D74 Death Investigation and the Scientific Method

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After attending this presentation, attendees will: (1) learn about the frequency of homicides in the United States and the clearance rates associated with them; (2) will learn about some of the reasons why so many cases are still unresolved; and, (3) will learn how to apply a scientific approach to death investigation by utilizing a Death Investigation Protocol specifically designed to incorporate the scientific method.

This presentation will impact the forensic science community by addressing some of the concerns relating to investigative failures and how these concerns may be remedied through the application of the scientific method to each investigation. It will also outline a scientifically based model to be utilized during the conduct of any investigation that will help to reduce the number of unsolved murders.

At the AAFS meeting in Chicago, in February 2011, Dr. Adcock presented a paper entitled "Managerial Responsibilities in the Homicide Investigation Process: Making a Case for Periodic Reviews of All Ongoing Death Investigations" that is also relative to this presentation but with more of an emphasis on the actual investigative process versus the managerial responsibilities. It is believed that coupling supervisory oversight of death investigations that utilize a scientifically based model will enhance the resolution rate and make other cases stronger for court.

The "scientific method" as practiced by science scholars, researchers, and practitioners is quite straight forward and has proven itself time and time again as the approach to use above all other possibilities. While some have variations, the following steps are commonly accepted: (1) state a problem; (2) observe; (3) form a hypothesis; (4) conduct experiments; (5) collect data; and, (6) draw a conclusion.

However, according to Dr. Thomas Young, "The scientific method, a time-honored approach for discovering and testing scientific truth, does not and cannot work for the forensic sciences in its standard form because it does not work for past events. Past events cannot be observed, cannot be predicted or deduced from physical evidence, and cannot be tested experimentally."[1] It was this premise and writings by Young that were the impetus for the design of the Scientific Method for Investigators in hopes that investigators would realize this process of analysis is not just for scientists and that utilization of it would in fact make stronger cases and increase solvability. Therefore, the Scientific Method for Investigators: (1) obtain from witnesses the accounts of what happened; (2) based on these accounts anticipate the questions you will be asked by others so you can properly collect and record the physical evidence; (3) collect and record the physical evidence: (4) formulate hypotheses about the events that occurred and anticipate the questions you will be asked; and, (5) determine whether the witness statements are consistent with the physical evidence; gather more information or evidence as needed.

Through the process of verifying witness statements, admissions/confessions, consider the evidence at hand and disprove as many hypotheses as you can. Formulate an assessment (final hypothesis) to a reasonable degree of certainty, recognizing the existing limitations.

While keeping those seven steps in mind, the scientifically based model called the Death Investigation Protocol was also designed. It includes all of the steps in a simple format that is easily followed. In its simplest form the death act begins with behavior from two people, a suspect and a victim. Then law enforcement is brought into the picture where the investigation begins at the scene with the collection of the physical evidence and the informational pieces of the puzzle. The standard process moves into the autopsy, crime lab analysis of all evidence, and hopefully the design of a victimology. Once those are all collected and created, the preliminary analysis begins where hypotheses (to some theories of the crime) are promulgated.

The next phase of the model is to evaluate these hypotheses through reconstruction of the physical and informational aspects of the investigation to see if a final analysis can be attained. In the interim, a review of all the pre-offense, peri-offense or "crime behavior," and post-offense behavior should be reviewed and evaluated. Once all this is accomplished the investigator needs to identify the hypotheses that are confirmed; if not, then the process returns to the preliminary analysis. If confirmed are all future questions answered? If not then back to the preliminary analysis, etc. If all questions that can be answered are answered and the hypothesis is validated then one can state a more accurate conclusion as to what happened.

Reference:

[1.] Young, Thomas, Heartland Forensic Pathology, LLC, Forensic Science and the Scientific Method, http://www.heartlandforensic.com/writing/forensic-science-and-the- scientific-method, retrieved July 18, 2011.

Death Investigation, Scientific Method, Protocol

