



Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84 or 96 Hours Following a Sexual Assault?

Sgt. Joanne Archambault (Retired, San Diego Police Department)

Reprinted with permission from Sexual Assault Report, Volume 10, Number 3, January/February 2007, published by Civic Research Institute. All rights reserved.

In the last year or so, I have received more and more requests for information to clarify what the timeline should be for conducting a forensic examination following a victim's report of a sexual assault. These requests have come from around the country, from forensic examiners and other medical professionals, as well as law enforcement officers, prosecutors, and even victim advocacy organizations. And while I have tried to provide concrete guidance regarding the time limits for the forensic examination, I have to admit that I find questions such as these fascinating – because they are so often steeped in traditions of doing things just because “we’ve always done it that way.”

To illustrate, most communities across the country use a 72-hour rule so that forensic examinations are authorized, ordered, and conducted within a 72-hour period following the sexual assault. However, I have traveled to communities where law enforcement and forensic examiners use 96 hours as their cutoff. Oregon uses a very unique 84 hours. Unfortunately, some jurisdictions still use a very narrow 24-hour cutoff, with forensic examinations only being conducted within a single day of the sexual assault. Frankly, I think such an extreme cutoff of 24 hours is tragic for sexual assault victims who rarely report the crime within this timeline.

Yet the saddest part is that many times these rules are applied rigidly, so that a victim reporting a sexual assault even 1 hour outside the timeline is refused a forensic examination. I have personally seen forensic examiners refuse to do an exam at 73 hours after a sexual assault. I’ve also seen plenty of situations where law enforcement officers refuse to authorize an exam because it doesn’t meet the exact criteria established in their jurisdiction, even though I thought there was a reasonable probability that they would still be able to collect and document forensic evidence based on the facts of the case. The purpose of this article is to challenge such rigid guidelines and to encourage forensic examiners and law enforcement professionals to make the determination regarding whether or not to conduct a forensic examination on a case-by-case basis, by evaluating the likelihood that probative evidence would be recovered.

When we ask audiences of community professionals whether injuries can be observed on the body of a sexual assault victim beyond 72-96 hours, they typically answer: “of course.” So it is not clear why we don’t recognize that a forensic exam might be warranted well beyond this point if the victim is complaining of pain, bleeding, burning or soreness. If any of these indications are present, a forensic exam should probably be conducted with the victim, regardless of how long it has been since the sexual assault.

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

To me, the bottom line is that whatever cutoff is adopted in a community for the time limits for a forensic examination -- whether it is 72 hours, 96 hours, or even 24 hours -- we must all recognize that these cutoffs should be used only as guidelines and not rigid policies. Depending on the situation, it will often make sense to conduct a forensic examination outside that window of time. In fact, this determination can really only be made on the basis of carefully considering the facts of the case and the potential for recovering probative evidence from the forensic examination. But now I'm getting ahead of myself. First let's look a bit more carefully at the history of the "72-hour rule" and see where it came from and whether it is supported by the scientific evidence.

The History of the "72-Hour Rule"

When we step back, it seems clear that the question of time limits for conducting a forensic examination should be based on the scientific evidence regarding how long evidence is likely to last on the body of the victim of a sexual assault. Thus, when I ask professionals in the sexual assault field, I am typically told that the 72-hour cutoff is used because biological and perhaps even trace evidence are only likely to be successfully recovered from the victim's body within a window of time ranging from 24-96 hours. Yet many of these professionals are surprised to learn that the timeline of 72 hours really has little to do with standards established by the forensic science community.

In fact, the 72 hour cutoff was established by the medical community because it is generally considered the window of opportunity for successfully treating victims of sexual violence for sexually transmitted infections (STI's) and any pregnancy that might have resulted from the sexual assault (citation 1). It has very little to do with the likelihood of recovering forensic evidence. This comes as a surprise to many professionals in the field of sexual assault. Yet it shouldn't.

The reality is the forensic examination has always focused more on the medical care of the sexual assault survivor than the forensic evidence that might be used to prosecute and convict sex offenders. I think we can all agree that this focus is not totally misplaced. Appropriate victim centered care is of course critical to our field and must be a primary focus of the forensic examination. Yet the good news is that this is not an either-or proposition. The truth is that any survivor of sexual assault who is willing to go through a forensic examination might at least consider also participating in the criminal justice system in the hopes of holding the offender accountable for the crime. Therefore, while victim-centered medical care must be a primary purpose of the forensic examination, it does not have to be provided at the expense of documenting and collecting valuable forensic evidence. Both objectives can be accomplished at the same time, providing quality medical care for survivors of sexual assault while still collecting and documenting forensic evidence to support a successful prosecution.

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

But this leaves the question of the timeline unanswered. If the “72 hour rule” is based on the issues of medical care and not forensic evidence, what guidelines should we use for the collection of evidence in a forensic exam?

What Does the Scientific Literature Have to Say?

It seems clear that if we had a realistic picture of how long certain types of evidence remained on the body of the victim following a sexual assault, it would be easy to develop guidelines for the time limits on a forensic examination. Yet when we look to the scientific evidence, no such consensus is seen. In fact, there is relatively little data in the scientific literature regarding the various sites of evidence collection and the timelines for recovering biological materials from living or deceased victims. Worse, the studies that have been conducted are outdated and utilize very different methods which make it difficult to generalize the conclusions.

Despite these limitations, there are a few things that the scientific literature can tell us. First and foremost, the scientific literature clearly raises the tantalizing possibility that forensic evidence may be available on the body of the victim long after 72 hours following the sexual assault. This isn't a recent discovery. In fact, much of this scientific literature dates back to the 1960's and 1970's -- long before law enforcement even had DNA technology available. So while this outdated literature suggests that evidence might be available long after 72 hours, it is especially frustrating to realize that the time window may actually be much wider than that, because technology and methodology have improved since then. Just to give you a few examples, consider the following:

First, a study was conducted by Silverman and Silverman in 1975 with a total of 675 women (citation 2). Analysis revealed that “spermatozoa were found irregularly after the seventh and rarely after the tenth postcoital day.” In that article, the authors also summarized other research documenting the presence of motile spermatazoa in the vagina for a period of time ranging from 3 hours (citation 3) to 24 hours (citation 4) following intercourse, and in the cervix from 110 hours (citation 5) to 7 days (citation 6) afterward. The authors even cited research reporting nonmotile spermatozoa in the cervix for 12 days (citation 7) and in the vagina for lengths of time varying from 14 hours to 17 days (citation 7-12). Finally, the authors cite anecdotal reports of spermatozoa persisting “in the vaginas of rape-murder victims for 70 days (citation 5) and three to four months” (citation 13). Taken together, this research strongly suggests that the “72-hour rule” may dramatically underestimate how long evidence of spermatazoa could potentially be recovered from the body of a sexual assault victim.

In another study, the researcher analyzed smears collected during the course of 178 routine genital examinations of women visiting a clinic for venereal diseases (citation 14). These smears were analyzed for spermatozoa, with the amount of time since last intercourse varying from 2 hours to 21 days. Results indicated that: “Sperms were found in the cervix up to 12 days after coitus and in the vagina up to 9 days after.” Again, this

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

research raises serious questions regarding the 72-hour rule as a guideline for collecting forensic evidence from sexual assault victims.

However, a third – and more recent – 1992 study contradicted these others by concluding that an examination is only warranted if the sexual assault victim reports within 36 hours (citation 15). Clearly, the scientific evidence is not conclusive, but it does strongly suggest that forensic evidence may be recovered from the victim's body in at least some cases far longer than 72 hours following a sexual assault.

Sites of Recovery

While there is very little research available to determine the timeframe for recovering evidence from the body of a sexual assault victim, there is even less information regarding the best sites for recovery. At this point, only anecdotal case reports are available, but they suggest that the cervical os may be the best site for recovery of forensic evidence from a sexual assault victim. Yet again there is an almost total mismatch between the evidence from the scientific literature (limited as it may be) and the current practice of most professionals in the field, because most standardized forensic kits recommend vaginal pool collection only (citation 16). So while we wait for research to definitively establish the length of time that forensic evidence is available in various sites on the body, the current information may also suggest that best practice might include evidence collection from the cervical os in addition to the vaginal pool.

The Lack of Feedback on Real Forensic Examinations

But let's forget about the scientific literature for a moment. Now let's turn to the question of what evidence has been recovered from real forensic examinations conducted with sexual assault victims. What can we learn from these completed forensic examinations regarding the evidence that can be recovered from the body of a sexual assault victim? Amazingly, the answer is again very little.

As we all know, based on recent media coverage and legislative activity, most sexual assault evidence kits have not been analyzed in the United States in a timely manner (citation 17). We've all heard about – and possibly even taken some heat for – the current backlog of these sexual assault evidence kits that have not been processed. Personally, I think this is also due at least in part to the lack of focus on the forensic component of the sexual assault examination, as I mentioned before. Because we have primarily thought of the examination in medical rather than forensic terms, our attention has focused more on the issues of medical care than evidence collection and laboratory analysis.

Yet regardless of the reasons for it, we all know that the backlog of sexual assault evidence kits is a real thing. The sad reality is that law enforcement professionals have rarely had the access to laboratory resources that they need to efficiently analyze forensic examination kits from sexual assault victims (and suspects), as well as other

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

crime scene evidence that might be stored in police property rooms. Tragically, many of these kits still sit in police property rooms or crime laboratories, simply gathering dust or freezer burn while they wait to be analyzed. So generally law enforcement professionals and prosecutors do not get the feedback they need regarding the types of evidence that are analyzed, the findings of these analyses, and what they have to say regarding how long evidence is actually available from various collection sites.

Similarly, Sexual Assault Forensic Examiners only rarely received feedback about the swabs they collected when a substance fluoresced, or the laboratory results of the many other swabs and samples collected from sexual assault victims and suspects. Except for those very few cases that go to trial, such information is not typically provided to the forensic examiners who must then continue to follow standardized protocol and conduct sexual assault examinations “the way they’ve always been done” without knowing whether or not this is providing the best evidence that could be used to hold sex offenders accountable through successful prosecution.

As a result, law enforcement officers, prosecutors, forensic examiners, advocates and survivors are starving for feedback and information from forensic scientists about the kits that have been collected, for a period of more than two decades in some jurisdictions. With advancing DNA technology, it is clearly time to conduct the analyses to determine the timeframe within which forensic evidence can be found on the body of sexual assault victims and suspects. It is time to answer such questions as:

- How long after a vaginal rape can spermatozoa be recovered from the vagina and cervix of the victim? What are the best sites of recovery?
- How long after a sexual assault involving oral penetration can evidence be recovered from the victim’s mouth and/or nasal cavity, and what are the best methods for evidence collection?
- How many hours after forced anal intercourse might a swab taken from the victim’s rectum provide a suspect’s DNA profile?
- How many hours following digital penetration might the victim’s epithelial cells be found under the assailant’s fingernails (even after bathing)?
- How many hours after a victim has been forced to orally copulate a suspect should a suspect examination be conducted to swab the suspect’s penis and examine other parts of his body for any injury that might have resulted from a struggle with the victim?

These are the type of questions that can potentially be answered with our current technology and the sexual assault evidence kits that are available. Yet until now, the necessary resources have not been dedicated to answering them. So we don’t know. Clearly, research is needed to establish which types of evidence can be recovered from which sites on the body for what period of time following a sexual assault.

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

So What Rule Should We Use for Now?

Of course, none of us have the luxury of waiting until the research offers definitive conclusions to answer this question. As professionals in the field of sexual assault response, we need to use the information that is currently available to develop the most responsible policies we can. So let's look at what we know so far. As many of you know, the most up-to-date guidance in this area is included in the National Protocol for Sexual Assault Medical Forensic Examinations (Adults/Adolescents), which was released in September of 2004 by the Office on Violence Against Women. This protocol was developed on the basis of the scientific research and case studies cited here, as well as the other information that is available. With respect to the question of time limits for the forensic examination, this protocol provides the following guidance:

“Recognize that evidence may be available beyond 72 hours after the assault. In recent history, 72 hours after the sexual assault has been considered a guideline to use as an outside limit for obtaining evidence for the sexual assault evidence collection kit. But research and evidence analysis indicate that some evidence may be available beyond this time period. For example, spermatozoa might be found inside the cervix for up to two weeks after the assault. Urine may reveal traces of certain drugs up to 96 hours after ingestion” (citation 18; see also citation 1 for a similar recommendation by the American College of Emergency Physicians).

Clearly, this protocol challenges the rigid application of “the 72-hour rule,” or any other arbitrary timeline for that matter. Rather, the new national protocol recognizes that some evidence may be recovered after that time period, so the decision to conduct a forensic examination must be made on the basis of the specific characteristics of each case and the likelihood of recovering probative evidence. When this is combined with the lessons learned from the limited scientific literature and anecdotal case studies, it is clear that rigid application of the 72-hour rule does not currently reflect best practice in the field.

So, what exactly is the correct answer? Should a victim of sexual assault have a forensic examination within 24-36-72-84 or 96 hours of their sexual assault? In my opinion, the answer is that none of these should be used as a rigid cutoff. While 72-96 hours might be used as a general guideline, I believe that best practice dictates that every sexual assault must be evaluated on a case by case basis. The question of whether or not to authorize or conduct a forensic examination should therefore be based on the facts of the case, the victim's history, the likelihood of recovering evidence, and the types of evidence that will be needed for successful prosecution. To explain what I mean, let's look at a few examples.

Stranger Sexual Assaults

First, let's look at the example of a stranger sexual assault. If you are a law enforcement professional investigating a nighttime home invasion where the victim was awakened

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

and sexually assaulted in a room with little to no lighting, it is clear that identification of the suspect will be dependent on forensics. Similarly, forensic evidence will be critical in cases where the victim is barely able to see the perpetrator's face, perhaps because he knocked her to the ground immediately, approached her from behind, covered her face with a pillow, or covered his own face with a ski mask. Based on the specific history of cases such as these, victims will be unlikely to identify a suspect so forensic evidence may be critical for developing probable cause to support an arrest. For prosecutors, forensic evidence will also be critical to convince a jury of the suspect's guilt beyond a reasonable doubt.

In other words, forensic evidence such as biological evidence and trace evidence will be critical for the successful prosecution of a stranger sexual assault case where the victim has no idea who the suspect is and little chance of making any sort of identification. If the determination is made that evidence might still be available, this suggests that a forensic examination should probably be conducted even if the victim reports well beyond the guideline of 72 or even 96 hours.

Clearly, this type of determination requires "thinking outside the box," by relying less on specified timelines and focusing more on the facts of the case and the types of evidence that are going to be critically important for successful prosecution. Personally, I would consider authorizing a forensic examination up to three weeks following a stranger sexual assault, depending on the type of assault and the potential transfer of forensic evidence. This conclusion is made on the basis of the scientific literature summarized above and the state of DNA technology today.

Non-Stranger Sexual Assault

This type of "thinking outside the box" is just as important – and in fact, perhaps more important -- in the case of non-stranger sexual assault. After all, non-stranger sexual assault is much more common than sexual assault committed by a stranger (citation 19). In addition, the defense in such a case is not likely to focus on identity ("you got the wrong guy") but rather on consent ("yeah, we had sex, but she wanted it"). Therefore, the focus of the investigation must be on overcoming the consent defense by corroborating the use of force, threat, or fear. Of course, evidence will also be collected to establish the identity of the suspect (such as bodily fluid, or even trace evidence). However, the forensic examination must go beyond this evidence of identity and emphasize the documentation of genital and non-genital injury (e.g., bruises, abrasions) to challenge the defense claim that the victim consented to the sexual activity.

Because injuries can often be observed and documented beyond 72-96 hours, the specific facts of the case should always be used to determine whether a forensic examination is warranted beyond that standard timeframe. For example, in the case of a non-stranger sexual assault, it is critically important that first responders determine whether the victim has any present complaint of pain, bleeding, burning, or tenderness. These facts and the evidence to corroborate them might be essential in later overcoming

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

a consent defense by the suspect. Therefore, if any such indications are present, I believe that a forensic examination should be conducted with the victim of sexual assault, no matter how many days have passed since the assault.

Other Sources of Evidence

The notion of “thinking outside the box” also pertains to the sources of crime scene evidence in a sexual assault case. In fact, I have to admit that I am somewhat disturbed by the more limited focus on DNA evidence and the backlog of victim sexual assault evidence kits. While sexual assault kits are certainly great sources of evidence in some cases, many law enforcement professionals and others often overlook other sources of evidence that might be even more probative. Of course, prosecutors might need to prepare to have an expert testify as to why an exam was or was not conducted.

The truth is, depending on the characteristics of the assault and the specific case history, a sexual assault kit is sometimes the last place we should look for probative evidence. For example, consider a case where the victim states that an unidentified suspect used a condom during the sexual assault, but he also sucked on her breast. In this situation, a forensic examination might not be warranted if the victim delayed reporting for a week, because the use of the condom will likely mean that forensic evidence won't be successfully recovered. However, if the victim reports within a few hours or days and has not bathed since the sexual assault, a swab from her breast may be the best source of evidence in this case. Even if the victim has bathed or delayed reporting, her bra may still be available and may provide the best source of probative evidence. With today's DNA technology, DNA has even been successfully recovered from evidence that has been washed or dry-cleaned.

As another example, the dress that the victim was wearing on the night of the sexual assault might still be hanging in the closet six months later, without having been washed. Similarly, evidence such as the sofa cushion where the assault occurred or the foreign object that was inserted into the victim's rectum might still be available long after the sexual assault took place. In fact, clothing and other objects from the crime scene are often the best source of evidence in a sexual assault case (citation 20). Unlike the human body that continues to change as a result of biological needs and hygiene, crime scene evidence such as clothing is typically stable. Therefore, DNA evidence that is recovered from such a source is likely to be detectable for many years and perhaps even decades following a sexual assault. Yet the importance of this type of evidence is all too often overlooked.

The Importance of Suspect Examinations

Another source of evidence that is critically important but all too often overlooked is the suspect examination. In my experience, I have found that most law enforcement

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

agencies have failed to establish appropriate policies and procedures for obtaining comprehensive forensic examinations for sexual assault suspects (citation 21).

When evaluating potential sources of evidence, we as law enforcement professionals must always keep in mind that anything that could be transferred from the suspect to the victim may also be transferred from the victim to the suspect. Therefore, depending on the type of offense, the body of the suspect will often be the best source of probative evidence (citation 20). It is therefore surprising that so few law enforcement agencies routinely collect forensic evidence from the body of the suspect.

The Clothing of the Suspect

Equally surprising is the frequent failure to seize the suspect's clothing, which again could be a terrific source of probative evidence. In many cases, the clothing worn by the suspect during the sexual assault is still available and depending on the specific case history and the time since the assault it may be a better source of evidence than the forensic examination of the victim (citation 20). All of these potential sources should be considered when "thinking outside the box."

By now I hope it is obvious that the forensic examination of the victim is only one source of potential evidence – and often not the best source – in the investigation of a sexual assault case. Other sources of potential evidence that might be equally important -- or even more important depending on the specific case history -- include the clothing of the victim and/or suspect, the forensic examination of the suspect, crime scene evidence from the location(s) of the assault(s), and other locations where evidence from the victim, suspect, or crime scene might have been transferred.

What the Future Holds

Based on these findings and advancing technology in genetic markers and DNA, it is clear that we need research to study the use of physical evidence in the investigation and prosecution of sexual assault cases. While we wait for this research, however, I have two primary recommendations to use in the meantime.

First, I have to reiterate my advice for investigators to "think outside the box" by considering other sources of potential evidence in a sexual assault case. Although sexual assault victim kits are now being analyzed much more frequently in crime laboratories and private laboratories throughout the country and the world, it is clear that there is still very little focus on other critical sources of evidence, such as the clothing, the suspect's body, and other crime scene evidence. Therefore, when we talk about the backlog of DNA evidence and sexual assault evidence kits, we also need to consider better utilizing the other rich sources of biological evidence that are often available to successfully investigate and prosecute sexual violence.

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

Second, I strongly recommend multi-disciplinary consultation anytime there is a question about whether or not to authorize a forensic examination or request the analysis of any forensic evidence collected from the examination. In fact, many Sexual Assault Response Teams now include forensic scientists, and this has enormous potential for enhancing the level of communication between first responders and criminalists. Of course I know that this ideal is not yet possible for many of you reading this article. So my final word of advice is for you: If you are a first responder, and an expert is not readily available, and you are evaluating whether to recommend a sexual assault forensic examination, keep in mind that it is probably best to err on the side of caution and obtain one. As we all know, the evidence will eventually be lost if a forensic examination is not obtained, so while we wait for the definitive research results to come in, I think best practice is to facilitate an examination if there is any reasonable likelihood that forensic evidence may be recovered and/or injuries observed and documented.

For More Information

This piece originally appeared as a "Promising Practices" article in the e-newsletter of **Sexual Assault Training & Investigations (SATI), Inc.** For more information on this organization or to sign up to receive this e-newsletter, please see: www.mysati.com.

Information on this and related topics is also available from **EVAW International**, including an **On-Line Training Institute (OLTI)** that offers training on the topic of criminal justice response to sexual assault. Participation in the OLTI is open to professionals, students, or others who provide verification of their employment, educational status, or evidence of legitimate interest. A registration fee is required. For more information, please see: www.evawintl.org.

An **International Conference on Sexual Assault, Domestic Violence, and Stalking** hosted by EVAW International will take place at the Westin Galleria Hotel in Houston, Texas, April 16-18, 2007. For more information or to register, see: www.evawintl.org.

References

1. "Evaluation and Management of the Sexually Assaulted or Sexually Abused Patient," American College of Emergency Physicians, Dallas, Texas, June 1999, www.acep.org.
2. Silverman, E.M. and Silverman, A.G. "Persistence of Spermatozoa in the Lower Genital Tracts of Women," *Journal of the American Medical Association*, Volume 240, Number 17, October 20, 1978.
3. Voight, J., "Sexual Offenses in Copenhagen: A Medicolegal Study," *Forensic Science*, Volume 1, Pages 67-76, 1972.

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

4. Wallace-Haggens, M.J., Duffy, B.J., and Holtrop, H.R., "Recovery of Spermatozoa from Human Vaginal Washings," *Fertility and Sterilization*, Volume 26, Pages 175-179, 1975.
5. Sharpe, N., "The Significance of Spermatozoa in Victims of Sexual Offenses." *Canadian Medical Association Journal*, Volume 89, Pages 513-514, 1963.
6. Perloff, W.H. and Steinberger, E., "In Vivo Survival of Spermatozoa in Cervical Mucus", *American Journal of Obstetric Gynecology*, Volume 88, Pages 439-442, 1964.
7. Morrison, A.J., "Persistence of Spermatozoa in the Vagina and Cervix.", *British Journal of Venereal Disease*, Volume 48, Pages 141-143, 1972.
8. Davies, A., and Wilson, E., "The Persistence of Seminal Constituents in the Human Vagina", *Forensic Scit* 3:45-55, 1974.
9. Eungprabhanth, V., "Finding of Spermatozoa in the Vagina Related to Elapsed Time after Coitus", *Z. Rechtsmed* 74:301-304, 1974.
10. Gomez, R.R., Wunsch, C.P., and David, J.H., et al: "Qualitative and Quantitative Determinations of Acid Phosphatase Activity in Vaginal Washings", *AM J. Clin Pathol* 64:423-432, 1975.
11. Pollack, O.J., "Semen and Seminal Stains", *Arch Pathol* 35:140-184, 1943.
12. Rupp, J.C., "Sperm Survival and Prostatic Acid Phosphatase Activity in Victims of Sexual Assault", *J. Forensic Sci* 14:177-183, 1969.
13. Camps, F., "Medical and Scientific Investigations in the Christie Case", London, London Medical Publishing, 1953.
14. Morrison, A.I., "Persistence of Spermatozoa in the Vagina and Cervix", Special Treatment Centre, Queens Road, Barnsley, Yorkshire, 1972.
15. Rainbow, B., Adkinson, C., Frost, T. and Peterson, G.F., "Female Sexual Assault: Medical and Legal Implications", *Annals of Emergency Medicine*, June, 1992.
16. Corey, T.S., Wetherton, A.R., Foncek, P.J., and Katz, D, "Investigation of Time Interval for Recovery of Semen and Spermatozoa from Female Internal Genitalia," from the Office of the Chief Medical Examiner, the Department of Pathology and Laboratory Medicine, University of Louisville School of Medicine, and the Kentucky State Police Forensic Science Laboratory

Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84, or 96 Hours Following a Sexual Assault?

17. U.S. Department of Justice, Survey of DNA Crime Laboratories, 2001. This survey is a follow-up to the initial survey of DNA crime labs in 1998. At the beginning of 2001, 81% of DNA crime laboratories had backlogs totaling 16,081 subject cases and 265,329 convicted offender samples. Available at: www.ojp.usdoj.gov/bjs/

18. The complete national sexual assault forensic examination protocol is available at <http://www.ojp.usdoj.gov/vawo/>

19. U.S. Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey. During 2003, about seven in ten female rape or sexual assault victims stated the offender was an intimate, other relative, a friend or an acquaintance. October 2004. Available at: http://www.ojp.usdoj.gov/bjs/cvict_c.htm

20. Caain, I.T., "The Use of Physical Evidence in the Investigation and Prosecution of Sexual Assault Cases." A Research Project Submitted to National University in Partial Fulfillment of the Requirements for the Degree of Master of Forensic Sciences, July 2002.

21. The State of California Governor's Office of Criminal Justice Planning has an excellent Forensic Medical Report to document the sexual assault suspect examination, available at www.oes.ca.gov/Operational/OESHome.nsf/CJPD_Documents?OpenForm

Archambault, J., *Time Limits for Conducting a Forensic Examination: Can Biological Evidence be Recovered 24, 36, 48, 72, 84 or 96 Hours Following a Sexual Assault?*, *Sexual Assault Report*, Civic Research Institute Inc., Kingston, NJ, Volume 10, Number 3, January/February 2007, p 33-47