Providing Best Practice Medical Forensic Examinations to Sexual Assault Victims: Development of a Practice Evaluation Tool

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Each year in the United States over 213,000 individuals are sexually assaulted (RAINN, 2011). It is estimated that worldwide, over one third of women are victims of sexual violence in their lifetime (Luce, Schrager, & Gilchrist, 2010). Healthcare that meets best practice standards ensures that victims of sexual assault receive the care necessary to promote positive outcomes and prevent long-term health concerns. The healthcare needs of a sexual assault victim are multifaceted. They range from physical needs, such as the immediate treatment of wounds and injuries, to psychosocial needs, such as treatment of post-traumatic stress disorder. Long-term effects of sexual assault can include chronic pain, sexual dysfunction, depression, drug and alcohol abuse and anxiety (Luce et al, 2010).

**Background**

In order to provide adequate healthcare to sexual assault victims, institutions must be equipped with trained providers to ensure that best practice standards are met. Sexual Assault Nurse Examiners (SANEs) are specially educated to handle the diverse healthcare needs of sexual assault victims. SANE programs are designed to respond to the sexual assault patients’ emotional and physical needs and to provide healthcare and evidence collection (Campbell, 2004).

Institutions with full-coverage SANE programs provide high quality care that is consistent with best practice standards (Plichta et al, 2007). Additionally, communities with SANE programs have higher prosecution rates and report improved psychological and emotional support for victims following the event (Campbell, 2004). Communities
with SANE programs also report an increased awareness of sexual assault. This may be
due to SANE programs’ influence at the community level (Campbell, 2004).

Although SANE programs offer a high level of care to victims of sexual assault,
SANE services are not available in all healthcare facilities. As of 2009, there were
roughly 350 SANE programs located in the United States (Sexual Assault Resource
Service, 2009). While all but three states have SANE programs, the majority of them are
found in large metropolitan cities (Sexual Assault Resource Service, 2009).

In the absence of SANE programs, medical forensic examinations that meet best
practice standards must still be conducted to ensure that victims’ health care needs are
thoroughly addressed and evidence is collected. The purpose of this study was to develop
a tool to evaluate an institution’s ability to provide a medical forensic examination that is
in accordance with best practice guidelines. Such a tool would allow institutions that
lack a SANE program to determine where they may have deficiencies and help them to
overcome those deficiencies.

**Instrument Development**

A victim-centered response through established protocols is essential in providing
the best care for sexual assault victims. In 2004, the Department of Justice released the
*National Protocol for Sexual Assault Medical Forensic Examinations*. Because this
protocol outlines the essential components of a medical forensic exam, the researchers
selected it as a framework for the development of the Sexual Assault Forensic Exam
Practice Evaluation tool (SAFE-PE). According to the protocol, the components of an
exam should include: 1) initial contact, 2) triage and intake, 3) documentation by
healthcare personnel, 4) the medical forensic history, 5) photography, 6) exam and
evidence collection procedures, 7) drug-facilitated sexual assault, 8) STI evaluation and

care, 9) pregnancy risk evaluation and care, 10) discharge and follow-up, and 11)

examiner court appearance. In order to supplement recommendations by the *National

Protocol*, a thorough search of the literature was conducted for each exam component.

**Initial Contact**

Initial contact should include a survey of the victim for injuries that require

immediate medical attention. If injuries are not emergent, the need for evidence

collection through a medical forensic examination should be explained to the victim (U.S

Department of Justice, 2004).

**Triage and Intake**

Upon arrival at the healthcare facility, the patient should be taken to a confidential

and private area for the patient intake procedure, as well as any interviews that may be

necessary (U.S Department of Justice, 2004). At that time informed consent for the

medical forensic examination should be obtained (U.S Department of Justice, 2004).

**Documentation by the Healthcare Personnel**

Examiners are responsible for documenting the details of the medical forensic

examination in the medical examination report. The forensic medical record should be

kept separately from the medical record, as the medical record is not part of the evidence

collection kit (U.S Department of Justice, 2004). Examiners should be properly educated

on the importance of documentation to ensure that the medical forensic record is

thorough, precise and accurate (U.S Department of Justice, 2004).

**The Medical Forensic History**
The medical forensic history guides the examination and evidence collection process. Coordinating the interview process with other departments seeking information about the assault ensures that the process is respectful to the patient and minimizes repetitive questions (U.S Department of Justice, 2004). Advocates should be available to the victim during the medical forensic history process to provide support as well as clarification of any questions that the victim may have (U.S Department of Justice, 2004). Interpreters should be provided if the patient is unable to speak the same language as those conducting the interview (U.S Department of Justice, 2004).

**Photography**

Photography of the patient’s anatomy should be included in the medical forensic report. Physical injuries should be photographed, as well as described in drawings and documented in the patient’s medical record (Ledray, 2001). Those taking pictures of the assault should be educated on forensic photography as well as the equipment that is used (U.S Department of Justice, 2004).

**Exam and Evidence Collection Procedures**

Competent forensic evidence collection is the result of training and experience (Ledray, 2001). Documentation of physical findings and the collection of evidence from the patient’s body and clothing provide information about the assault in an objective and scientific manner (U.S Department of Justice, 2004). The examiner should collect as much evidence from the patient as possible, with respect to informed consent, medical forensic history, and instructions in the evidence collection kit. It is currently recommended that evidentiary exams be completed within seventy-two hours of the assault (Ledray, 2001).
Drug Facilitated Sexual Assault

When drug facilitated sexual assault is suspected, the collection of toxicology samples is necessary and urgent. If the patient or accompanying individuals state that the victim may have been drugged, or if the patient or provider suspects drug involvement because of lack of recollection of events, toxicology screening should be performed (U.S Department of Justice, 2004).

STI Evaluation and Care

The contraction of a sexually transmitted infection (STI) is a significant concern of sexual assault victims (U.S Department of Justice, 2004). Patients should be informed of the risk of transmission, symptoms, and the testing and treatment options available to them. Post exposure prophylaxis should be offered at the time of the exam to ensure that sexual assault victims are treated, in case follow up is not obtained (Luce et al., 2010).

All patients should be offered prophylaxis against STIs when exposure has occurred (U.S Department of Justice, 2004). Prophylaxis should be offered for Hepatitis B, unless the victim has previously been fully vaccinated, chlamydia, gonorrhea, trichomonas, and bacterial vaginosis. Information should be provided about the risk of HIV transmission (U.S Department of Justice, 2004).

Pregnancy Risk Evaluation and Care

The probability of pregnancy should be discussed with all victims of sexual assault. It is estimated that 4.7% of victims, aged 12-45, become pregnant after sexual assault (Lewis-O’Conner, Franz, & Zuniga, 2005). Luce et al. (2010) states that emergency contraception should be offered to all women of childbearing age.

Discharge and Follow Up
Examiners are responsible to provide crisis intervention and ensure follow up counseling services are available (Ledray, 2001). Examiners should ensure that all medical and mental health needs that are related to the assault have been addressed (U.S Department of Justice, 2004). Discharge instructions should be provided in both oral and written forms (U.S Department of Justice, 2004).

**Examiner Court Appearance**

Examiners should be aware of the possibility of their testimony being required in court. Examiners should receive education in basic courtroom proceedings and testimony (U.S Department of Justice, 2004).

**Methods**

The development of the SAFE-PE began by the researchers review of the important components of each of the broad categories identified by the *National Protocol* and the literature review. The broad categories of Initial Contact and Triage and Intake were combined into one section on the tool due to their similar content. The broad category of Examiner Court Appearance was omitted for its limited role in an institution and/or providers’ ability to provide a medical forensic examination. A total of nine broad categories were included on the SAFE-PE.

Two experienced SANEs and two doctoral prepared nurse educators initially evaluated the items on the SAFE-PE in order to establish face validity. Following this, content validity was established through the use of a survey procedure.

After approval from the appropriate Institutional Review Board, the SAFE-PE was sent to 330 SANE-Sexual Assault Response Team (SART) programs identified on the Sexual Assault Resource Service website (www.sane-sart.com), where contact email
addresses were listed (Sexual Assault Resource Center, 2009). An introductory email was sent to the contact email address of each program explaining the survey and its purpose. This email asked the contact member to forward a link to the survey to all SANEs in each program. A follow-up email was sent two weeks after the initial introductory email, as a reminder to complete the survey. Informed consent was obtained by the individuals clicking a “Yes, I consent” button and beginning the survey.

Respondents to the survey evaluated each component of the SAFE-PE through the use of Fehring’s Diagnostic Content Validation model (DCV). The DCV model was originally used to obtain expert opinions from nurses on the degree to which a defining characteristic is indicative of a given nursing diagnosis (Fehring, 1987). In this study, the DCV model was used to evaluate the characteristics of the SAFE-PE.

Results of each survey were confidential and were used by the researchers for purposes of this study only. Demographic information regarding age, gender, education, level of licensure, certifications and length of time as a SANE were also obtained.

Using Fehring’s DCV model, participants in this study evaluated the degree to which each component of the SAFE-PE was characteristic of best practice in a sexual assault medical forensic exam. The following Likert Scale was used: 1 = not at all; 2 = very little; 3 = somewhat; 4 = considerably; 5 = very much (Fehring, 1987). Weighted means for each component were then calculated. The weights corresponded to the Likert scale as follows: 1 = 0; 2 = 0.25; 3 = 0.50; 4 = 0.75; and 5 = 1.0. All defining characteristics with weighted means less than 0.5 were left off of the final version of the SAFE-PE (Fehring, 1987).

Results
A total of 270 individuals responded to the online survey. Demographic information is displayed in Table 1. Not all respondents replied to each demographic data question. A return rate remains unknown, as the researchers were unable to determine the number of SANEs that actually received the survey. Weighted means for each item are displayed in Table 2. After analysis of the weighted means, 5 items were removed from the SAFE-PE, due to achieving a weighted mean less than 0.5. All other items remained on the practice evaluation tool.

**Discussion**

After analysis of the items on the SAFE-PE, only five items received scores less than 0.5. Each of the items that received a weighted mean less than 0.5 were items that involved providing the sexual assault victim with a prescription for a sexually transmitted disease treatment or emergency contraception. This indicates that the respondents to the survey felt that best practice is to provide the prophylactic treatment at the time of the examination to ensure that the sexual assault victim receives treatment.

The provision of prophylactic treatment for Hepatitis B if the victim is not fully immunized received a score of 0.65. The Centers for Disease Control recommend vaccination of sexual assault victims if not fully immunized at the time of the examination (CDC, 2011). The low score for this component could be due to a victim’s inability to determine their immunization status or low availability of the vaccine.

A score of 0.51 was given to the component regarding HIV prophylaxis. The risk of contracting HIV after a sexual assault is less than 3.2% with penile-anal penetration and less than 0.15% with penile-vaginal penetration (Wieczorek, 2010). Given the low
risk of transmission and the high cost of prophylaxis, providers may see the value in initiating treatment, but may be unable to provide the full course of medications.

The provision of a shower prior to discharge received a score of 0.59. This may be due to the lack of appropriate facilities in many institutions. SANE exams are often conducted in emergency departments, where a private shower may not be available to victims of sexual assault.

The component regarding coordination of law enforcement and advocacy programs received a weighted mean of 0.65. Allowing the victim to minimize the number of times he or she is asked to tell their story is important for the comfort of the victim, but may not be a necessary part of providing a medical forensic examination that meets best practice standards.

The component involving use of a colposcope to document injuries received a score 0.6. This may be because of the increasing number of programs now using digital photography in place of colposcopy due to improved image quality (U.S Dept. of Justice, 2004). In a study by Ernst, Speck and Fitzpatrick (2011) it was found that digital photo documentation provided a high degree of image quality in female genital injuries after sexual assault.

**Limitations**

Limitations of this study include the inability of the researchers to determine a return rate for the online survey. The survey was sent to a number of SANE-SART programs, which include members of other disciplines. A number of respondents did not provide demographic information, which could indicate that they were not a SANE and therefore, may not have been knowledgeable of best practice standards. Variance in state
laws could also have influenced the respondents’ answers to the online survey, making it difficult to accurately determine if the responses to the survey were based on state laws vs. best practice standards.

**Implications for Emergency Nurses**

Emergency nurses may use data obtained from the SAFE-PE to allocate the appropriate resources, educate staff nurses and institute policy changes to improve the care provided to sexual assault victims. This may require collaboration with other disciplines, including physicians, advocacy centers and law enforcement. The need to seek funding through grants or outside sources for medical equipment, medications, and other various program costs may be necessary.

**Conclusions**

The SAFE-PE may be used by emergency nurses to identify gaps in current practices within their institutions. Recommendations for future research would include the evaluation of the SAFE-PE in the practice setting to determine ease of use and reliability. This would provide increased support for the use of the SAFE-PE to adequately evaluate an institution’s ability to provide a medical forensic examination that meets best practice standards.

**Acknowledgements**

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References


<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Years as SANE</th>
<th>Education</th>
<th>Licensure</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>&lt;30 = 20</td>
<td>0-5 = 99</td>
<td>Diploma=9</td>
<td>RN =205</td>
<td>SANE-A=98</td>
</tr>
<tr>
<td>Female</td>
<td>31-40 = 66</td>
<td>6-10 = 70</td>
<td>Associate’s=55</td>
<td>APRN-NP=30</td>
<td>SANE-P=0</td>
</tr>
<tr>
<td></td>
<td>41-50 = 58</td>
<td>11-20 = 36</td>
<td>BSN=121</td>
<td>APRN-CNS=9</td>
<td>Neither=121</td>
</tr>
<tr>
<td></td>
<td>51-64 = 83</td>
<td>21-30 = 1</td>
<td>Master’s=62</td>
<td>APRN-CNM=7</td>
<td>Both=35</td>
</tr>
<tr>
<td></td>
<td>65+ = 6</td>
<td>30+ = 1</td>
<td>Doctoral=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>Mean =44.8</td>
<td>Mean = 7.3</td>
<td>Multiple</td>
<td>Graduate=5</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Demographic data of the respondents to the online survey.
### Components of SAFE-PE

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Weighted Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Contact, Triage and Intake</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey victim for injuries</td>
<td></td>
<td><strong>0.991902834</strong></td>
</tr>
<tr>
<td>Provide treatment for emergent needs</td>
<td></td>
<td><strong>0.950404858</strong></td>
</tr>
<tr>
<td>Explain the purpose of evidence collection</td>
<td></td>
<td><strong>0.973684211</strong></td>
</tr>
<tr>
<td>Obtain consent for the medical forensic examination</td>
<td></td>
<td><strong>0.988866397</strong></td>
</tr>
<tr>
<td>Provide a private room with a door</td>
<td></td>
<td><strong>0.980769231</strong></td>
</tr>
<tr>
<td>Ensure that the victim is seen in a timely manner</td>
<td></td>
<td><strong>0.949392713</strong></td>
</tr>
<tr>
<td><strong>Documentation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keep medical records separate, by not including them in the evidence collection kit</td>
<td></td>
<td><strong>0.775720165</strong></td>
</tr>
<tr>
<td>Accurately document the extent of injuries, through the use of body maps, measuring of wounds and thorough written descriptions of all injuries</td>
<td></td>
<td><strong>0.990890688</strong></td>
</tr>
<tr>
<td><strong>Medical Forensic History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide a quiet and private room, with a door, for the interview</td>
<td></td>
<td><strong>0.976720648</strong></td>
</tr>
<tr>
<td>Offer an advocate from a sexual assault and/or domestic violence advocacy center</td>
<td></td>
<td><strong>0.943319838</strong></td>
</tr>
<tr>
<td>Coordinate interview with law enforcement and/or advocacy programs to minimize repetition</td>
<td></td>
<td><strong>0.651422764</strong></td>
</tr>
<tr>
<td>Provide interpretive services if necessary</td>
<td></td>
<td><strong>0.965587045</strong></td>
</tr>
<tr>
<td><strong>Photography</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of digital camera to document injuries</td>
<td></td>
<td><strong>0.896341463</strong></td>
</tr>
<tr>
<td>Use of colposcopy to document injuries</td>
<td></td>
<td><strong>0.6</strong></td>
</tr>
<tr>
<td>Train staff on forensic photography concepts</td>
<td></td>
<td><strong>0.882113821</strong></td>
</tr>
<tr>
<td><strong>Exam and Evidence Collection</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence collection performed as directed by evidence collection kit instructions</td>
<td></td>
<td><strong>0.885245902</strong></td>
</tr>
<tr>
<td>1:1 patient to staff ratio while conducting the examination</td>
<td></td>
<td><strong>0.963414634</strong></td>
</tr>
<tr>
<td>Examiner remains with evidence at all times until released to law enforcement</td>
<td></td>
<td><strong>0.92755102</strong></td>
</tr>
<tr>
<td>Maintain and document chain of custody by documenting name, title, date and time of all individuals having contact with evidence collected</td>
<td></td>
<td><strong>0.990853659</strong></td>
</tr>
<tr>
<td><strong>Drug Facilitated Sexual Assault</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obtain blood and/or urine samples for toxicology, if suspected</td>
<td></td>
<td><strong>0.940816327</strong></td>
</tr>
<tr>
<td>Document voluntary use of alcohol or controlled substances</td>
<td></td>
<td><strong>0.875</strong></td>
</tr>
<tr>
<td>Maintain and document chain of custody by documenting name, title, date and time of all individuals having contact with evidence collected</td>
<td></td>
<td><strong>0.988821138</strong></td>
</tr>
</tbody>
</table>
STI Evaluation and Care
- Provide prophylactic treatment for Hepatitis B, if not fully immunized
- Provide prophylactic treatment for Chlamydia at time of examination
- Provide prophylactic treatment for Gonorrhea at time of examination
- Provide prophylactic treatment for Trichomonas and Bacterial Vaginosis, if victim has had no alcohol intake in previous 24 hours at time of examination
- Provide prescription for medication to treat Chlamydia
- Provide prescription for medication to treat Gonorrhea
- Provide prescription for medication to treat Trichomonas and Bacterial Vaginosis
- Conduct HIV risk assessment and counsel patient on risk of transmission
- Provide initial HIV prophylaxis medications if indicated by risk assessment at time of examination
- Provide prescription for initial HIV prophylaxis medications if indicated by risk assessment
- Provide prescription for remaining course of HIV prophylaxis
- Provide referral for HIV treatment resources

Pregnancy Evaluation and Care
- Obtain pregnancy test
- Provide emergency contraception at time of examination
- Provide prescription for emergency contraception

Discharge and Follow Up
- Provide shower
- Provide change of clothes
- Provide oral and written discharge instructions
- Provide recommendations for follow up appointments
- Provide crisis center service information

Table 2: The components of the SAFE-PE and the corresponding weighted mean. An * indicates weighted means less than 0.5, which were eliminated from the SAFE-PE.