

AUTOMATED CODIS UPLOAD FOR FORENSIC CASEWORK

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Entering DNA profiles into the Combined DNA Index System (CODIS) is an everyday occurrence in forensic laboratories. These CODIS entries are usually performed by the DNA analyst who authored the case report. Manual entry of CODIS specimens is a potential area for human transcription error and uses time an analyst can be spending on performing casework. To decrease clerical errors and save time, we have developed an automated approach to uploading profiles onto the CODIS computer.

CODIS specific programs accept only files in Extensible Markup Language (XML) format but our CODIS profiles are created in an Excel program. To convert from Excel to the XML format, a Structured Query Language (SQL) based program is used. First, the Excel file is converted into a text file. The SQL program then converts the text file into an XML file that the CODIS computer can recognize. These converted profiles are stored in a secured folder that can only be accessed by the CODIS Administrator and the Back-up CODIS Administrator. The converted profiles are then uploaded (by way of a USB storage device which is password protected) to the CODIS computer.

To test the CODIS Upload software, 20 specimens were created in Excel. These specimens were converted to XML format using the SQL program and uploaded to the CODIS computer. The data from all 20 specimens was entered correctly. It was also found that a file cannot be imported twice. The CODIS computer will alert you that a sample with the same specimen ID has already been entered.

When creating a CODIS specimen in Excel, symbols that are used in our allele calls are carried over (**^** = allele below stochastic threshold and **ND** = not detected). Two specimens were created containing these symbols. The specimens were successfully converted to XML format but when uploaded an error occurred for each locus where these symbols were present and no data was uploaded for those loci. This result is acceptable in the case of ND because there is no data to be uploaded; however, in the case of the "**^**" symbol, there is data present. The solution was to add a feature to the current Excel program used to create CODIS profiles so that the "**^**" symbols would be removed prior to conversion to XML.

By creating and implementing the automated CODIS upload program, our lab has saved time by eliminating each analyst entering their own profiles into CODIS. Most importantly, transcription errors produced by manual data entry are avoided. The CODIS Administrator and the Back-up CODIS Administrator are the sole individuals entering profiles and they are able to do so in batches as profiles accumulate for entry, generally once a day.