to the WSLH for some basic training on GC/MS fundamentals. This interaction has provided team members with some technical background and a better understanding of GC/MS so they are more comfortable evaluating these emerging technologies for HazMat adoption.

The WSLH is appreciative of the partnership with Wisconsin HazMat. Our continued collaboration benefits the overall response capability in Wisconsin. Whether it’s a credible threat situation, an unknown substance, a technical question on field instrumentation or you have the interstate shut down and forgot the Raman password, the WSLH is here to support you - our response partners. 🔥