



G31 Everything Old is New Again: A Program to Examine “Cold” Sexual Assault Cases

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The goal of this paper is to demonstrate the processes that can be employed in a dedicated program for the examination of sexual assault cold case. The poster will also present some of the challenges encountered and overcome in the cases submitted.

This poster will provide an overview of a purpose-built program recently established at the Centre of Forensic Sciences (CFS) to deal with the examination of cold sexual assault cases. Cold cases can be defined as cases where the police investigation has been scaled down and the case is effectively lying dormant. In addition, some interesting and challenging cases submitted as part of the program will be described to illustrate the types of samples encountered and the methods employed to extract information and contribute to the investigation of unsolved sexual assaults where investigative leads have been exhausted.

Recently, a joint initiative was undertaken by the Centre of Forensic Sciences (CFS) in partnership with the Toronto Police Service, an agency serving a large metropolitan area with a population of approximately 2.5 million. This initiative was undertaken to examine or re-examine unsolved sexual assault cases with the goal of uploading DNA profiles from perpetrators to the National DNA Databank (NDDB) of Canada. For the purposes of this project, the term ‘unsolved’ refers to any case for which a conviction has not been registered. Criteria for eligibility were established first and consisted of the following categories:

1. Cases for which a submission had never been made to the CFS previously;
2. Cases submitted to the laboratory but not previously examined due to the absence of a suspect (in accordance with CFS policy prior to 1997);
3. Cases in which material suitable for DNA analysis was detected, however DNA analysis had not been attempted as the identity of the perpetrator was not at issue;
4. Cases in which DNA analysis was attempted using RFLP technology but was not successful at the time (RFLP has been discontinued at CFS since 1995); and
5. Cases in which a DNA profile had been obtained but was not compatible with the requirements of the databank (i.e., profiles developed in the RFLP, DQA1, PM, or STR Quad systems).

The Centre of Forensic Sciences is a provincial government laboratory (Ministry of Public Safety and Security) that serves a population base of approximately 10 million people throughout the province of Ontario, and carries out forensic analyses free of charge for all police agencies in the province, as well as other clients. In consideration of an already heavy caseload and a commitment to timely results, a key requirement was that the laboratory be able to regulate the number of items submitted in support of this project, while providing effective scientific consultation and expertise in the process. To this end cases were assigned to one of two stages for examination.

Stage 1 submissions were those that consisted strictly of a limited number of relevant swabs (in accordance with the case history) from the Sexual Assault Evidence Kit (SAEK). A user-friendly flowchart was developed at the CFS so that investigators could review their files and readily target only those swabs with a high probability of success, given the case history. The provision of this tool developed by forensic scientists allowed investigators, as opposed to forensic scientists, to carry out the task of identifying relevant items according to scientific expectations of success given the case history. Moreover, restricting stage 1 submissions to swabs only allowed the development of a streamlined screening protocol for the presence of semen, which in turn allowed for batch processing and turnaround times of 30 days or less. Any case that did not meet the criteria for a stage 1 submission, as well as any case determined to be negative following a stage 1 submission, was directed for consideration at stage 2.

Since stage 2 cases normally involved the examination of clothing or other scene items not as readily amenable to rapid processing as internal swabs, a senior scientist was made available to provide consultation as to which items in these cases, if any, would be suitable for examination based on the history. Once accepted, stage 2 cases were blended with normal operations.

The Biology Section of the CFS has successfully integrated the analysis of cold cases with ongoing workload with no disruption to work flow. This is the result of an effective partnership between the laboratory and the police service and a mutual, reciprocal respect of one another's capacity and constraints. Within the first few months of implementation, DNA evidence generated from submitted items led to investigative breakthroughs in four unsolved cases through a combination of crime scene to crime scene linkages as well as linkages to convicted offenders. Approximately 50% of cases submitted under the project (stage 1 and 2) have had a DNA profile from semen generated and uploaded to the National Databank.

Based on the success of the program to date, the CFS is in the process of establishing partnerships



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with other agencies in Ontario to provide a similar service, and is also reviewing its case and item acceptance policies to more effectively target minimum numbers of relevant and suitable items for examination, based on the case history provided and the hypotheses being tested.

1: It is important to note that the bulk of the administrative work in this project (e.g., review of case files, tracking of old evidence, etc.) was carried out by police investigators assigned to work full-time on the project.

Cold Cases, Sexual Assault, DNA Databank