

# Countering Technology-Facilitated Abuse

## Criminal Justice Strategies for Combating Nonconsensual Pornography, Sextortion, Doxing, and Swatting

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### EXECUTIVE SUMMARY

Although digital technologies that allow users to share content and interact in virtual spaces afford many conveniences in day-to-day life, their growing prevalence has enabled harmful and abusive digital interactions, including a class of behaviors termed *technology-facilitated abuse* (TFA). For the purposes of this report, TFA refers to acts or courses of conduct facilitated through digital means that compromise the victim's privacy and cause them emotional, physical, or reputational harm. The consequences of TFA, which includes such acts as cyberstalking, swatting, doxing, non-consensual pornography, and sextortion, extend far beyond the digital realm. These acts not only can cause victims to experience serious psychological distress but also can harm relationships with family, friends, and partners and disrupt educational and professional pursuits.

A lack of consensus among the public, researchers, and civil and criminal justice practitioners on how to label and characterize TFA behaviors hinders efforts to identify these acts. Individuals who experience these harmful

interactions might not realize that they have been victimized, and justice system officials might not recognize TFA as a crime. Moreover, the characteristics of digital spaces that are designed to protect privacy also make criminal instances of TFA difficult to investigate and adjudicate. Digital anonymity, the ability to collect digital evidence, and the involvement of such technology-related entities as internet providers and social media platforms all present significant challenges to law enforcement and courts. Criminal justice practitioners have struggled to keep up with the rapid pace of advancements in digital technologies, limiting efforts to bring TFA offenders to justice and mitigate the harm done to TFA victims.

On behalf of the National Institute of Justice (NIJ) and as part of the Priority Criminal Justice Needs Initiative, RTI International and RAND Corporation researchers convened a workshop called "Countering Technology-Facilitated Abuse" on July 17th and 18th, 2019. (See RAND Corporation, undated-b, for more informa-

### SELECTED PRIORITY NEEDS



#### RESULTS

##### Implementing public education and TFA prevention efforts

- Basic primary education should be developed for kids and parents about consent and about the risks and consequences of sharing information online.
- A conceptual framework or taxonomy for definitions of TFA should be developed so that criminal justice practitioners can recognize it and respond.

##### Promoting awareness of TFA among criminal justice practitioners

- Approaches to incentivize law enforcement and prosecutors to prioritize TFA cases should be identified.
- Training materials should be developed for law enforcement about TFA, the impact on victims, and the associated statutes.

##### Improving criminal justice practices and policies for addressing TFA

- Training on interviewing techniques for delicate or traumatic situations should be conducted.
- Specific resources for TFA should be designated so that TFA investigations do not take resources away from other areas.

##### Mitigating harm and empowering TFA victims

- Research should be conducted and data should be gathered to evaluate the harm of TFA and the effectiveness of remedies.
- Coordination about what the victim wants, their fears, and their experience should be promoted among law enforcement, crisis providers, and lawyers.

tion about the Priority Criminal Justice Needs Initiative). The workshop was held at the Office of Justice Program’s (OJP’s) headquarters in Washington, D.C., and was intended to inform NIJ’s research agenda. (See NIJ, undated, for more information.) RTI and RAND researchers assembled a diverse group of subject-matter experts to discuss the practical, legal, and policy challenges to effectively addressing TFA. The workshop was initially titled “Internet-Enabled Harassment,” but the workshop participants determined that *technology-facilitated abuse* was a more-comprehensive and more-accurate term to describe the full variety of platforms that can facilitate the harmful interactions that include sextortion, doxing, and other forms of abuse perpetrated through technological media. Although the number of participants was restricted to facilitate constructive discussion, participants were intended to represent key perspectives on the challenges associated with preventing and punishing TFA, including considerations related to victims’ rights and freedom of speech. The 12 workshop participants, who were selected based on their expertise about and experience with TFA, comprised three researchers, two law enforcement officials, three representatives of victim services and advocacy organizations, and four legal professionals (one judge, two federal trial attorneys, and one private attorney). Topics discussed by participants included the

scope and consequences of TFA; current legal standards for addressing TFA; and techniques and policies to equip law enforcement officers, prosecutors, and lawmakers to effectively address challenging digital crimes while protecting individual rights, such as freedom of speech and privacy.

After our discussions, workshop participants identified and prioritized a list of 48 potential strategies for addressing TFA. In the context of the Priority Criminal Justice Needs Initiative, these strategies for advancing promising innovations or potential solutions to problems are referred to as *needs*. Needs were ranked by participants according to whether they were high (Tier 1), medium (Tier 2), or lower (Tier 3) priority (see the technical appendix for more details on the methodology used to prioritize the needs). Twenty-one of the identified strategies (or needs) stemming from the workshop were deemed to be high priority (Tier 1). The high-priority needs reflect four key themes that arose in participant discussions: (1) implementing public education and TFA prevention efforts, (2) promoting awareness of TFA among criminal justice practitioners, (3) improving criminal justice practices and policies for addressing TFA, and (4) mitigating harm and empowering TFA victims. In this report, we discuss the 21 high-priority needs that emerged through our ranking exercise (see Table 1) and provide additional context based on participant discussions.

## WHAT WE FOUND

- Nine of the high-priority needs highlighted the critical importance of raising awareness of the prevalence, costs, and harms of TFA behaviors among the general public and criminal justice practitioners. Recommendations for improving public awareness included the development of a conceptual framework of TFA behaviors and the provision of school-based public education around internet safety. Participants determined that TFA legislation, empirical measurements of the profound harms and costs of TFA behaviors, and prioritization by leadership are key to ensuring that TFA cases are prioritized by law enforcement and courts.
- Several high-priority needs emphasized the need for trauma-informed approaches to investigating and adjudicating TFA cases. These approaches would acknowledge the profound harm done to TFA victims. Participants observed that TFA cases require greater engagement with victims by criminal justice practitioners. Increased coordination among law enforcement, lawyers, victims’ rights organizations, and service providers would encourage TFA victims to come forward with their cases and would empower them to make decisions about what path of recourse (i.e., criminal, civil, or otherwise) to take.
- Criminal justice practitioners often lack the tools—both investigative and legal—to address TFA cases effectively; five of the high-priority needs addressed this issue. Developing standards and training around the identification, collection, and processing of digital evidence and establishing specialized TFA units would enable law enforcement to conduct thorough investigations of TFA crimes. Instituting statutes specific to TFA behaviors, accompanied by sentencing guidelines that acknowledge the harms to and vulnerabilities of TFA victims, would allow prosecutors to ensure that TFA sentences are commensurate with harm and that victims’ needs are met.
- A core theme of the participant discussion articulated in four high-priority needs was the critical importance of efforts to mitigate the significant, irreparable, and persistent harm experienced by TFA victims. Participants called for research to evaluate the extent to which existing remedies mitigate harm, tools for early detection of TFA, and methods for mitigating the effects of TFA and empowering victims.
- Participants agreed that deterrence must be at the core of efforts to address TFA and they highly prioritized needs related to deterrence. Statutes that criminalize TFA behaviors might serve as a deterrent for some types of TFA perpetrators, although research is needed to better understand TFA perpetrators and the effectiveness of deterrence approaches.

## INTRODUCTION

Although the growing prevalence of digital technologies has afforded many benefits, it also has provided new media for harmful and abusive behaviors. Websites, social media platforms, and mobile phone applications that allow users to store and share content and interact virtually and often anonymously can be used to facilitate harmful and potentially criminal digital interactions, including the class of behaviors described in this report under the general term *technology-facilitated abuse*. For the purposes of this report, we define TFA as an abusive or harmful act or course of conduct facilitated through digital media (e.g., websites, social networking platforms, dating sites, apps, blogs, online games, instant messages, email) and targeted either directly or indirectly at a particular person or group of persons, often (but not always) with the intent to cause emotional distress, reputational damage, and/or fear for personal safety. TFA can involve the use or distribution of the victim's personal information (real or false), which compromises the victim's privacy and poses a threat to their safety. Prominent examples of TFA include

- **cyberstalking:** the repeated use of electronic communications technology to stalk a person or group. Cyberstalking is different from cyber harassment in that it poses a credible threat of harm to the victim (National Conference of State Legislators, 2010).
- **sextortion:** a form of cyber extortion in which offenders demand that victims provide them with sexual images, sexual favors, or other things of value and threaten to harm or embarrass victims if they fail to comply (Clark, 2016).
- **nonconsensual pornography:** the distribution of nude or sexually explicit images or videos of an individual without their consent. These images or video could have been consensually produced and/or obtained in the context of an intimate relationship or they could have been nonconsensually produced and/or obtained (e.g., via the use of secret cameras or hacking) (Eaton, Jacobs, and Ruvalcaba, 2017).
- **doxing:** the public release of private and sensitive personal identifying information about an individual without their consent (MacAllister, 2017).
- **swatting:** the false reporting of an emergency to public safety agencies with the intent of getting a response (specifically, the deployment of a special weapons and tactics [SWAT] team) to a location where no emergency exists (National 911 Program, 2015).



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Although these acts can have devastating and long-lasting consequences that extend far beyond the digital realm, criminal justice practitioners and the general public alike often are unaware of many of these behaviors or the full scope of their harms and consequences. Individuals who experience TFA might not recognize that they have been victimized or know who to contact for help. Criminal justice officials might be unsure of whether there are relevant criminal statutes addressing the behavior and whether there are available recourses or resources—legal and otherwise.

Cases of TFA that are taken up by law enforcement and courts often are extremely challenging to investigate and adjudicate because of the anonymity provided by most digital platforms, the difficulty of gathering digital evidence, and a legal landscape that has not kept pace with recent technological advancements. As of the writing of this report, no federal legislation explicitly addresses TFA crimes. The involvement of technology-related entities, such as websites, phone applications, and internet service providers, might further complicate these efforts. Moreover, many social media platforms, such as Facebook, Instagram, YouTube, Twitter, and Reddit, have adopted their own policies for identifying and responding to harmful digital behaviors that might come into conflict with those of criminal justice actors. Concerns around user privacy and free speech can further challenge collaboration between law enforcement and other entities that facilitate digital communication.

In this report, we briefly describe what is known about TFA and the need for a workshop on the challenges associated with addressing these crimes. The focus of this report is on the findings from the workshop and, specifically, the participant-developed recommendations related to TFA, organized around the major themes of the meeting.

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## The Prevalence of Technology-Facilitated Abuse

TFA is on the rise. Estimates suggest that between 18 percent and 37 percent of adult Americans have experienced severe online harassment, including physical threats, sexual harassment, stalking, and sustained harassment (Anti-Defamation League, 2019; Duggan, 2017). One in 12 adult social media users in the United States have been victims of nonconsensual pornography (Ruvalcaba and Eaton, 2020). Approximately 7 percent of U.S. adults have had explicit images of themselves shared without their consent (Duggan, 2017), and 5 percent of U.S. middle and high schoolers report having been victims of sextortion (Patchin and Hinduja, 2020). In addition, the number of swatting incidents rose from about 400 in 2011 to more than 1,000 in recent years (The Economist, 2019).

TFA takes place in and across a variety of digital venues, including social media platforms, online gaming communities, video- and image-sharing social sites, and digital messaging services and applications. Although little is categorically known about TFA victims, studies indicate that TFA is especially prevalent among individuals in younger age groups who might have a stronger presence in digital venues and who might be easier targets. Existing research, much of which focuses on child victims of TFA, has found that younger age groups experience higher rates of sextortion (Lenhart, Ybarra, and Price-Feeney, 2016; Wittes et al., 2016), nonconsensual pornography (Duggan, 2017; Ruvalcaba and Eaton, 2020), and cyberstalking (Burlock and Hudon, 2018). Young adults also appear to be overrepresented among TFA victims, with more than 45 percent of those aged 18 to 29 reporting having experienced severe online harassment (Anti-Defamation League, 2019; Duggan, 2017).

The consequences of TFA are not limited to the digital realm. TFA can be a component of or a precursor to in-person victimization (Lenhart et al., 2016). Research on the markers of escalation for TFA is sparse, but scholars have noted that TFA behaviors are not uncommon tactics in the perpetration of stalking and interpersonal violence (Baum et al., 2009; King-Ries, 2011; Lenhart et al., 2016; Marganski and Melander, 2015).

## The Impact of Technology-Facilitated Abuse

TFA can have severe and long-lasting impacts on victims that extend far beyond the digital realm. Studies have found that victims of TFA experience symptoms of serious psychological distress, including feelings of isolation, guilt, anger, and worth-

## TFA can negatively affect victims' social relationships and disrupt their educational and professional pursuits.

lessness (Short et al., 2015). Almost half of U.S. adults who have been victims of severe online harassment report experiencing mental or emotional stress as a result (Duggan, 2017). Victims of sextortion and nonconsensual pornography suffer from depression, anxiety, and posttraumatic stress disorder (PTSD) and engage in self-harm at alarmingly high rates (Bates, 2017; International Centre for Missing and Exploited Children, 2018; U.S. Department of Justice, 2016). A 2015 Federal Bureau of Investigation analysis of 43 sextortion cases found that in 28 percent of those cases the victim either attempted or died by suicide (U.S. Department of Justice, 2016).

TFA can negatively affect victims' social relationships and disrupt their educational and professional pursuits. One in four victims of severe online harassment say that it caused problems with friends or family (Duggan, 2017). In one survey of sextortion victims, almost half reported having lost a relationship with a friend, family member, or partner because of the incident (Wolak and Finkelhor, 2016). In some cases, fears for personal safety led victims to move (Wolak and Finkelhor, 2016). One in 20 victims of online harassment have difficulty finding a job or lose an educational opportunity because of something posted about them online (Lenhart et al., 2016). About one in ten victims of severe online harassment say that it caused problems at work or at school (Duggan, 2017); in some cases, these problems were so severe that victims needed to leave schools or jobs (Wolak and Finkelhor, 2016).

### Methodology

As a first step in developing and structuring the workshop, RTI staff conducted a literature review of sextortion, cyberstalking, nonconsensual pornography, doxing, swatting, and other abusive online behaviors that pose unique challenges for identification, investigation, and adjudication. This review revealed considerable gaps in the research, including a lack of agreement among researchers and practitioners on how to label and characterize these behaviors, what circumstances indicate that the incident is a criminal offense, and how these acts should be addressed by the public and the civil and criminal justice systems. RTI staff developed a workshop agenda posing these

questions and others to participants via three guided discussions. These discussions concerned

1. efforts to understand the scope of the problem and label TFA a criminal offense
2. law enforcement identification of and response to TFA, including law enforcement investigations of TFA allegations and the technological needs and challenges involved in these investigations
3. TFA case processing, including when cases are referred for prosecution, how digital evidence is presented to judges and juries, and how offenders are sentenced.

Findings from the literature review were synthesized into a five-page read-ahead document that was provided to workshop invitees along with the agenda prior to the event.

The review of the literature informed the identification of the invited workshop participants. To foster dynamic discussions that would address diverse stakeholder perspectives, RTI staff sought the input and participation of experts representing local, state, and federal law enforcement; legal professionals; researchers; and experts from victim services and advocacy organizations. Many of the experts invited to attend the workshop have made significant contributions to efforts to address TFA, whether by supporting and advocating on behalf of TFA victims; investigating, prosecuting, or adjudicating TFA crimes; conducting research on the prevalence and impact of TFA; or advancing legislative measures against TFA. Additionally, it was important to have voices from the civil liberties side of the discussion to provide perspective on the potential negative consequences of restrictions and changes to online behavior.

The goal of the workshop was to identify and prioritize a list of critical issues for addressing TFA and to brainstorm "needs" for advancing related research and technology. In the context of the Priority Criminal Justice Needs Initiative, *needs* refers to potential solutions to problems or strategies for advancing promising innovations. Over the course of four informal discussions outlined in the agenda (see the Technical Appendix), participants identified needs related to implementing public education and TFA prevention efforts, promoting aware

There was a general perception that the seriousness of TFA and its impact on victims were underappreciated, both within the criminal justice system and outside it, and several needs pertained to efforts to help various parties understand the damage TFA does and to support victims.

ness of TFA behaviors, improving criminal justice practitioners' knowledge of and response to instances of TFA, and mitigating harm to TFA victims. Participants were led through an exercise to prioritize these needs into a top-, middle-, and bottom-tier classification based on their importance and their feasibility. See the technical appendix for a more-detailed description of the prioritization and other methods used.

## RESULTS

During the panel discussion, the workshop participants identified a total of 48 needs related to challenges with identifying and responding to TFA for both the general public and the criminal justice system. During the prioritization exercise, 21 of these needs were identified as high priority. The 21 high-priority needs are displayed in Table 1. Note that, in many cases, participants identified multiple potential solutions or needs for the same problem. Issues associated with multiple needs have multiple bullets in the second column of the table.

### Top-Tier Needs

Several themes emerged among the top-tier needs. Some of the top-tier needs were focused generally on finding methods and resources to both mitigate the effects of TFA and empower victims of TFA. In one specific example, participants noted the need for better tools to help individuals detect TFA as it is happening and respond. There was a general perception that the seriousness of TFA and its impact on victims were underappreciated, both within the criminal justice system and outside it, and several needs pertained to efforts to help various parties understand the damage TFA does and to support victims. Participants identified a need for a survey to ascertain the extent of public knowledge about TFA, its effects, responses to it, and the lasting harm it can cause. Another need called for the development, implementation, and dissemination of public educa-

tion materials for children and parents on consent and the risks and consequences of sharing information online. Participants also identified the need to create a more-defined conceptual framework or taxonomy for TFA. Finally, participants noted that communicating about the impact of types of TFA, such as doxing and swatting, often was challenging. The participants called for research to quantify the real costs of such acts.

Beyond these needs, which were more focused on the general population, several needs pertained to the criminal justice system's engagement with TFA. One top-tier need called for resources to be designated specifically for addressing TFA within sectors of the criminal justice system. Other needs pertained to assessing whether current criminal justice remedies provide an adequate deterrent effect to potential perpetrators, including one need that called for further research to identify the different types of individuals who perpetrate TFA and what might deter them. Similarly, participants highly prioritized a need for amendments to sentencing guidelines for TFA crimes to better fit the real potential harms for victims of the crimes.

One such need called for increased coordination among law enforcement, crisis providers, and lawyers to improve understanding of victims' needs, fears, and experiences. Another need called for the development of approaches to incentivize law enforcement and courts to adequately prioritize TFA cases. Participants identified a specific related need for further research on the gravity and types of vulnerabilities victims might experience, primarily for the purposes of judicial education. Several needs addressed other specific training deficits, including the idea that materials should be developed to train law enforcement on what TFA is, what impact it has on victims, and which criminal statutes apply. There also was a need for further law enforcement training on interview techniques for delicate or traumatic situations that result from TFA. Finally, a need was identified for further law enforcement train-

**Table 1. The 21 Top-Tier Needs**

<b>Problem or Opportunity</b>	<b>Associated Need</b>
<b>Implementing public education and TFA prevention efforts</b>	
It is difficult to quantify the cost (i.e., loss) of swatting and doxing.	<ul style="list-style-type: none"> <li>• Conduct research on the cost of emergency response for swatting and the risk to society.</li> <li>• Conduct research on the cost of doxing. (Researchers can use identity theft response as an example.)</li> </ul>
There is a lack of education and resources about consent and about the risks and consequences of sharing information online.	<ul style="list-style-type: none"> <li>• Develop, implement, and disseminate basic primary education to kids and parents about consent and about the risks and consequences of sharing information online.</li> </ul>
It is unclear how to get relevant stakeholders and the public to care about identifying and responding to TFA.	<ul style="list-style-type: none"> <li>• Conduct a survey about TFA to collect data on what people know about TFA, victim response, effects on victims, and secondary injuries or personal harm.</li> </ul>
The lack of common definitions for TFA limits the ability of the criminal justice system to recognize and effectively respond to incidents. It also limits the ability of victims to report TFA.	<ul style="list-style-type: none"> <li>• Develop a conceptual framework or taxonomy for definitions of TFA so that criminal justice practitioners can recognize it and respond.</li> </ul>
<b>Promoting awareness of TFA among criminal justice practitioners</b>	
Law enforcement might not prioritize TFA cases.	<ul style="list-style-type: none"> <li>• Identify approaches to incentivize law enforcement and prosecutors to prioritize TFA cases.</li> <li>• Develop training materials for law enforcement about TFA, the impact on victims, and the associated statutes.</li> </ul>
A lack of judicial knowledge about technology and the vulnerability of TFA victims can be a barrier to resolving TFA cases.	<ul style="list-style-type: none"> <li>• Conduct research about TFA victim vulnerability.</li> </ul>
There could be differences in perpetrators that affect their deterrability.	<ul style="list-style-type: none"> <li>• Conduct research to understand the types of perpetrators and what deterrents might be effective.</li> </ul>
<b>Improving criminal justice practices and policies for addressing TFA</b>	
There are insufficient staff members trained to identify, gather, and process digital evidence.	<ul style="list-style-type: none"> <li>• Require basic training around digital evidence among first responders.</li> <li>• Disseminate existing training and develop accreditation standards.</li> </ul>
There is resistance and reluctance among victims to come forward.	<ul style="list-style-type: none"> <li>• Conduct training on interviewing techniques for delicate or traumatic situations.</li> </ul>
Criminal justice practitioners are overwhelmed by the amount of unstructured data and potential evidence—the variety, volume, and velocity of such evidence.	<ul style="list-style-type: none"> <li>• Build TFA investigative teams or units.</li> </ul>
There is a lack of funding for TFA identification and response.	<ul style="list-style-type: none"> <li>• Designate specific resources for TFA so that TFA investigations do not take resources away from other areas.<sup>a</sup></li> </ul>
A lack of judicial knowledge about technology and the vulnerability of TFA victims can be a barrier to resolving TFA cases.	<ul style="list-style-type: none"> <li>• Propose model amendments to sentencing guidelines.</li> </ul>

Table 1—Continued

Mitigating harm and empowering TFA victims	
TFA can cause significant, irreparable, and persistent harm to the victim.	<ul style="list-style-type: none"> <li>• Conduct research and gather data to evaluate the harm of TFA and the effectiveness of remedies.</li> <li>• Develop tools to help detect TFA.</li> <li>• Develop methods and resources for mitigating the effects of TFA.</li> <li>• Develop methods and resources to support and empower victims of TFA.</li> </ul>
There is resistance and reluctance among victims to come forward.	<ul style="list-style-type: none"> <li>• Promote coordination among law enforcement, crisis providers, and lawyers about what the victim wants, their fears, and their experience.</li> </ul>
Legal remedies and penalties for TFA are inadequate for addressing the harms (e.g., forfeiture, sex offender registry, misdemeanor versus felony, sentencing guidelines).	<ul style="list-style-type: none"> <li>• Reassess whether available remedies and penalties are appropriately tailored for deterrence and harm mitigation.</li> </ul>

<sup>a</sup> This need was accidentally omitted from the third round of prioritization. As a result, participants were not given the opportunity to vote on adjusting which tier the need fell into after the second round of voting.

ing on the identification, collection, and processing of digital evidence needed to investigate and prosecute TFA cases.

The total list of needs was aligned across four categories (which we describe further in the next section): (1) implementing public education and TFA prevention efforts, (2) promoting awareness of TFA among criminal justice practitioners, (3) improving criminal justice practices and policies for addressing TFA, and (4) mitigating harm and empowering victims. The 21 top-tier needs were fairly evenly distributed among these four categories. The categories for improving criminal justice practices and policies and mitigating harm and empowering victims each have six top-tier needs, while there are five needs in the public education and prevention category and four needs in the awareness among criminal justice practitioners category.

## DISCUSSION

### Implementing Public Education and Technology-Facilitated Abuse Prevention Efforts

Given the lack of consensus on how to define and characterize TFA behaviors, the associated language and terminology served as a natural starting point for participant discussions. Participants debated the merits and limitations of providing a more definitive label for these harmful digital interactions. Several participants raised the concern that providing a new label would suggest that these are new crimes or behaviors,

undermining progress that has been made in finding strategies and tools to address such crimes in recent years. Nonetheless, participants came to the conclusion that a conceptual framework and taxonomy of these behaviors, which they labeled *technology-facilitated abuse*, would facilitate research, raise public awareness about these behaviors, increase the chances that victims report to law enforcement, and improve the criminal justice system's ability to effectively respond to such behaviors.

Participants were intent on ensuring that the term used would adequately capture the variety of behaviors and motivations associated with TFA. Participants agreed that characterizations of TFA must be broad enough to capture the full scope of these behaviors, particularly because targeting and intent are more ambiguous in digital spaces. One participant highlighted the term *revenge porn* as an example. By implying that a perpetrator is motivated by a personal desire to get revenge on the victim, the term *revenge porn* excludes instances in which the motivation was financial gain, bragging, entertainment, etc. For this reason, the term *nonconsensual pornography*, which does not require a particular motivation for the act, has been adopted as a broader substitute for *revenge porn*. Another participant opposed the use of the term *cyberviolence*, observing that some TFA victims would not classify their experiences as violent.

In addition to developing a common terminology, participants discussed the need for a foundational body of knowledge on TFA prevalence, impact, and costs that could inform efforts to raise public awareness. As a participant observed, "The average person feels like they can point to statistics, like one in four

college students have been assaulted.” One recommendation was to conduct a national survey, informed by the conceptual framework of TFA and similar in design to the National Crime Victimization Survey,<sup>1</sup> that could gather more-accurate data on the prevalence of TFA behaviors—particularly those that are not classified as crimes. A survey could shed light on the far-reaching social, emotional, and economic impacts of TFA on victims and the growing connection between harmful digital interactions and physical violence. Emphasizing the severity of harm done to TFA victims, a participant noted an extremely high incidence of attempted suicides in the TFA cases they have encountered.

Participants highlighted the need for research on doxing and swatting, the full costs of which remain unknown. Little is known about the costs—financial and otherwise—incurred by a doxing victim to regain control over their identity. According to one participant, “[It would be helpful to] just quantify how much the average person who has been doxed has to spend getting back control over their identity. [Victims have] had to run Google checks and install security systems and hire reputation firms.” Another participant cited the need for research on the broader costs of swatting on society, explaining that swatting incidents not only require a costly SWAT response but also desensitize law enforcement to the gravity of deploying a SWAT team and endanger public safety by diverting these teams from situations that might require them.

Participants identified public education on TFA, internet safety, and online consent as a high-priority need. Participants proposed the implementation of school-based internet safety programs and public service announcements (PSAs) that would educate students and their parents about the consequences of sharing information online, the importance of consent in digital spaces, and the profound impact of TFA on victims. As one expert stated, “We have to think about the role of schools. They’re at the flashpoints of so much of this.” One participant described a digital citizenship program they facilitate for their local school system in which parents are presented with digital content posted by their children. Another pointed to a digital resilience program in Europe that provides training to students and their parents about the risks and impact of online behavior and ways of reporting harmful interactions. Research has shown that this program is highly effective (Reynolds and Parker, 2018). In the United States, such federal agencies as the Federal Trade Commission have set out to educate consumers about identity theft, and this messaging strategy could be adapted to address TFA. The limited education campaigns

that are available about how to protect yourself from TFA victimization or what to do if you are a victim are targeted predominantly at juveniles despite the fact that many victims are women in their twenties and thirties.

### **Promoting Awareness of Technology-Facilitated Abuse Among Criminal Justice Practitioners**

Many of the criminal justice practitioners described a lack of awareness and prioritization of TFA within the criminal justice system. Examples of this lack of awareness include individuals not having a basic understanding of what TFA is and what criminal statutes might govern a response to it and a failure to recognize the harms and consequences of these acts.

Workshop participants noted that a major factor in the awareness of TFA (or lack thereof) among criminal justice practitioners is the limitations of existing criminal TFA legislation and statutes. Many TFA cases are charged under laws that address related criminal behavior, such as unlawful surveillance, extortion, and hacking, but do not completely fit the crime. Updated statutes that more directly address TFA and its associated harms would better support law enforcement and prosecutors and also would signal that the offense is serious and needs to be prioritized. According to one expert, “Having legislation creates a chain reaction. It communicates that this is something we value and want to remediate.” In other words, legislation is important for normative and operational purposes. There are currently no federal TFA statutes, and although

Updated statutes that more directly address TFA and its associated harms would better support law enforcement and prosecutors and also would signal that the offense is serious and needs to be prioritized.

If law enforcement is not aware of the relevant statutes and does not understand the consequences of TFA for victims, reports will not be taken, investigations will not be conducted, and cases will not make their way to prosecutors.

many states have passed laws on certain types of TFA, such as nonconsensual pornography, these acts often are defined as misdemeanor offenses. As one participant noted, “These [acts of TFA] have to be charged as felonies. Prosecutors won’t waste their time on misdemeanors.”

Other workshop participants pointed out that simply having TFA statutes is not enough to increase awareness among criminal justice practitioners. The criminal justice system is driven by statistics; for resources to be dedicated to these cases, there must be prioritization from the top down and a demand to count them. As examples, violent crime squads feel pressure to solve homicide cases, and cyber squads feel pressure to handle hacking cases. Any cases not explicitly within those categories, such as cyberstalking cases, do not count toward the relevant statistics for either squad and therefore are not likely to receive the same level of attention. Participants stressed that someone in a high-level federal position needs to make TFA a priority in order for other state and local criminal justice entities to follow suit.

There also needs to be training for law enforcement to understand applicable TFA laws and what can be done with them. If law enforcement is not aware of the relevant statutes and does not understand the consequences of TFA for victims, reports will not be taken, investigations will not be conducted, and cases will not make their way to prosecutors. One participant explained, “Local police will send [TFA victims] to the state police. State police will put it at the bottom of the pile. They’ll say we know it’s illegal, but we don’t know how to [investigate] it, and even if we did, we don’t have the staff.” This lack of understanding and response on the part of law enforcement not only means that the case will not move forward but also revictimizes individuals who were traumatized and now have no recourse against the offenders.

Throughout the two-day workshop, participants iterated that one emphasis in addressing TFA must be on understanding and effecting deterrence. Digital anonymity and the

dehumanizing effects of technology can give rise to impulsive and harmful behaviors and can impart a sense of impunity on perpetrators. Participants noted that having criminal TFA statutes is essential to curb such impulsivity on the part of perpetrators and deter their behavior. They pointed out that certain types of offenders might be deterred by knowing that TFA is a crime, it causes harms to victims, and it will result in criminal sanctions. To demonstrate this point, one participant raised an example of a high-profile hacking case that resulted in the nonconsensual public dissemination of explicit photos of several celebrities. In every instance, individuals were unsuccessful in halting the sharing and posting of their photos on the internet, with one exception: a gymnast who publicly stated that the photos of her were taken when she was under age 18 and therefore constituted child pornography. In that example, the clear threat of criminal sanctions related to child pornography was sufficient to deter offenders from posting her pictures. One participant pointed out that “There’s a spectrum between pathological harassers and the opportunistic kid who wants to make money or improve [their] reputation. The criminal penalties will deter the opportunistic ones.” Participants noted that more research is needed to understand the motivation of different types of offenders and whether certain sanctions are more or less effective at deterring TFA behavior. According to one expert, “There isn’t good research on the victimization deterrent and perpetration components [of TFA]. . . . There isn’t a good body of peer-reviewed empirical research that allows us to make evidence-informed decisions.”

Finally, some participants expressed the opinion that criminal justice practitioners tend to assume that personal crimes that occur in the cyber realm are less serious than those that have a physical component. One participant explained that when judges hear impact statements from victims of TFA, “their jaws drop.” Criminal justice practitioners often lack an understanding of the extent to which these acts can destroy a life and are “violence by proxy” in that they can lead victims to

physically harm themselves. Another participant explained that he had a case in front of a judge who said, “I don’t understand this case. This is like a domestic violence case where nobody got hurt.” After hearing the victim impact statement, the judge ultimately wrote a strongly worded statement condemning the crime. The participant explained that, for the judge, the issue “wasn’t a lack of familiarity with the technology; it was a lack of familiarity with the circumstances of the victims.” Although victims might be reticent to come forward and share their experiences, it is critical that criminal justice practitioners hear their stories because they bring awareness to the level of pain and trauma caused by TFA. Furthermore, empirical research is needed to fully elucidate the vulnerabilities of TFA victims and the urgency of addressing these cases. As one participant noted, “I don’t think people understand the grave damage that can be done just by having one naked photo posted next to a real name and address.”

### Improving Criminal Justice Practices and Policies for Addressing Technology-Facilitated Abuse

Participants identified several areas where criminal justice practitioners need policies, guidelines, standards, and training to help address the many challenges in bringing TFA offenders to justice. Although the identified needs often were specific to different stages of the justice system—investigation, prosecution, or sentencing—one recommendation that spanned the system was the need for criminal justice practitioners to approach TFA victims from a trauma-informed lens. Participants stressed the importance of the following training emphases for practitioners:

- training to conduct victim interviews in a delicate manner, recognizing the sensitivities of these cases
- training to keep victims engaged and informed throughout the case, particularly when a perpetrator has been identified and the victim might be at risk of retaliatory attacks
- training on building trust with victims to ensure that they are comfortable turning over the materials needed for the investigation, which often includes personal cell phones and computers.

Participants noted that another major challenge for law enforcement agencies in addressing TFA cases is not having the training or resources to deal with digital evidence needs. Investigators in TFA cases face multiple challenges that have

been documented in many cases that depend heavily on the collection, analysis, and presentation of digital evidence.<sup>2</sup> First, there is often a significant volume of unstructured evidence to sort through: According to one participant, “We’re overwhelmed with data—the sheer volume of potential evidence.” Second, the proliferation of anonymizing tools, encryption, and use of the dark web have made it “exponentially more difficult” to identify offenders, according to a participant. Third, investigators need to work with third-party data custodians, such as social media platforms, that have few incentives to cooperate with law enforcement beyond what is strictly required by law. One participant explained, “The providers are not fulfilling their requirements. They’re leaving a lot of stuff out. Or they’ll send you an encrypted file and say good luck.”

Despite the challenges law enforcement faces with respect to digital evidence, participants noted that many of these challenges can be overcome with established strategies and training. One individual noted, “The dark net is not a black hole. With the proper use of undercover tactics, there are ways to bring [TFA offenders] out.” Others noted that there are existing models that could be used for the purpose of developing standards and training for law enforcement around getting and analyzing digital evidence. For instance, according to one participant, “the civil side has been more advanced around electronic evidence. They have come up with guidelines for what can be asked for [from social media and internet platforms]” (see, for example, Faegre Drinker, 2010). Embedding this training on obtaining and analyzing digital evidence into basic accreditation standards for first responders would ensure that it is implemented consistently nationwide. One participant

Participants noted that another major challenge for law enforcement agencies in addressing TFA cases is not having the training or resources to deal with digital evidence needs.

proposed providing training on TFA and digital evidence during roll call for officers before a shift or through videos or other online training vehicles. Another participant suggested providing common-sense training for law enforcement dispatchers to be able to identify at a basic level that a victim seems to be experiencing TFA and needs a response from an officer.

Beyond basic training for all first responders, several participants argued for the formation of specialized units dedicated to investigating and prosecuting TFA cases. By pooling resources, these units could obtain access to the expensive data tools that convert digital information into a usable form and enable more-efficient sharing of information across agencies. As one individual explained, “Law enforcement needs to adapt to these types of crimes. It’s not quite forensics, but something in the middle where it needs to be its own specialization.”

Participants also discussed the need for changes to sentencing guidelines for TFA crimes. Without good sentencing guidelines, prosecutors—particularly at the federal level—might not be able to ensure that the sentence for a TFA perpetrator is appropriate for the nature of harm. Emphasizing the critical importance of having statutes specific to TFA, one participant described a case in which a TFA offender who had victimized hundreds of individuals received a much lighter sentence than expected because there was no federal nonconsensual pornography statute to charge and the trafficking statute that was used instead was deemed “too aggressive.” Having statutes specific to TFA with good sentencing guidelines attached is critical for making sure the cases are pursued appropriately. Participants agreed that, particularly because criminal justice practitioners do not yet fully understand the harms to and vulnerabilities of TFA victims, it is necessary to have sentencing guidelines that take the unique circumstances of TFA into account. Additionally, if amendments were added to sentencing guidelines

Having statutes specific to TFA with good sentencing guidelines attached is critical for making sure the cases are pursued appropriately.

that would address TFA, then vulnerable victim adjustments could be added to account for such characteristics as age of the victim. Another participant stressed the importance of incorporating forfeiture into any TFA statutes, which would help force convicted offenders to turn over any information and materials about the victim. Without a forfeiture statute, there is little that can be done legally to force the offender to take down any content pertaining to the victim.

### Mitigating Harm and Empowering Victims

According to participants, the window for getting unwanted material deleted from the internet in TFA cases is often quite small: “If it’s not taken down within 48 hours, forget about it ever being taken down.” Therefore, early detection of TFA is critical. Participants suggested that social media platforms could play a large role in helping victims quickly detect TFA. These platforms have tools at their disposal to predict when something is going to go viral and, in theory, could use this information to alert an individual when something containing their information or an image is trending upward. Another panel member proposed the idea of a panic button on social media sites so that if something unwanted started going viral, a victim could “throw her hands up in the air and say help.” Others pointed to the social media practice of hash-tagging photos and suggested that it could be a model for tagging and removing unwanted images and content.

Participants agreed that more work is needed to understand whether these are effective strategies for early detection and harm mitigation. They also pointed out that more research needs to be done on the perpetrator side to identify early behaviors in online spaces that might be likely to lead to TFA. They stressed that as a society we need to figure out how to provide potential offenders with better support and help prior to them engaging in TFA. One participant asserted that it often becomes apparent in cyberstalking cases that “there were signs. These people are broken and suffering from significant mental health issues, but they don’t learn about it until two months before they’re getting sentenced.” Furthermore, there has not been a concerted public education campaign around TFA the way federal agencies have set out to educate residents about the risks and remedies of other types of victimization.

Participants agreed that TFA can cause “significant, irreparable, and persistent harm to the victim.” However, there is limited empirical evidence on the extent of the harms and the effectiveness of available remedies. One recommendation was for additional research to quantify the monetary costs of

To provide better information to victims to empower them to make decisions about their cases, participants suggested developing criminal and civil guides to help victims make decisions about which course of action is right for them.

responding to TFA. For instance, with an offense like swatting, the emergency response costs can be huge, and in smaller jurisdictions, a community might lose their only response team for hours. Quantifying these costs could help bring attention to the seriousness of the offense and the need to prioritize responses to it. Similarly, conducting a national survey on the prevalence of TFA and the associated harms, for instance, as a supplement to the National Crime Victimization Survey, would bring attention to the number of victims affected and the extent of the impact.

Participants noted that, often, a victim's primary concern is simply getting pictures removed from the internet, even if that course of action might be detrimental to building a successful investigation. A TFA victim's first instinct often is to delete the harmful content that would aid an investigation. One participant noted that "[Law enforcement is] in a mad dash to collect any threat or piece of digital evidence, but the victim is spiraling because she's terrified that these images will be circulated. She's worried she's going to be raped or killed. She's trying to delete everything while we're trying to preserve everything." Another said, "You really have to talk to victims, because they're often trying to get this content taken down. The minute it comes down, it's more difficult [to build a case against the perpetrator]." Participants also noted that although they ultimately want to see victims bring cases forward and bring offenders to justice, the decision to advance a case should rest with the victim. One participant noted, "I see our mandate as 'help the victim where the victim is.'" That participant went on to explain that although it might be frustrating to have a victim that does not want to go forward with a case, that decision is up to the victim and they need to have the information to make that decision for themselves. Another participant expressed, "It's important to convey to victims, 'No matter what you do, it's going to draw more attention to you.' The victim has to make a calculation of what to do."

To provide better information to victims to empower them to make decisions about their cases, participants suggested developing criminal and civil guides to help victims make decisions about which course of action is right for them. Participants pointed to some example guides that are available online, describing what to do if an individual finds out that they are a victim. For example, the website "Without My Consent" provides resources for victims on how to document what has been posted and any communication they have had with the offender to build a stronger civil or criminal case ("Without My Consent," undated). These materials need to be made more readily available and accessible. Other participants noted that it would be helpful to have more involvement from victims' rights organizations and victim service providers in TFA cases. These types of intermediaries can ensure that victims are getting the information and crisis services they need and that they have a neutral advocate helping them work with law enforcement and prosecutors to make decisions.

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## CONCLUSION

The proliferation of digital technologies that enable virtual interactions and allow the storage and sharing of content has given rise to new modes and methods of perpetrating harassment, abuse, and other criminal behavior. Social media platforms, gaming forums, content-sharing websites, and other digital spaces can be used to facilitate criminal interactions that compromise a victim's privacy and inflict devastating harm that extends far beyond the virtual realm. The growing prevalence of TFA is a critical issue facing criminal justice practitioners. These crimes are extremely difficult to identify, investigate, and adjudicate. The many challenges they present to law enforcement and courts are further compounded by rapid technologi-

cal change and the growing role of digital forums in day-to-day life.

The TFA discussion resulted in the identification of a broad set of research and technology needs. These needs fell into four themes: implementing public education and TFA prevention efforts, promoting awareness of TFA among criminal justice practitioners, improving criminal justice practices and policies for addressing TFA, and mitigating harm and empowering TFA victims. The 21 high-priority (i.e., Tier 1) needs identified during the workshop will help define a research and policy agenda around TFA in the coming years.

Although many of the crimes discussed during the TFA workshop have existed for many years in some form, advances in technology and digital communication have enabled their proliferation and provided new modes and methods through which they can be perpetrated. TFA behaviors can inflict profound, long-lasting harm on victims, including psychological distress and the derailing of social, educational, and professional pursuits. The workshop discussion and resulting needs demonstrate that the criminal justice system and society at large have not kept up with these changes. Existing research on the prevalence, harms, and means of addressing TFA lays a foundation for understanding this problem and potential solutions. Effectively identifying and responding to the growing problem of TFA, however, will require that this work be developed into a robust research agenda that further advances our knowledge of these crimes and creates the technology and practices to address them accordingly.

## TECHNICAL APPENDIX

In this appendix, we present additional details on the workshop agenda and the process for identifying and prioritizing technology and other needs specific to the workshop assessing law enforcement and criminal justice needs for TFA. Through this process, we developed the research agenda that structured the topics presented in the main report. The descriptions in this appendix are adapted from those in previous Priority Criminal Justice Needs Initiative publications and reflect adjustments to the needs identification and prioritization process implemented at this workshop.

### Pre-Workshop Activities

We recruited panel members by identifying knowledgeable individuals through existing professional and social networks (e.g., LinkedIn) and by reviewing literature published on the topic. We then extended invitations to those individuals and provided a brief description of the workshop's focus areas.

In advance of the workshop, panelists were provided an opportunity to identify the issues and topics that they felt would be important to discuss during the workshop. We structured the workshop agenda and discussion as shown in Table A.1 based on a comprehensive literature review and input from the workshop participants.

### Identification and Prioritization of Needs

During the workshop, we asked the participants to discuss the challenges that they or the practitioners they work with face. We also asked them to identify areas where additional research and development investment could help alleviate the challenges. During these discussions, participants suggested additional areas that are potentially worthy of research or investment. Participants also considered whether there were areas

**Table A.1. Workshop Agenda**

#### Day 1

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Welcome and Introductions  
 Initial Discussion of Workshop Functions and Objectives  
 Understanding the Scope of the Problem  
 Law Enforcement Identification of and Response to TFA  
 Review Key Benefits and Challenges Identified During Day 1, Prioritize Discussion for Day 2

#### Day 2

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Summary of Day 1 and Overview of Agenda for Day 2  
 TFA Case Processing  
 Review and Final Brainstorming Session  
 Final Needs Prioritization  
 Panel Review and Next Steps

that were not included in the existing list and suggested new ones. Although the process of expert elicitation we describe was designed to gather unbiased, representative results from experts and practitioners in the field, there are several limitations that could affect the findings. The process typically elicits opinions from a relatively small group of experts. As a result, although we attempted to make the group as representative as possible of different disciplines, perspectives, and geographic regions, the final output of the workshop likely will be significantly influenced by the specific group of experts invited to participate. It is possible that the findings from the workshop would vary were a different group of experts selected. Moreover, although the discussion moderators made every effort to act as neutral parties when eliciting opinions from the collected experts, the background and experience of the moderators had the potential to influence the questions they posed to the group and how they phrased those questions. This also could introduce bias that could influence the findings.

To develop and prioritize a list of technology and policy issues that are likely to benefit from research and investment, we followed a process similar to one that has been used in previous Priority Criminal Justice Needs Initiative workshops (see, for example, Jackson et al., 2015; Jackson et al., 2016, and references therein). The needs were prioritized using a variation of the Delphi Method, a technique developed at RAND to elicit expert opinion about well-defined questions in a systematic and structured way (RAND Corporation, undated-a). Participants discussed and refined problems and identified potential solutions (or *needs*) that could address each problem. In addition, needs could be framed in response to opportunities to improve performance by adopting or adapting a new approach or practice (e.g., applying a new technology or tool in the sector that had not been used before).

At the end of the discussion of each topic, participants were given an opportunity to review and revise the list of problems and opportunities they had identified. The participants' combined lists for each topic were displayed one by one in the front of the room using Microsoft PowerPoint slides that were edited in real time to incorporate participant revisions and comments.

Once the panel agreed on the wording of each slide, we asked them to anonymously vote using a handheld device (specifically, the ResponseCard RF LCD from Turning Technologies). Each participant was asked to individually score each problem or opportunity and its associated needs using a 1–9 scale for two dimensions: importance and probability of success.

For the *importance* dimension, participants were instructed that 1 was a low score and 9 was a high score. Participants were told to score a need's importance with a 1 if it would have little or no impact on the problem and with a 9 if it would reduce the impact of the problem by 20 percent or more. Anchoring the scale with percentage improvements in the need's performance is intended to help make rating values more comparable from participant to participant.

For the *probability of success* dimension, participants were instructed to treat the 1–9 scale as a percentage chance that the need could be met and broadly implemented successfully. That is, they could assign the need's chance of success between 10 percent (i.e., a rating of 1) and 90 percent (i.e., a rating of 9). This dimension was intended to include not only technical concerns (i.e., whether the need would be hard to meet) but also the effect of factors that might lead practitioners to not adopt the new technology, policy, or practice even if it was developed. Such factors could include, for example, cost, staffing concerns, and societal concerns.

After the participants rated the needs displayed on a particular slide (i.e., for either importance or probability of success), we displayed a histogram-style summary of participant responses. If there was a significant disagreement among the panel members (the degree of disagreement was determined by the research team's visual inspection of the histogram), the participants were asked to discuss or explain their votes at one end of the spectrum or the other. If a second round of discussion occurred, participants were given an opportunity to adjust their ratings on the same question. This second-round rating was optional, and any rating submitted by a participant would replace their first-round rating. This process was repeated for each question and dimension at the end of each topic area. Figure A.1 shows an example of a slide on the importance dimension, with related issue, need, and histogram. Figure A.2 shows a slide on the probability of success dimension.

Once the participants had completed this rating process for all topic areas, we put the needs into a single prioritized list. We ordered the list by calculating an expected value using the method outlined in Jackson et al., 2016. For each need, we multiplied the final (second-round) ratings for importance and probability of success to produce an expected value. We then calculated the median of that product across all of the respondents and used that as the group's collective expected value score for the need.

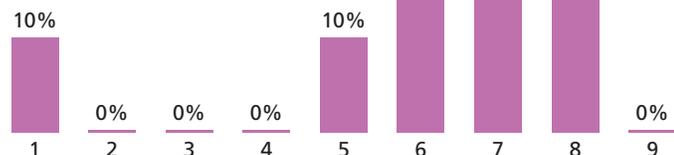
We clustered the resulting expected value scores into three tiers using a hierarchical clustering algorithm. The algorithm

**Figure A.1. Example Slide for Rating the Importance of a Need**

**34a. How *important* is it to solve this problem?**

**Issue:** There is a lack of judicial understanding about the importance of pretrial detention in TFA cases and an associated risk of releasing perpetrators.

**Need:** Develop and implement training for judges and magistrates on the risk of witness tampering and victim safety.



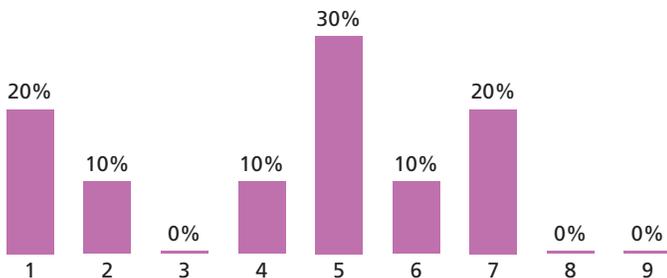
NOTE: Percentages on each question did not always sum to 100 percent because of rounding and variation in the number of participants who voted on each need.

**Figure A.2. Example Slide for Rating the Probability of Success of a Need**

**34b. What is the *probability of success* for this solution?**

**Issue:** There is a lack of judicial understanding about the importance of pretrial detention in TFA cases and an associated risk of releasing perpetrators.

**Need:** Develop and implement training for judges and magistrates on the risk of witness tampering and victim safety.



NOTE: Percentages on each question did not always sum to 100 percent because of rounding and variation in the number of participants who voted on each need.

we used was the “ward.D” spherical algorithm from the “stats” library in the R statistical package, version 3.5. We chose this algorithm to minimize within-cluster variance when determining the breaks between tiers. The choice of three tiers is arbitrary but was done in part to remain consistent across the set of technology workshops we have conducted for NIJ. Also, the choice of three tiers represents a manageable system for policymakers. Specifically, the top-tier needs are the priorities that should be the primary policymaking focus, the second-tier

needs should be examined closely, and the third-tier needs are probably not worth much attention in the short term (unless, for example, they can be addressed with existing technology or approaches that can be readily and cheaply adapted to the identified need).

Because the participants initially rated the needs by one topic area at a time, we gave them an opportunity at the end of the workshop to review and weigh in on the tiered list of all identified needs. The intention of this step was to let the panel members see the needs in the context of the other tiered needs and allow them to consider whether there were some that appeared too high or low relative to the others. To collect these assessments, we printed the entire tiered list and distributed it to the participants. This step allowed the participants to see all of the ranked needs collected across the day-and-a-half workshop, providing a top-level view that is complementary to the rankings provided session by session. Participants were then asked to examine where each of the needs landed on the overall tiered list and whether this ordering was appropriate or needed fine-tuning. Participants had the option to indicate whether each problem and need pairing should be voted up or down on the list. An example of this form is provided in Table A.2.

We then tallied the participants’ third-round responses and applied those votes to produce a final list of prioritized and tiered needs. To adjust the expected values using the up and down votes from the third round of prioritization, we implemented a method equivalent to the one we used in previous work (Hollywood et al., 2016). Specifically, if every panel member voted “up” for a need that was at the bottom of the list, then the collective effect of those votes should be to move the need to the top. (The opposite would happen if every panelist voted “down” for a need that was at the top of the list.) To determine the point value of a single vote, we divided the full range of expected values by the number of participants voting.

To prevent the (somewhat rare) situation in which small numbers of votes have an unintended outsized impact—for example, when some or all of the needs in one tier have the same or very similar expected values—we also set a threshold that at least 25 percent of the workshop participants must have voted on that need (and then rounding to the nearest full participant). For this workshop, there were 12 participants, so for any votes to have an effect, at least four participants would have had to have voted to move the need up or down.

After applying the up and down vote points to the second round expected values, we compared the modified scores with the boundary values for the tiers to see whether the change was

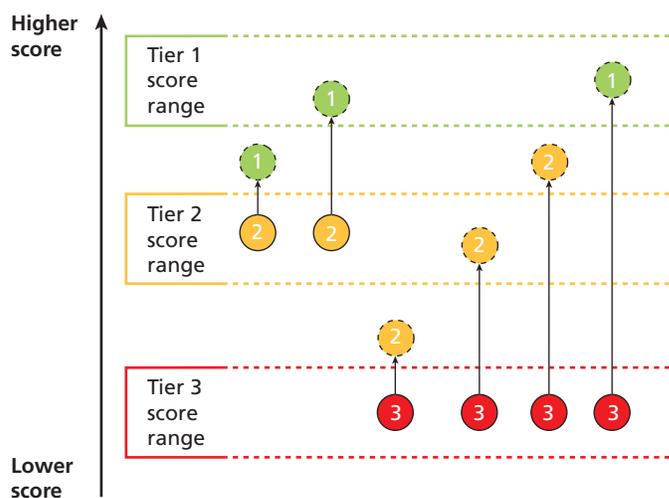
Table A.2. Example of the Delphi Round 3 Voting Form

Question	Tier	Vote Up	Vote Down
Tier 1			
<b>Issue:</b> Law enforcement might not prioritize TFA cases. <b>Need:</b> Develop training materials for law enforcement about TFA, the impact on victims, and the associated statutes.	1		
<b>Issue:</b> There is resistance and reluctance among victims to come forward. <b>Need:</b> Promote coordination among law enforcement, crisis providers, and lawyers about what the victim wants, their fears, and their experience.	1		
Tier 2			
<b>Issue:</b> There is a lack of judicial understanding about the importance of pretrial detention in TFA cases and an associated risk of releasing perpetrators. <b>Need:</b> Develop and implement training for judges and magistrates on the risk of witness tampering and victim safety.	2		
<b>Issue:</b> There is no TFA designation for filing cases. <b>Need:</b> On the criminal side, charging needs to include crime or violence. On the civil side, there should be a designation so that the case goes to a judge with knowledge of technology or TFA.	2		
Tier 3			
<b>Issue:</b> TFA first responders might experience secondary trauma. <b>Need:</b> Disseminate resources for mental health counseling.	3		
<b>Issue:</b> Data requests from cloud service providers (and social media companies) are often incomplete or unhelpful. <b>Need:</b> Establish a national library or database of tools to obtain data that are critical to the case.	3		

NOTE: Shaded cells indicate that up or down votes were not possible (e.g., Tier 1 is the top tier, so it was impossible to upvote items in that tier).

enough to move any needs up or down in the prioritization. (Note that there were gaps between these boundaries, so some of the modified expected values could fall in between tiers. See Figure A.3.) As with prior work, we set a higher bar for a need to move up or down two tiers (from Tier 1 to Tier 3, or vice versa) than for a need to move to the tier immediately above or below. Specifically, a need could *increase by one tier* if its modified expected value was higher than the highest expected value score in its initial tier. And a need could *decrease by one tier* if its modified expected value was lower than the lowest expected value in its initial tier. However, *to increase or decrease by two tiers* (possible only for needs that started in Tier 1 or Tier 3), the score had to increase or decrease by an amount that fully placed the need into the range two tiers away. For example, for a Tier 3 need to jump to Tier 1, its expected value score had to fall within the boundaries of Tier 1, not just within the gap between Tier 1 and Tier 2. See Figure A.3, which illustrates the greater score change required for a need to move two tiers (one need on the far right of the figure) compared with one tier (all other examples shown).

Figure A.3. Illustration of How a Need's Increase in Expected Value Might Result in Its Movement Across Tier Boundaries



NOTE: Each example need's original tier is shown by a circle with a solid border (the two needs starting in Tier 2 and the four needs starting in Tier 3). Each need's new tier after the third-round score adjustment is shown by the connected circle with a dotted border.

Applying these decision rules to integrate the participants’ third-round inputs into the final tiering of needs resulted in numerical separations between tiers that were less clear than the separations that resulted when we used the clustering algorithm in the initial tiering. This can occur because, for example, when the final expected value score for a need that was originally in Tier 3 falls just below the boundary value for Tier 1, that need’s final score could be higher than that of some other needs in the item’s new tier (Tier 2). See Figure A.4, which shows the distribution of the needs by expected value score after the second-round rating process and then after the third round voting process.

As a result of the third round of voting, 40 needs did not change position, two needs rose one tier, four needs fell by a tier and two needs fell by two tiers. No needs rose by two tiers. The output from this process became the final ranking of the panel’s prioritized results.

The complete list of identified needs is shown in Table A.3, and the needs are sorted by tier and theme. Of the 48 identified needs,

- 12 were related to implementing public education and TFA prevention efforts
- ten were related to promoting awareness of TFA among criminal justice practitioners
- 16 were related to improving criminal justice practices and policies for addressing TFA
- ten were related to mitigating harm and empowering TFA victims.

**Figure A.4. Distribution of the Tiered Needs Following Rounds 2 and 3**

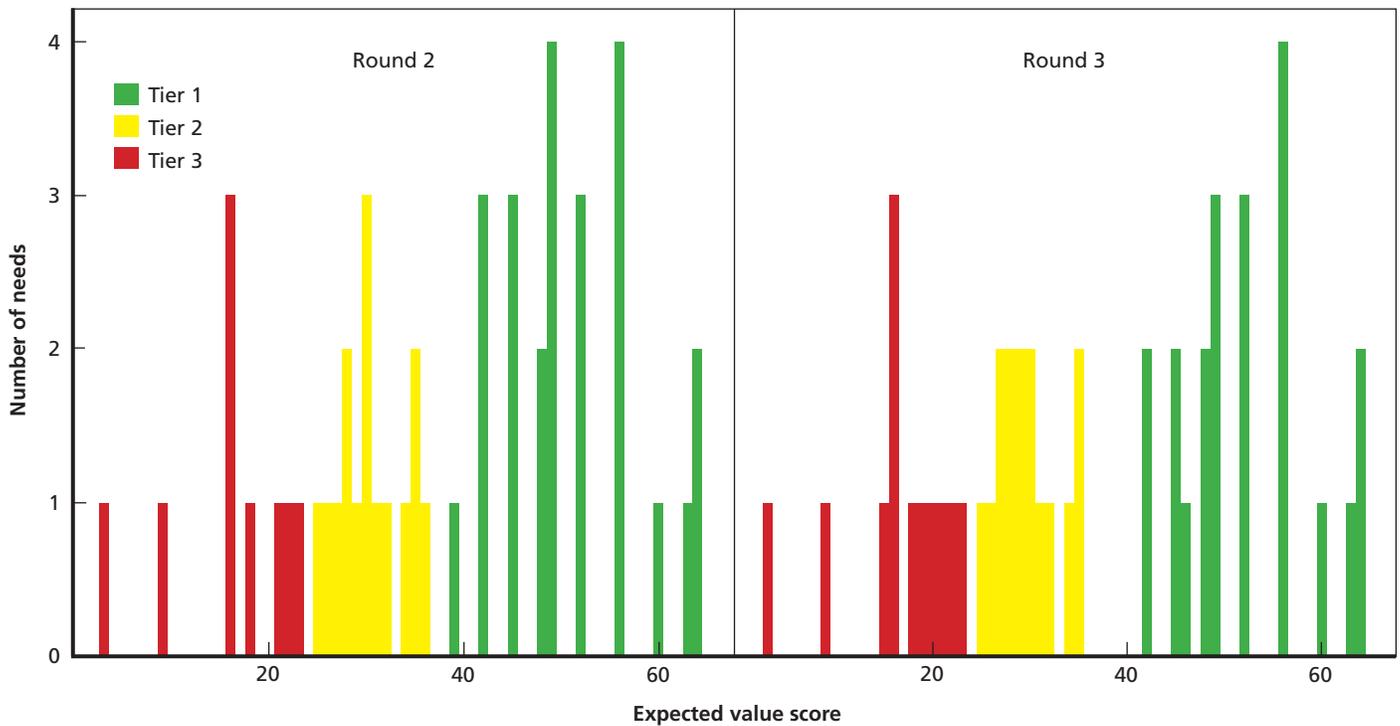


Table A.3. Complete List of Needs, by Tier

Problem or Opportunity	Need	Tier
<b>Implementing public education and TFA prevention efforts</b>		
It is difficult to quantify the cost (i.e., loss) of swatting and doxing. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Conduct research on the cost of emergency response for swatting and the risk to society.</li> <li>• Conduct research on the cost of doxing. (Researchers can use identity theft response as an example.)</li> </ul>	1
There is a lack of education and resources about consent and about the risks and consequences of sharing information online.	<ul style="list-style-type: none"> <li>• Develop, implement, and disseminate basic primary education to kids and parents about consent and about the risks and consequences of sharing information online.</li> </ul>	
It is unclear how to get relevant stakeholders and the public to care about identifying and responding to TFA.	<ul style="list-style-type: none"> <li>• Conduct a survey about TFA to collect data on what people know about TFA, victim response, effects on victims, and secondary injuries or personal harm.</li> </ul>	
The lack of common definitions for TFA limits the ability of the criminal justice system to recognize and effectively respond to incidents. It also limits the ability of victims to report TFA.	<ul style="list-style-type: none"> <li>• Develop a conceptual framework or taxonomy for definitions of TFA so that criminal justice practitioners can recognize it and respond.</li> </ul>	
<b>Promoting awareness of TFA among criminal justice practitioners</b>		
Law enforcement might not prioritize TFA cases. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Identify approaches to incentivize law enforcement and prosecutors to prioritize TFA.</li> <li>• Develop training materials for law enforcement about TFA, the impact on victims, and the associated statutes.</li> </ul>	1
A lack of judicial knowledge about technology and the vulnerability of TFA victims can be a barrier to resolving TFA cases. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Conduct research about TFA victim vulnerability.</li> </ul>	
There could be differences in perpetrators that affect their deterrability.	<ul style="list-style-type: none"> <li>• Conduct research to understand the types of perpetrators and what deterrents might be effective.</li> </ul>	
<b>Improving criminal justice practices and policies for addressing TFA</b>		
There are insufficient staff members trained to identify, gather, and process digital evidence. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Require basic training around digital evidence among first responders.</li> <li>• Disseminate existing training and develop accreditation standards.</li> </ul>	1
There is resistance and reluctance among victims to come forward. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Conduct training on interviewing techniques for delicate or traumatic situations.</li> </ul>	
Criminal justice practitioners are overwhelmed by the amount of unstructured data and potential evidence—the variety, volume, and velocity of such evidence. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Build TFA investigative teams or units.</li> </ul>	
There is a lack of funding for TFA identification and response.	<ul style="list-style-type: none"> <li>• Designate specific resources for TFA so that TFA investigations do not take resources away from other areas.</li> </ul>	
A lack of judicial knowledge about technology and the vulnerability of TFA victims can be a barrier to resolving TFA cases.	<ul style="list-style-type: none"> <li>• Propose model amendments to sentencing guidelines.</li> </ul>	

Table A.3—Continued

Problem or Opportunity	Need	Tier
<b>Mitigating harm and empowering TFA victims</b>		
TFA can cause significant, irreparable, and persistent harm to the victim. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Conduct research and gather data to evaluate the harm of TFA and the effectiveness of remedies.</li> <li>• Develop tools to help detect TFA.</li> <li>• Develop methods and resources for mitigating the effects of TFA.</li> <li>• Develop methods and resources to support and empower victims of TFA.</li> </ul>	1
There is resistance and reluctance among victims to come forward. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Promote coordination among law enforcement, crisis providers, and lawyers about what the victim wants, their fears, and their experience.</li> </ul>	
Legal remedies and penalties for TFA are inadequate for addressing the harms (e.g., forfeiture, sex offender registry, misdemeanor versus felony, sentencing guidelines).	<ul style="list-style-type: none"> <li>• Reassess whether available remedies and penalties are appropriately tailored for deterrence and harm mitigation</li> </ul>	
<b>Implementing public education and TFA prevention efforts</b>		
Advances in communication technologies can have a dehumanizing effect.	<ul style="list-style-type: none"> <li>• Conduct and implement research on the most effective ways to encourage empathy and promote understanding of the impact.</li> </ul>	2
Digital technologies, including social media, reward TFA-related impulsivity.	<ul style="list-style-type: none"> <li>• Identify, improve, and/or create design practices to discourage TFA-related impulsivity.</li> </ul>	
<b>Promoting awareness of TFA among criminal justice practitioners</b>		
There is a lack of judicial understanding about the importance of pretrial detention in TFA cases and an associated risk of releasing perpetrators.	<ul style="list-style-type: none"> <li>• Develop and implement training for judges and magistrates on the risk of witness tampering and victim safety.</li> </ul>	2
There is no TFA designation for filing cases.	<ul style="list-style-type: none"> <li>• On the criminal side, charging needs to include crime or violence. On the civil side, there should be a designation so that the case goes to a judge with knowledge of technology or TFA.</li> </ul>	
There is not enough collaboration and coordination between people working in the TFA space.	<ul style="list-style-type: none"> <li>• Increase opportunities to share resources and have dialogues.</li> </ul>	
Existing legal and other conceptions do not capture the full scope of TFA. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Develop materials to educate criminal justice system practitioners and conduct training.</li> </ul>	
<b>Improving criminal justice practices and policies for addressing TFA</b>		
There is resistance and reluctance among victims to come forward. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Provide training and guidance on building trust with victims.</li> </ul>	2
There are limited resources for managing TFA cases.	<ul style="list-style-type: none"> <li>• Identify the impacts of insufficient resources and creative practices for addressing shortages.</li> </ul>	
There is not consistency in determining the jurisdiction of the victim. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Develop and disseminate clear guidelines for determining jurisdiction and encourage law enforcement to take the report and share it with other law enforcement agencies.</li> </ul>	
Criminal justice practitioners are overwhelmed by the amount of unstructured data and potential evidence—the variety, volume, and velocity of such evidence. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Develop and implement hash values for TFA and use data analytics to triage.</li> </ul>	
The use of TOR, VPNs, encryption, and overseas providers slows investigation and makes it more difficult to get a subpoena. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Develop better tools to deal with TOR (anonymizers) and encryptors.</li> </ul>	

Table A.3—Continued

Problem or Opportunity	Need	Tier
Mitigating harm and empowering TFA victims		
There is not consistency in determining the jurisdiction of the victim. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Develop tools for victims to “know their rights.”</li> </ul>	2
There is a lack of data on risk factors for someone engaging in TFA or for TFA victims.	<ul style="list-style-type: none"> <li>• Implement an alert for users based on an uptick in followers and sharing.</li> <li>• Implement an “internet panic button” for users.</li> </ul>	
TFA can cause significant, irreparable, and persistent harm to the victim. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Reevaluate platform responsibility for TFA.</li> </ul>	
Implementing public education and TFA prevention efforts		
Media and social media reporting of swatting, doxing, and nonconsensual pornography can inadvertently promote such actions.	<ul style="list-style-type: none"> <li>• Develop media and social media guidelines for reporting on swatting, doxing, and nonconsensual pornography to mitigate against copycats and fame seekers.</li> </ul>	3
Existing legal and other conceptions do not capture the full scope of TFA. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Conduct research to highlight the precise scope in current legislation.</li> </ul>	
Online intermediaries lack incentives to prevent TFA.	<ul style="list-style-type: none"> <li>• Identify and implement incentives to prevent TFA.</li> </ul>	
Existing laws regarding harassment and stalking are insufficient to address the full scope of TFA.	<ul style="list-style-type: none"> <li>• Conduct research to determine the appropriate scope of legislation.</li> </ul>	
Anonymity, when misused by perpetrators, can embolden abuse, create anxiety for victims, and cause challenges for law enforcement.	<ul style="list-style-type: none"> <li>• Develop approaches to counteract the negative effects of anonymity while preserving the positive effects.</li> </ul>	
Promoting awareness of TFA among criminal justice practitioners		
Public defenders lack the knowledge, resources, and skills to effectively defend TFA cases.	<ul style="list-style-type: none"> <li>• Develop and disseminate TFA training for public defenders.</li> </ul>	3
Defense counsel lacks the knowledge, resources, and skills to effectively defend TFA cases.	<ul style="list-style-type: none"> <li>• Develop and disseminate TFA training for defense counsel.</li> </ul>	
Improving criminal justice practices and policies for addressing TFA		
The ad hoc nature of storing digital evidence creates difficulties for discovery.	<ul style="list-style-type: none"> <li>• Develop a best practices guide and standards for digital evidence storage, chain of custody, redaction, and dissemination.</li> </ul>	3
TFA first responders might experience secondary trauma.	<ul style="list-style-type: none"> <li>• Disseminate resources for mental health counseling.</li> </ul>	
Data requests from cloud service providers (and social media companies) are often incomplete or unhelpful.	<ul style="list-style-type: none"> <li>• Establish a national library or database of tools to obtain data that are critical to the case.</li> </ul>	
There is a lack of collaboration between law enforcement agencies and community organizations and legal services.	<ul style="list-style-type: none"> <li>• Facilitate collaboration between law enforcement agencies and community organizations and legal services.</li> </ul>	
The use of TOR, VPNs, encryption, and overseas providers slows investigation and makes it more difficult to get a subpoena. <sup>a</sup>	<ul style="list-style-type: none"> <li>• Build relationships with providers.</li> </ul>	

<sup>a</sup> This problem or opportunity is associated with needs that fell into different tiers.

## Notes

<sup>1</sup> The National Crime Victimization Survey is a data-collection tool run by the Bureau of Justice Statistics and is the United States' primary source of information on criminal victimization. For more information on the survey, see Bureau of Justice Statistics, undated.

<sup>2</sup> We have documented law enforcement challenges and needs related to digital evidence and anonymizing tools in several prior reports. For more information, see Goodison, Davis, and Jackson, 2015; Goodison et al., 2019; and Vermeer, Woods, and Jackson, 2018.

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## The RAND Justice Policy Program

RAND Social and Economic Well-Being is a division of the RAND Corporation that seeks to actively improve the health and social and economic well-being of populations and communities throughout the world. This research was conducted in the Justice Policy Program within RAND Social and Economic Well-Being. The program focuses on such topics as access to justice, policing, corrections, drug policy, and court system reform, as well as other policy concerns pertaining to public safety and criminal and civil justice. For more information, email [justicepolicy@rand.org](mailto:justicepolicy@rand.org).

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## About This Report

On behalf of the U.S. Department of Justice, National Institute of Justice (NIJ), the RAND Corporation, in partnership with the Police Executive Research Forum (PERF), RTI International, and the University of Denver, is carrying out a research effort to assess and prioritize technology and related needs across the criminal justice community. This research effort, called the Priority Criminal Justice Needs Initiative, is a component of the Criminal Justice Requirements & Resources Consortium (RRC), and is intended to support innovation within the criminal justice enterprise. For more information about the RRC and the Priority Criminal Justice Needs Initiative, please see [www.rand.org/well-being/justice-policy/projects/priority-criminal-justice-needs](http://www.rand.org/well-being/justice-policy/projects/priority-criminal-justice-needs).

This report is one product of that effort. In July 2019, RAND and RTI International researchers conducted an expert workshop on countering technology-facilitated abuse. This report presents the proceedings of that workshop, topics considered, needs that the panel developed, and overarching themes that emerged from the panel discussions. This report should be of interest to officials from law enforcement agencies; legal professionals; members of victim services organizations at the local, state, and federal levels; and policymakers and researchers active in the criminal justice field.

Other RAND research reports from the Priority Criminal Justice Needs Initiative that might be of interest are

- Sean E. Goodison, Robert C. Davis, and Brian A. Jackson, *Digital Evidence and the U.S. Criminal Justice System: Identifying Technology and Other Needs to More Effectively Acquire and Utilize Digital Evidence*, Santa Monica, Calif.: RAND Corporation, RR-890-NIJ, 2015
- Michael J. D. Vermeer, Dulani Woods, and Brian A. Jackson, *Identifying Law Enforcement Needs for Access to Digital Evidence in Remote Data Centers*, Santa Monica, Calif.: RAND Corporation, RR-2240-NIJ, 2018
- Sean E. Goodison, Dulani Woods, Jeremy D. Barnum, Adam R. Kemerer, and Brian A. Jackson, *Identifying Law Enforcement Needs for Conducting Criminal Investigations Involving Evidence on the Dark Web*, Santa Monica, Calif.: RAND Corporation, RR-2704-NIJ, 2019.

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