



Pathology/Biology Section - 2016

H130 Development of a Free, Customizable, Forensic Autopsy Report Generator

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After attending this presentation, attendees will understand the potential utility of a forensic autopsy report generator, available at no cost, that has been developed.

This presentation will impact the forensic science community by providing a free webpage to Medical Examiners (MEs) and coroners to facilitate standardized autopsy reports. Users of this software have the option to copy the webpage and customize the templates according to their office's format.

Autopsy reports provide important insights into cause and manner of death of an individual. Families, lawyers, and other medical professionals read these reports; therefore, it is important to generate both clear and accurate accounts of autopsy findings. These cases are often used in court, so it is crucial to keep errors to a minimum. Pathologists strive to meet these standards of excellence; however, workloads often dictate expedient work to achieve appropriate deadlines. To assist in this dilemma, this study presents work on an autopsy report generator.

The report generator is a webpage designed using Hypertext Markup Language (HTML), JavaScript™ (a browser-based programming language), and Twitter® Bootstrap. HTML is the standard language used to generate a webpage.¹ JavaScript™, a commonly used programming language for web development, was utilized to impart functionality to the webpage.² The ability of the webpage to interpret user data, incorporate inputs into a paragraph, and generate a report was made possible by JavaScript™. Twitter® Bootstrap is an open source set of instructions and makes the webpage aesthetically pleasing, user-friendly, and compatible with mobile devices.³ The webpage is hosted at no cost on GitHub.⁴ This was chosen so users could “fork” the webpage, or copy it. By “forking” the webpage, users can modify the report templates that are held within the JavaScript™ files. These modifications will be reflected in the new web address that is generated after copying the webpage. To assess the utility of this resource, the time required to dictate a case versus using the generator was tracked. Editing time was also evaluated and compared using t-tests.

A webpage was successfully designed that generates forensic autopsy reports in full paragraph format. To evaluate efficiency, this study recorded times for comparison against conventional dictation. Overall, the average time to dictate a case was 673 seconds versus 276 seconds using the report generator ($p = 0.04$). Editing time was significantly reduced as well (>11 minute reduction, $p = 0.046$). Several gunshot cases were tested in the webpage and had minimal editing requirements afterward since the webpage has a function to help organize an “Evidence of Injury” section. The webpage also helped ensure accuracy by checking for consistent features, such as gender, throughout the report. Cases with deviations from the normal template, such as a gunshot wound through the liver, automatically applied the user-defined description, inserted the appropriate weight, and removed normal details, such as “the capsule is intact.”

The autopsy report generator created accurate and consistent reports while dramatically reducing the time required by the ME to both generate and edit a report. While it was not feasible to track the number of edits required by dictation versus the webpage, it is believed that the webpage had less because of the difference in editing times. Because the software's user interface implements Twitter® Bootstrap, tablet devices are readily compatible with the webpage. To improve efficiency, physicians could employ tablet devices in the morgue, enter values and notes at the time of autopsy, and have a fully prepared report at the end of the case.

Reference(s):

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