


ORIGINAL RESEARCH

Obstetrics and Gynecology

# Characteristics of acute sexual assault care in New England emergency departments

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## Abstract

**Objective:** Interventions such as written protocols and sexual assault nurse examiner programs improve outcomes for patients who have experienced acute sexual assault. How widely and in what ways such interventions have been implemented is largely unknown. We sought to characterize the current state of acute sexual assault care in New England.

**Methods:** We conducted a cross-sectional survey of individuals acute with knowledge of emergency department (ED) operations in relation to sexual assault care at New England adult EDs. Our primary outcomes included the availability and coverage of dedicated and non-dedicated sexual assault forensic examiners in EDs. Secondary outcomes included frequency of and reasons for patient transfer; treatment before transfer; availability of written sexual assault protocols; characteristics and scope of practice of dedicated and non-dedicated sexual assault forensic examiners (SAFEs), provision of care in SAFEs' absence; availability, coverage, and characteristics of victim advocacy and follow-up resources; and barriers to and facilitators of care.

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**Results:** We approached all 186 distinct adult EDs in New England to recruit participants; 92 (49.5%) individuals participated, most commonly physician medical directors (n = 34, 44.1%). Two thirds of participants reported they at times have access to a dedicated (n = 52, 65%, 95% confidence interval [CI], 54.5%–75.5%) or non-dedicated (n = 50, 64.1%; 95% CI, 53.5%–74.7%) SAFE, but fewer reported always having this access (n = 9, 17.3%; 95% CI, 7%–27.6%; n = 13, 26%; 95% CI, 13.8%–38.2%). We describe in detail findings related to our secondary outcomes.

**Conclusions:** Although SAFEs are recognized as a strategy to provide high-quality acute sexual assault care, their availability and coverage is limited.

## 1 | INTRODUCTION

### 1.1 | Background

Sexual assault represents a major public health problem in the United States. Victims of rape most commonly seek medical care in an emergency department (ED),<sup>1</sup> and the number of ED visits for sexual assault has increased over the past 2 decades.<sup>2</sup> Victims' reporting to police as well as concerns about injury, sexually transmitted infections (STIs), and pregnancy are associated with receipt of post-rape medical care, highlighting the relevance of the emergency clinician's skills in caring for patients who have experienced acute sexual assault.<sup>3</sup> Factors such as police receipt of the sexual assault evidence collection kit as well as documentation of traumatic injuries and assailant weapon use are associated with charge filing and conviction, underscoring the role emergency clinician has in influencing medical and legal outcomes.<sup>4,5</sup>

### 1.2 | Importance

Care for patients who have experienced acute sexual assault has historically been incomplete.<sup>6–8</sup> Operational strategies such as the use of written protocols, sexual assault nurse examiners, and sexual assault response teams have been shown to improve a variety of outcomes in relation to this care, including time to evaluation; completion, thoroughness, and accuracy of forensic evidence collection; documentation of anogenital injury; STI and pregnancy testing and prophylaxes; mental health referrals; and reporting to police, filing of charges, conviction rates, and sentence length.<sup>8–13</sup> However, it is largely unknown how widely and in what ways these interventions have been implemented.<sup>14</sup>

### 1.3 | Goals of this investigation

Elucidating the current state of acute sexual assault care in the United States is important for identifying deficiencies in this care and ways to address them. We conducted a cross-sectional, descriptive survey study to characterize the operational landscape of acute sexual

assault care in New England (a region in the Northeast United States including Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont). This study aimed to quantify the degree to which interventions that improve acute sexual assault care have been implemented in EDs, describe how this care is provided when these interventions are and are not used, explore perceived challenges to the provision of high-quality acute sexual assault care, and discover novel solutions to these challenges. We hypothesized that there would be variability in the degree to which the above interventions have been instated. Our primary objectives were to understand the availability and coverage in EDs of dedicated and non-dedicated (ie, ad hoc) sexual assault forensic examiners (including but not limited to sexual assault nurse examiners) specifically trained in acute sexual assault care.

## 2 | METHODS

### 2.1 | Study design and setting

We conducted a cross-sectional survey of individuals with knowledge of ED operations in relation to acute sexual assault care at New England adult EDs. This study was approved by our hospital's institutional review board.

### 2.2 | Selection of participants

Contact information for all New England adult EDs was extracted from the National Emergency Department Inventories (NEDI) database; NEDI compiles data on all EDs in specific states through ongoing surveys.<sup>15</sup> Individuals with knowledge of institution-specific ED operations and acute sexual assault care at each New England ED were contacted by phone, email, or mail. These individuals were included in our study if they reported being familiar with how acute sexual assault care is provided in their ED and were excluded if they did not. Additionally, we asked these individuals if they could identify anyone else better suited for participation and followed up accordingly. Participants were offered a \$20 Amazon gift certificate.

### The Bottom Line

Interventions like written protocols and sexual assault nurse examiner programs improve outcomes for patients who have experienced acute sexual assault. This cross-sectional survey of New England adult emergency departments found that availability and coverage of sexual assault forensic examiners, a recognized strategy to provide high-quality acute sexual assault care, are not universal.

## 2.3 | Survey design

The survey's 18 items were developed by study investigators based on existing evidence regarding best practices in acute sexual assault care and prior studies characterizing this care (Supporting information 1). The survey incorporated closed- and open-ended questions. It inquired about the frequency of and reasons for patient transfer; treatment before transfer; availability and authorship of written sexual assault protocols; availability, coverage, characteristics, and scope of practice of dedicated and non-dedicated sexual assault forensic examiners, provision of care in their absence; availability, coverage, and characteristics of victim advocacy and follow-up resources; and barriers to and facilitators of high-quality acute sexual assault care. Demographic information about the participant and ED was obtained. Cognitive interviews evaluating the survey were conducted with 5 participants; an iterative process was used to modify the survey accordingly. Pilot surveys were conducted with 5 participants.

## 2.4 | Measurements

Participants were recruited by trained research associates (RAs) on weekdays from 8 a.m. to 5 p.m. from October 2021 to March 2022. RAs called each New England ED and asked to speak with potential participants. If a potential participant was available, the RA described our study and asked the potential participant if they were willing to participate. If they were, the RA administered the survey by phone after obtaining verbal consent. If a potential participant indicated they were not willing to participate in real time, the RA asked whether they were willing to be contacted by phone at another time or by email with a link to complete the survey online and followed up accordingly. If a potential participant was identified but not available, the RA attempted to email them, leave them a voicemail, and/or mail them a postcard with information on the study. If no potential participant was identified, the RA mailed the hospital a postcard with information on the study addressed to the ED medical director and/or nursing director. Each potential participant was contacted up to twice by phone, twice by email, and twice by mail by at least 2 different RAs when multiple attempts to recruit participants were necessary. The RA manually entered survey responses collected during phone interviews into a

REDCap database, while responses to surveys completed by participants online were entered directly into the same database. Survey responses were anonymous, and contact information shared for the purposes of remuneration was kept confidential.

## 2.5 | Outcomes

Our primary outcomes included ED availability and coverage of dedicated and non-dedicated sexual assault forensic examiners. Secondary outcomes included frequency of and reasons for patient transfer; treatment before transfer; availability of written sexual assault protocols; characteristics and scope of practice of dedicated and non-dedicated sexual assault forensic examiners, provision of care in their absence; availability, coverage, and characteristics of victim advocacy and follow-up resources; and barriers to and facilitators of care.

## 2.6 | Analyses

Quantitative analyses of survey responses included the calculation of descriptive statistics for continuous data and frequency distributions and percentages for categorical data. 95% confidence intervals (CI) were calculated for relevant responses. For the primary outcomes, characteristics of participating EDs were compared via univariable and multivariable logistic regression analysis. Factors that were significant ( $P < 0.05$ ) in univariable analysis were included in the multivariable model. Quantitative analyses were conducted using SAS. Responses to open-ended questions were organized by content.

## 3 | RESULTS

We attempted to contact individuals at all 186 adult EDs in New England; 92 (49.5%) individuals participated. Participants were most commonly medical directors ( $n = 34$ , 44.2%) (Table 1). The distribution of annual volumes at participants' EDs was comparable to that of all EDs in the region according to NEDI (35.2% <20,000; 39.9% 20–50,000; 24.9% >50,000).<sup>15</sup>

Many (52, 65%; 95% CI, 54.5%–75.5%) participants reported they at times have access to a dedicated sexual assault forensic examiner. Among those who reported ever having access to such a clinician, only a small proportion reported always having this access ( $n = 9$ , 17.3%; 95% CI, 7%–27.6%); the availability of this clinician varied significantly by region, academic affiliation, and practice setting but not ED volume or trauma designation in multivariable logistical regression (Table 2).

Most ( $n = 79$ , 94%; 95% CI, 89%–99.1%) participants reported the existence of a written protocol for acute sexual assault care in their ED. Thirty-one (36.9%; 95% CI, 26.5%–47.2%) participants reported that their ED at times transfers patients for the sole purpose of receiving acute sexual assault care, but this is done infrequently: 24 (77.4%) participants said it was done 25% of the time or less. When patients are transferred, participants noted it is most commonly because there is no

**TABLE 1** Demographics of study participants and emergency departments.

Demographics	No.	%
<b>Participant role</b>		
Physician medical director	34	44.1
Clinical nurse manager	22	28.6
Nurse educator	7	9.1
Nursing director	7	9.1
Nurse	5	6.5
Sexual assault nurse examiner program leader	3	3.9
Other (undefined)	2	2.6
<b>State</b>		
Maine	10	13.3
New Hampshire	10	13.3
Vermont	8	10.7
Massachusetts	33	44.0
Rhode Island	4	5.3
Connecticut	8	10.7
<b>Hospital type</b>		
Major teaching	13	17.1
Minor teaching (community)	30	39.5
Non-teaching	32	42.1
<b>Geographic status</b>		
Urban	25	32.1
Suburban	20	25.6
Rural	32	41.0
<b>Trauma designation</b>		
Level 1 trauma center	11	14.1
Level 2 trauma center	7	9
Level 3 trauma center	6	7.7
No trauma designation	52	66.7
<b>ED annual volume</b>		
<20,000	21	27.6
20–50,000	33	43.4
>50,000	19	25.0

dedicated, trained clinician available (15, 48.4%) or because of young patient age (15, 48.4%). Eighteen (54.5%; 95% CI, 37.6%–71.5%) participants indicated that patients are routinely offered components of acute sexual assault care such as HIV prophylaxis (PEP) before transfer.

Those who reported ever having access to a dedicated sexual assault forensic examiner noted that this clinician is usually a nurse (n = 49, 94.2%; 95% CI, 87.9%–100%). Virtually all these sexual assault forensic examiners (n = 50, 96.2%) received training through a sexual assault nurse examiner or other sexual assault forensic examiner program, most commonly state-based (n = 29, 63%). Participants reported that these sexual assault forensic examiners are often readily available (n = 31, 59.6%; 95% CI, 46.3%–73%), whether in the ED (n = 22, 42.3%),

**TABLE 2** Odds ratio for having dedicated sexual assault forensic examiner.

OR for Dedicated SAFE	OR	95% CI
<b>Comparison</b>		
Northern New England (reference)	1	
Southern	0.26	0.08–0.81
<b>Academic medical center (reference)</b>		
Non-academic (minor and non-teaching)	0.12	0.02–0.98
<b>Non-suburban (urban and rural) (reference)</b>		
Suburban	0.18	0.06–0.54
<b>Trauma center (Reference)</b>		
Non-trauma center	0.35	0.11–1.07
<b>ED volume &gt;50,000 (Reference)</b>		
ED volume <50,000	0.53	0.17–1.67

Abbreviations: CI, confidence interval; OR, odds ratio; SAFE, sexual assault forensic examiner.

elsewhere in-house (n = 7, 13.5%), or via telehealth (n = 2, 3.8%), but a substantial portion of these clinicians are physically located at home (n = 28, 53.8%).

These sexual assault forensic examiners most commonly provide forensic evidence collection (n = 50, 98%; 95% CI, 94.2%–100%) (Table 3). Several participants clarified that the sexual assault forensic examiner works in conjunction with the primary emergency clinician to order the appropriate clinical and forensic testing and prophylaxes, while others indicated that they serve as a general resource to clinicians.

Most participants (n = 31, 59.6%) indicated that sexual assault forensic examiner services are funded by their institutions.

When no dedicated sexual assault forensic examiner is available, most participants (n = 50, 64.1%; 95% CI, 53.5%–74.7%) reported that they at times have access to a non-dedicated sexual assault forensic examiner—such as a nurse trained as a sexual assault nurse examiner working clinically in the ED—available to help provide acute sexual assault care. Among those who reported ever having access to a non-dedicated sexual assault forensic examiner, only a small proportion reported always having this access (n = 13, 26%; 95% CI, 13.8%–38.2%). This clinician was usually a nurse (n = 45, 90%; 95% CI, 81.7%–98.3%). Most of these clinicians received training through a sexual assault nurse examiner program (n = 31, 62%), whereas some (n = 17, 34%) reported receiving other training, such as through their institution or residency. This clinician is usually based in the ED (n = 46, 92%), though a few are at home (n = 2, 4%) or via telehealth (n = 2, 4%).

As with dedicated sexual assault forensic examiners, non-dedicated sexual assault forensic examiners most commonly perform forensic evidence collection (n = 46, 92%) (Table 3).

When no sexual assault forensic examiner is available, the various components of acute sexual assault care are provided by different individuals. Attending physicians most commonly provide most components of care, but nurses most commonly provide forensic evidence

**TABLE 3** Frequency with which various sexual assault care components are provided by dSAFEs ( $n = 51$ ) and ndSAFEs ( $n = 50$ ) at hospitals that have these services.

Services	dSAFE (n)	dSAFE (%)	95% CI	ndSAFE (n)	ndSAFE (%)	95% CI
Forensic evidence collection	50	98.0	94.2%–100%	30	60	46.4%–73.6%
Genital exam for forensic purposes	46	90.2	82.0%–98.4%	30	60	46.4%–73.6%
Follow-up resource provision	46	90.2	82.0%–98.4%	41	82	71.4%–92.6%
Genital exam for clinical purposes	24	47.1	33.4%–60.8%	18	36	22.7%–49.3%
Testing and prophylaxes for STIs						
HIV	16	31.4	18.6%–44.1%	23	46	32.2%–59.8%
Non-HIV	19	37.3	24.0%–50.5%	23	46	32.2%–59.8%
Testing and prophylaxis for pregnancy	18	35.3	22.2%–48.4%	22	44	30.2%–57.8%
Clinical toxicology testing	14	27.5	15.2%–39.7%	18	36	22.7%–49.3%
Forensic toxicology testing	19	37.3	24.0%–50.5%	19	38	24.5%–51.5%

Abbreviations: CI, confidence interval; dSAFE, dedicated sexual assault forensic examiner; HIV, human immunodeficiency virus; ndSAFE, non-dedicated sexual assault forensic examiner; STIs, sexually transmitted infections.

collection ( $n = 44$ , 59.5%; 95% CI, 47.5%–69.8%) and follow-up resources ( $n = 49$ , 65.3%; 95% CI, 54.6%–76.1%).

Most participants ( $n = 71$ , 91%; 95% CI, 84.7%–97.4%) reported that victim advocacy resources are available in their community. Many participants reported that these resources or a hospital social worker are at times available in person ( $n = 55$ , 78.6%), with 23.6% ( $n = 13$ ) of participants reporting that such in-person support is always available.

For follow-up medical care, patients are most commonly referred to their own primary care provider (PCP) ( $n = 59$ , 75.6%; 95% CI, 66.1%–85.2%), followed by an obstetrician/gynecologist ( $n = 31$ , 39.7%; 95% CI, 28.9%–50.6%), a sexual assault clinic ( $n = 24$ , 30.8%; 95% CI, 20.5%–41%), an infectious disease specialist ( $n = 24$ , 30.8%; 95% CI, 20.5%–41%), and a family planning clinic ( $n = 3$ , 3.8%; 95% CI, 0%–8.1%). One participant noted that referral is determined by patient gender.

When asked about barriers to providing high-quality acute sexual assault care, participants reported the lack of a dedicated sexual assault forensic examiner ( $n = 46$ , 63%), the time-intensive nature of such care ( $n = 36$ , 49.3%), lack of emergency clinician training ( $n = 34$ , 46.6%), lack of emergency clinician experience ( $n = 29$ , 39.7%), long time to arrival of the dedicated sexual assault forensic examiner ( $n = 24$ , 32.9%), funding limitations ( $n = 22$ , 30.1%), and lack of emergency clinician familiarity with existing protocols ( $n = 20$ , 27.4%). In free-text responses, participants described additional barriers, including the difficulty of maintaining competence, staffing shortages, difficulty getting certified, burnout, and turnover among sexual assault forensic examiners; structural issues such as lack of supplies, poor ED design, and geographic isolation; and difficulty teaching on this topic.

In response to an open-ended question about solutions to overcome these barriers, participants expressed interest in forming local, regional, and statewide systems to facilitate a pool of on-call sexual assault forensic examiners, pointing out the funding, volume, availability, and coverage of sexual assault forensic examiners needed to create

such arrangements. Participants also suggested having dedicated sexual assault forensic examiners in the ED, liberalizing requirements for sexual assault nurse examiner certification, providing additional education for all ED nurses, and supporting those who wish to undergo sexual assault forensic examiner training. Participants also proposed mandating that hospitals have sexual assault forensic examiners available and standardizing care for this patient population. Finally, participants discussed creating a site separate from the ED for forensic evidence collection.

#### 4 | LIMITATIONS

Data for our study were obtained from individuals' self-report. Nearly all participants were clinicians we would expect to be knowledgeable about acute sexual assault care at their institutions. However, it is possible their report does not reflect what is done in their EDs. Because we maintained participants' anonymity, it is possible that multiple individuals from a single institution participated in our survey. It is also possible that individuals who did not know how acute sexual assault care was provided in their ED—and were therefore excluded from participation in our study—had more inconsistent availability of this care. Our results may thus overestimate the availability and coverage of sexual assault forensic examiners as well as other elements of high-quality care. Additionally, not all New England EDs participated in our study; consequently, the generalizability of our results may be limited to certain areas within New England. Similarly, as we focused on New England, our results may not be applicable to other regions of the United States; because New England is relatively well-resourced, our results may overestimate the availability and coverage of sexual assault forensic examiners in other regions of the United States. Finally, although our survey included open-ended questions, a more robust qualitative approach may have been better for understanding some complexities of acute sexual assault care.

## 5 | DISCUSSION

Over 80% of participants in our study reported that at their institution, sexual assault forensic examiners are not always available for patients who have experienced acute sexual assault, which suggests there are barriers to the implementation of this evidence-based intervention. Although other studies have evaluated the frequency with which key components of acute sexual assault care are provided in EDs, our study is unique in that it evaluated who is providing this care and how. Thiede and Miyamoto<sup>16</sup> explored trends in sexual assault nurse examiner availability in rural Pennsylvania through International Association of Forensic Nurses (IAFN)-reported data and qualitative interviews, reporting the geographic distribution of IAFN-certified sexual assault nurse examiners, sexual assault nurse examiner presence, and sexual assault nurse examiner coverage and described whether these sexual assault nurse examiners were IAFN-certified, where they were based, and who provided acute sexual assault care in their absence. Our study builds on theirs by investigating trends in acute sexual assault care across a broader geographic region, describing in further detail how this care is administered, and uncovering relationships between ED characteristics and sexual assault forensic examiner availability.

Like Thiede and Miyamoto,<sup>16</sup> we discovered variation in the availability and coverage of dedicated sexual assault forensic examiners, with multiple EDs reporting transferring patients for the sole purpose of receiving acute sexual assault care because of the lack of dedicated sexual assault forensic examiner availability. We also found that only approximately half of patients are offered components of acute sexual assault care before transfer, some of which is time-sensitive (eg, HIV PEP). This finding suggests that even if transfer remains a part of the care trajectory for this patient population, there is room for its improvement at sending institutions. Unlike Thiede and Miyamoto,<sup>16</sup> we found that EDs in Northern New England, affiliated with major teaching hospitals, and in non-suburban areas are more likely to have dedicated sexual assault forensic examiner availability. It is possible that in Northern New England—which is more rural than Southern New England—and rural areas, it may be less feasible for an ED to transfer patients or rely on ad hoc mechanisms to obtain sexual assault forensic examiner services due to geography, and policies may have responded to these challenges by establishing local sexual assault forensic examiner resources. Conversely, EDs at teaching hospitals and in urban areas may have the advantage of proximity to existing dedicated and ad hoc sexual assault forensic examiner availability. In contrast to Thiede and Miyamoto,<sup>16</sup> we found that sexual assault forensic examiners are most commonly based at home rather than in-house; this may have implications for the timeliness of acute sexual assault care and system wide efficiency. Furthermore, these findings—especially in the case of non-dedicated sexual assault forensic examiners who choose to come in to provide acute sexual assault care on their day off—highlight the unsustainable reliance in some EDs on the goodwill of staff to provide this care. Like Thiede and Miyamoto,<sup>16</sup> we found that some EDs offer teleSANE (tele-sexual assault nurse examiner) services; this seems to be a promising option, particularly for

EDs in remote areas. We also found that although sexual assault forensic examiners are most commonly trained through state-based programs, a considerable proportion—particularly when ad hoc—are trained through other means. This reflects Thiede and Miyamoto's findings,<sup>16</sup> and although it seems appropriate for training to vary by state given that state laws differ, it also underscores that there may be variation in the quality of training, particularly given the lack of certification by a single organization for many of these clinicians.

Other novel findings from our study include the characterization of which clinicians provide the various components of acute sexual assault care. Sexual assault forensic examiners' expertise seems to be appropriately used by emergency clinicians, because these sexual assault forensic examiners most commonly assist in care by conducting forensic evidence collection as well as providing follow-up resources. However, multiple participants noted that the sexual assault forensic examiner typically works in conjunction with the emergency clinician to perform other components of acute sexual assault care but that the emergency clinician is still ultimately responsible for components of care such as STI and pregnancy testing and prophylaxes. This, in conjunction with a prior demonstration of emergency clinicians' self-perceived lack of competence in acute sexual assault care,<sup>17</sup> highlights the continued need for ongoing emergency clinician education on this topic. We also found that in the absence of a sexual assault forensic examiner, nurses most commonly provide forensic evidence collection; this suggests that training nurses in acute sexual assault care is important, but nursing school curricula may fall short in addressing this educational need.<sup>18</sup> We also found that in most cases, dedicated sexual assault forensic examiner services are funded by health care institutions. Given the current gaps in sexual assault forensic examiner coverage and other burdens these institutions face, increased governmental funding may be key in improving care for this population. As with sexual assault forensic examiners, we found variation in victim advocacy availability and coverage, particularly in person. Finally, we found that patients are commonly referred to their PCPs for acute sexual assault care medical follow-up. This may be problematic if PCPs are inadequately trained to meet the unique needs of these patients. Also, especially as patients may not have PCPs, our findings dovetail with previous literature suggesting ED clinicians find unclear or inconsistent outpatient follow-up to be a barrier to providing high-quality care for this patient population.<sup>19</sup>

Our study is also novel in its exploration of barriers to the provision of high-quality acute sexual assault care and solutions to overcome these barriers from the perspective of those familiar with and involved in ED operations. Participants noted the inherently time-intensive nature of acute sexual assault care as one barrier; given the numerous competing clinical demands emergency clinicians face, this is not surprising but warrants creative solutions. Participants also noted the lack of a dedicated sexual assault forensic examiner, suggesting that their presence is fittingly viewed as a means of providing high-quality acute sexual assault care. Participants identified a lack of emergency clinician training, experience, and familiarity with existing protocols as well as difficulty maintaining competence in this area as other barriers, again

underscoring the utility of continued education aimed at emergency clinicians. Participants noted a delay in arrival of the sexual assault forensic examiner as well as geographic isolation as yet other barriers, again suggesting the potential of telehealth to overcome these particular hurdles. Finally, participants' citing funding as a barrier hints that further resources must be mobilized to provide high-quality care for this population. Participants proposed solutions focused on expanding the volume, availability, and coverage of sexual assault forensic examiners through relaxing certification requirements; offering free, accessible education; creating large on-call systems; and stationing (and even mandating) the presence of sexual assault forensic examiners in EDs as well as standardizing acute sexual assault care. Unfortunately, as participants pointed out, many of these solutions require increased funding, and mandating care without supporting it financially has not been successful.<sup>20</sup> Again, the telehealth provision of sexual assault forensic examiner resources represents one avenue to address barriers as well as incorporate solutions that emerged in our study while potentially minimizing costs.<sup>21,22</sup>

In summary, sexual assault remains a serious public health issue relevant to emergency medicine. Our study affirms limited previous findings suggesting that although ways to improve acute sexual assault care have been identified, substantial gaps still exist in the provision of this care. Going forward, it is important for clinicians, health systems, states, and our country to prioritize care for this vulnerable population and develop innovative solutions to deliver this care readily and consistently.

#### AUTHOR CONTRIBUTIONS

Rebecca J. Barron, Elizabeth M. Schoenfeld, Erica J. Hardy, Janette Baird, and Alyson J. McGregor contributed to the conception and design of the study. Rebecca J. Barron, Nina G. Faynshtayn, Erica Jessen, and Alan A. Siero acquired the data. Tovy Haber Kamine analyzed the data. Rebecca J. Barron drafted the initial manuscript. All authors were involved in data interpretation, revised the manuscript, and approved the final version submitted for publication. Rebecca J. Barron takes responsibility for the article as a whole.

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#### CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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