B102 Scientific Validation of the Reliability of Detector Dog Teams: Progress Towards the Development of a National Standard for Best Practices

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This presentation highlights recent progress towards developing scientifically sound best practice procedures validating the reliability of detector dog teams. Current scientific research and draft best practices developed at biannual national detector dog conferences are presented

This presentation will update interested parties on recent progress towards developing scientifically sound, best practice procedures validating the reliability of detector dog teams.

Even with technological advances in instruments, detector dogs still represent one of the most reliable and widely used real time detectors of contraband and forensic evidence. Unfortunately, to date, there have been limited peer-reviewed published scientific studies demonstrating exactly how these biological detectors work so efficiently and limited scientific assistance to improve performance and confirm the stated reliability of these detection teams. Recent criminal investigations focusing on bomb dogs have highlighted the need to have a standardized method for confirming the performance of detector dog teams.

This poster discusses the critical and independent evaluation of the selectivity and sensitivity of law enforcement detector dog teams and the refinement of optimal methods to validate the performance of these teams. The data indicate that canine detection teams that undergo sufficient initial training and maintenance provide scientifically reliable detection of suspect samples with high precision and accuracy. A model scientifically sound certification protocol for detector dogs including drug and explosive canines has been evaluated. Important training and maintenance factors include the use of double blind tests, positive controls minimizing contamination issues and negative controls including representative distractors.

Also discussed are the results of the refinement of draft best practices for detector dog teams at the 3rd National Detector Dog Conference held recently in North Miami Beach, Florida. Highlights of the group discussions included the need for standardization of nomenclature, specific recommendations based on the work function of the detection team (narcotics, explosives, etc.), general requirements for detector dog trainers, protocols for certification of detector dog teams and best practices for maintenance and deployment record keeping. As one example, certification should only be valid for the specific handler/dog team, should last for one year, and requires that the handler conduct regular maintenance training, among other requirements.

Towards the pursuit of a National Standard for detector dog team best practices, the authors are in the process of initiating a planning panel to explore establishing a Technical Working Group in conjunction with the Department of Homeland Security's Transportation Safety Administration and other national authorities in the field. The best practices draft document should serve as a resource towards the development of a National Standard. The beneficiaries of such a reference standard may include practitioners and policy makers at federal agencies, law enforcement and the legal and judicial community, and those in the private sector who work with detection canines. In addition, if there is to be a National Standard, challenges will be in bridging gaps with other agencies and detection canine associations with respect to their existing Standards and protocols, the harmonization of nomenclature being but one of potentially several issues.

Scientific determination of the reliability of detection teams and the use of scientifically validated teams also facilitates scientific research aimed at identifying the active odor signature chemicals used by canines and the development of improved instrumental methods capable of both particle and vapor detection. Examples from the authors' labs applied to drug, accelerants and explosives detection will be highlighted.

Best Practices, Detector Dogs, Narcotics and Explosives

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