

Forensic e-Mental Health: Review, Research Priorities, and Policy Directions

Lauren E. Kois, Ph.D.

Assistant Professor, Department of Psychology

Box 870348; University of Alabama; Tuscaloosa, AL; 35487-0348

lekois@ua.edu

Jennifer M. Cox, Ph.D.

Associate Professor, Department of Psychology

Box 870348; University of Alabama; Tuscaloosa, AL; 35487-0348

jennifer.m.cox@ua.edu

Ashley T. Peck, B.A.

Doctoral Student, Department of Psychology

Box 870348; University of Alabama; Tuscaloosa, AL; 35487-0348

atpeck@crimson.ua.edu

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Abstract

Forensic e-mental health is an area of psychology that is relatively underdeveloped considering technological advancements and the many mental health needs of justice-involved individuals. It includes the procurement, storage, sharing, and provision of forensic mental health information and services via electronic means and is associated with improved accessibility, efficiency, cost-savings, and safety. During the COVID-19 pandemic, clinics, hospitals, jails, prisons, and the courts rapidly adopted these modalities for service continuity out of necessity, rather than choice. In the absence of formal guidelines, practitioners, researchers, and policy makers were left searching for answers: what forensic e-mental health technologies are available, what was their research evidence, and what could the future hold? A “primer” covering the many aspects of technology-assisted forensic practice and research was overdue. To address this knowledge gap, we reviewed the e-mental health research base encompassing forensic evaluations and interventions. Considering stakeholders’ needs, cost, and feasibility, we prioritized key topics that should rise to the top of the forensic e-mental health research agenda: the psychometric properties of forensic e-mental health assessments, impact of video recording evaluations, how to assess and treat diverse populations, restoration of competence to proceed, continuum of care, minimizing treatment attrition, and decreasing substance use. We report how to plan for and overcome logistical hurdles when implementing forensic e-mental health policy, utilize technology for training and education, and harness digitized data across the forensic realm. In conclusion, we find that there is ample opportunity for leveraging technology to improve forensic mental health practice, research, and policy.

Keywords: forensic e-mental health, telehealth, telepsychology, forensic evaluation, corrections

Forensic e-Mental Health: Review, Research Priorities, and Policy Directions

In November 2019, COVID-19—the infectious, highly-communicable, and potentially-fatal disease caused by a novel coronavirus—originated in Wuhan, China. Within months its devastating impact had spread worldwide. By April 2020, the United States had the highest number of confirmed COVID-19 cases, and COVID-19 related deaths, in the world (World Health Organization, 2020). Faced with its most significant public health emergency in modern history, virtually all aspects of U.S. healthcare were impacted. The American Psychological Association was quick to provide guidance to mental health practitioners, researchers, and policy makers who faced unprecedented hurdles for conducting their work. Almost immediately, e-mental health (also referred to as “telepsychology”) was the logistical solution put into practice (Liu et al., 2020; Perrin et al., 2020).

E-mental health is the procurement, storage, sharing, and provision of mental health information and services via electronic communication including online databases, telephone, videoconferencing (live, two-way interactions), email, interactive websites, software applications (“apps”), and social media. It can be conducted synchronously (in-the-moment) or asynchronously (training modules, email, etc.) and stand-alone or supplement traditional mental healthcare protocol. It can take place in emergency rooms, outpatient clinics, private practice—virtually any mental health setting acting as a “hub” for services. Dating back to 1959, e-mental health is associated with improved accessibility, flexibility, reduced costs, times savings, decreased self-stigma, and consumer engagement (Cowan et al., 2019; Lal & Adair, 2014; Luxton et al., 2016). From 2010 to 2017, the United States increased *psychiatric* e-mental health (i.e., mental health services, such as medication prescribing and management, provided by medical professionals) in state-run facilities from 15% to 29% (Spivak et al., 2020). Several subspecialties of psychology—most notably, counseling psychology—have built evidence bases

for its practice (Jacobsen & Kohout, 2010; Luxton et al., 2011). Heilbrun and Brooks (2010) set *assessing development and impact of new technologies* as part of a proposed agenda for forensic psychology over 10 years ago, but a decade later, forensic psychology's technology use and exploration lags behind its counterparts.

Regarding COVID-19, jails and prisons became "hot spots" for disease transmission (Williams & Ivory, 2020). Correctional settings make for close quarters, and COVID-19 transmission precautions (e.g., limiting one-on-one interactions, social distancing) are nearly impossible for individuals who are incarcerated. Recognizing the high risk for COVID-19 infection, some correctional institutions put into place protective policies such as prohibiting face-to-face visitation (Federal Bureau of Prisons, 2020), including those for forensic mental health practitioners. This severely limited the judicial system's access to individuals who are incarcerated, and also incarcerated individuals' access to mental health evaluation and treatment.

Technology as applied to court settings is not new. Videoconferencing has long been common between the courts and correctional settings and is a feasible alternative to in-person hearings (Davis et al., 2015). Defendants have reported the same level of satisfaction and collaboration with their attorneys whether they were communicating in-person or over videoconference (McDonald et al., 2016), and mental health experts have testified via videoconference for decades (*U.S. v. Gigante*, 1999).

Psychiatric e-mental health has made significant progress in correctional settings with diverse clientele across the world (Magaletta et al., 1998; Mars et al., 2012; Maruschak et al., 2016; Senanayake et al., 2018; Shore et al., 2008). A systematic review of psychiatric e-mental health videoconferencing services produced 89 studies that cumulatively suggested this service method has reliability and acceptability in forensic settings and the courts, savings in costs and

travel, and enhanced safety and security (Sales et al., 2018). As of 2016, 28 state Department of Corrections systems offered psychiatric e-mental health in conjunction with in-person services (Maruschak et al.). According to North Carolina's prison system, psychiatric e-mental health "has been invaluable in linking providers to incarcerated people housed in remote prisons where it is not feasible to have a provider based on site (p. 356)" (Sheitman & Williams, 2019).

Accessibility is increasingly important, considering approximately 20% of jail inmates across the United States are housed in rural jails, most of which are difficult to reach and do not have on-site treatment providers (Kang-Brown & Subramanian, 2017).

There is sound reasoning for why *forensic* e-mental health is a good option for the evaluation and intervention of justice-involved individuals. Individuals who are incarcerated have higher levels of mental health needs than the general public (Bureau of Justice Statistics, 2017), and are, arguably, among those who need psychological attention the most. They are frequently diagnosed with co-occurring mental health and substance use disorders, and have higher rates of traumatic brain injury, requiring complex treatment approaches (Beaudette & Stewart, 2016; Bronson & Berzofsky, 2017; Kessler et al., 2003; Prins, 2014; Shiroma et al., 2012; Sung et al., 2010). In-vivo and psychiatric e-mental health modalities (such as medication management) are often critical, but frequently insufficient without other forms of mental health intervention such as psychotherapy and coping skills development. Yet the systems put in place to address the needs of justice-involved individuals are often under-resourced and marginalized. In many forensic settings, medication management is the extent of mental health treatment available.

Although the COVID-19 crisis has been unique, it provided impetus for the field to critically examine forensic mental health practice, research, and policy and their relationships

with technology. “Non-clinical” psychology-law colleagues have practice, research, and policy recommendations on technology-focused topics such as body-worn cameras (Lum et al., 2019) and recording interrogations and eyewitness lineups (Fitzgerald et al., 2018; Kassin et al., 2019; Wells et al., 2020). Technology as applied to forensic mental health is a developing area; however, it is still lacking when considering the many mental health needs of justice-involved individuals. What forensic e-mental health research is available? What legal and mental health needs can be sufficiently addressed via forensic e-mental health, and which should be prioritized for research? How can we integrate practice and research into policy, and how can they complement one another? To address these questions, we present evidence and scholarly commentaries on forensic e-mental health evaluation and intervention, which are used to recommend action for research and policy.

Review: Components of Forensic e-Mental Health

Forensic Evaluation

Forensic mental health evaluation is a key component of clinical forensic practice, and includes clinical interview and assessment of specific legal issues (e.g., criminal competencies, mental state at the time of the offense, violence risk). Technology-related research has examined the assessment process and use of electronic collateral sources. By far, the majority of forensic e-mental health research involves one’s competency to proceed.

Competency to Proceed

A 2019 survey of 156 forensic mental health evaluators indicated that approximately 28% had conducted a competency to proceed evaluation via videoconference (Batastini et al.), although this percentage is likely much higher in the aftermath of COVID-19. In one of the first studies to examine standardized evaluations of competence to proceed via videoconference

(Lexcen et al., 2006), researchers administered the *Brief Psychiatric Rating Scale-Anchored Version* (BPRS-V) and the *MacArthur Competence Assessment Tool-Criminal Adjudication* (MacCAT-CA) to a sample of 72 inpatient forensic evaluatees. In the first group, measures were administered by a “local” (in-person) evaluator, while a second, remote evaluator observed and scored administrations over videoconference. In the second group, the remote evaluator administered the measures while the local evaluator observed and scored the measures. In the third group, one local evaluator administered the measures, while a second local evaluator observed and scored only. While the experimental conditions lacked ecological validity, findings demonstrated adequate interrater reliabilities across the evaluator groups, which provided support that remote BPRS-V and MacCAT-CA administration was not a significant departure from local administration, and can potentially serve as a reliable component of evaluating competence to proceed.

A randomized controlled trial of competency evaluations using another tool—the *Georgia Court Competency Test-Mississippi State Hospital* revision (GCCT-MSH)—demonstrated similar results. Manguno-Mire et al. (2007) randomized forensic inpatients to either local or remote videoconference evaluation formats. In the first condition, a primary evaluator administered the GCCT-MSH locally, while a second evaluator scored the measure remotely. In the second condition, the primary evaluator administered the measure remotely, while the second evaluator scored the measure locally. The results were promising, in that GCCT-MHS scores across conditions had impressive ($r \sim .92$) interrater reliabilities. These findings along with Lexcen et al. (2006) are encouraging, but should not be interpreted as full and certain support for remote competency evaluations. Specifically, it should be noted that Lexcen et al. (2006) and Manguno-Mire et al. had limited sample sizes. Further, these studies

examined only one psychometric property: interrater reliability of scores from specific competency measures. Standardized assessment performance reflects only one data point an evaluator may consider when rendering an opinion of a defendant's competency. To date, it remains unclear if the *validity* of evaluators' competency determinations would vary as a function of the evaluation format.

Technology as Collateral Information

Collateral sources are requisite for conducting an informed and thorough forensic evaluation (Heilbrun et al., 2014). Consistent with the broad definition of e-mental health, "googling" clients may be one technological avenue of procuring collateral information related to mental health symptoms and status. Although this practice is generally viewed as a breach of privacy that is unacceptable in "typical" clinical contexts, the rules shift in forensic evaluation, when collateral information is key to prudent practice. Further, additional electronic collateral information, such as recorded *Miranda* waivers, surveillance and bodycam video, email, internet searches, and social media posts, is more readily available for evaluators' considerations as technology has proliferated.

Although forensic mental health scholars have begun to discuss the risks and benefits of internet-derived data (see Batastini & Vitacco, 2020), there has been little empirical investigation into the matter. In a survey of 102 forensic evaluators, 63.7% reported using social media as collateral information, most often in mental state and child custody evaluations (Coffey et al., 2018). In general, evaluators reported that social media information was not as helpful in developing their forensic opinion as were hospital and police records, clinical interview, surveillance tapes, support staff, and family members. Nevertheless, evaluators did indicate that social media could be helpful in corroborating mental illness, assessing mental state, and

determining functional abilities. Interestingly, some evaluators reported using social media (e.g., blogs and podcasts) as data specifically for scoring risk assessment tools. Primary apprehensions over social media use in forensic evaluations included concerns about authenticity, reliability, privacy, consent, and relevance. This small pool of evaluators does not represent the field at large, and evaluators should consider internet-based data as a form of collateral information to be sought on an individual case basis (Pirelli et al., 2016). Prudent evaluators will consult ethical codes, specialty guidelines, and clinical manuals specific to forensic psychology for determining appropriate use before seeking internet-based data (Batastini & Vitacco; Pirelli et al., 2017).

Forensic Intervention

In a 2012 practitioner survey, psychotherapists projected that technology would play a key role in psychotherapy by the year 2020 (Norcross et al., 2013). Indeed, technological capabilities have quickly advanced how practitioners conduct mental health intervention since Smith and Glass's (1977) landmark meta-analysis demonstrating psychotherapy's effectiveness. In fact, enough literature has been produced that e-mental health interventions have also been meta-analyzed, demonstrating that psychotherapy conducted by telephone or videoconference produce results similar to in-person therapeutic exchanges and is feasible for practice (Backhaus et al., 2012; Jenkins-Guarnieri et al., 2015). With the advent of smart phones, self-management mobile applications ("apps") have gained in popularity in general, but also in treatment technology (Linardon et al., 2019). Smartphone apps can track moods and physiological functioning, facilitate skills acquisition, serve as virtual coaches, time-stamp mental health-related "assignments," come pre-programmed with psychoeducation resources and crisis contact information, act as reminders for therapy or other appointments, and provide GPS navigation and monitoring (Luxton et al., 2011).

While general psychotherapy e-mental health has proliferated, forensic e-mental health treatment and intervention has inched behind. This is a missed opportunity. Up to 26% of jail inmates and 14% of prisoners report “serious psychological distress” (Bronson & Berzofsky, 2017), yet jails and prisons often lack mental health professionals who are trained in psychotherapy. Encouragingly, the small body of forensic e-mental health intervention research available appears promising.

A 2016 meta-analysis (Batastini et al.) identified only three empirical between-subject studies published between 2000-2014 specific to e-mental health in correctional settings, and only one (Morgan et al., 2008) focused on psychotherapy intervention. The all-male study, which took place across a general medical center (“hub”) and correctional facility (“remote” site), did not utilize random assignment to treatment conditions (video conference or face-to-face), although the authors noted no marked differences in diagnoses across groups. They found no significant differences in incarcerated individuals’ ratings of working alliance, service engagement, or service satisfaction across conditions. Although this study is an important first step in understanding treatment process, it did not evaluate key outcome variables such as symptom reduction.

Several studies have been published since Batastini et al.’s 2016 meta-analysis, and there are many more pilot and feasibility studies that did not utilize comparison groups or “traditional” correctional samples (see Kip et al., 2018). They have concerned specific treatment populations, such as those in administrative segregation, or specific treatment targets, such as substance use and anger management. We now review these niche interventions.

Administrative Segregation

Following Batastini and colleagues' (2016) meta-analysis, Batastini and Morgan (2016) compared prison inmates in administrative segregation across an in-person cognitive-behavioral therapy (CBT) coping skills group ($n = 12$, limited to two participants per group given administrative issues), a coping skills group conducted via teleconference ($n = 24$, limited to six participants per group), and a no-treatment control group ($n = 13$). Participants were primarily diagnosed with substance use (38.5%) or mood-related disorder (26.5%), and had an average of 1.3 years in segregated housing. Given the research context, participation was voluntary and random assignment was not methodologically feasible. However, the authors did not identify significant differences in age, ethnicity, offense type, or diagnostic considerations across groups. Findings showed no significant group differences across symptom severity, criminogenic thinking, client satisfaction, working alliance, and perceptions of the treatment group. This study is quite promising for hard-to-reach, administratively segregated individuals, who report more anxiety and depression relative to individuals in the general-population (Chadick et al., 2018). However, the sample sizes were small, necessitating additional research to explore the efficacy of tele-interventions with this population.

Community Treatment

Technology in the form of electronic monitoring has been an integral part of community corrections for decades (Nellis, 2016); however, more nuanced, treatment-focused approaches to offender reentry are few and far between. Continuum of care is critical for justice-involved individuals with severe and persistent mental illness in particular, and integrated rehabilitation systems should address their complex needs (Pinals & Fuller, 2020). Justice-involved individuals who are released from correctional facilities and re-enter rural communities may continue to have significant needs but decreased accessibility to mental health care relative to their suburban

and urban counterparts. Forensic e-mental health interventions are potential solutions for treating complex mental health needs and reaching difficult-to-access individuals, such as those who lack transportation, live in rural areas, or are less mobile due to disability or medical vulnerabilities.

One novel program, Sober IPT (Interpersonal Psychotherapy for substance use) aimed to reduce substance use upon community reentry by maintaining continuum of care for justice-involved women with Major Depressive Disorder and co-occurring Substance Use Disorders (Johnson et al., 2015). In this study, women who were incarcerated met with an in-person counselor and attended individual and group therapy for eight weeks prior to their release. At reentry, researchers provided the women mobile “sober phones,” which were pre-programmed to only allow calls to sober resources (e.g., their prison counselor, sober friends and family, and Alcoholics Anonymous) and crisis intervention services. Participants then followed up with their counselor via the sober phone for three months to review goals, address substance use triggers, and receive social support. Participants had good treatment contact and reported the sober phone system was helpful. Although there was no control condition in this study and its sample size was small ($N = 22$), participant feedback allowed the authors to conclude that the continuum of care “pocket case manager” was worthwhile.

Substance Use

Although the evidence bases for forensic-specific e-mental health is quite limited, foundational work on “forensic-adjacent” issues can inform forensic e-mental health practice. Given the high rates of co-occurring mental health and substance use disorders among offender populations, substance use treatment is particularly relevant. E-mental health interventions taking place via internet modules, text messaging, self-managed applications, and social networking can be effective in reducing alcohol use and its related risk-taking behaviors (O'Rourke et al., 2016).

King and colleagues (2009, 2014) utilized in-person treatment comparison groups to evaluate substance use outcomes of an e-mental health intervention. Treatment adherence, substance use, therapeutic alliance, and client satisfaction were similar across groups, although overall participants reported preferring e-mental health due to its increased accessibility. A meta-analysis of e-mental health interventions for individuals with substance use disorders in remission found, when compared to control groups, approximately 57% of e-mental health interventions had positive effects (Nesvåg & McKay, 2018), and similar effects were found for adults with problem drinking (Riper et al., 2018). In another meta-analysis specific to alcohol use, approximately 88% had positive effects on substance use measures following e-mental health intervention (Fowler et al., 2016). Virtual reality environments have also been used in cue-exposure behavioral therapy to reduce substance use cravings (Hone-Blanchet et al., 2014).

Aggression

The Veterans Affairs (VA) system, the largest integrated health system in the United States, has been a pioneer in videoconferencing mental health services and developed at least 20 e-mental health apps (Gould et al., 2019). Among these, several pertain to coping skills development and anger management. A single group, pre- post-test study of the Remote Exercises for Learning Anger and Excitation Management (RELAX) app demonstrated that following the app intervention, veterans showed decreased anger expression and improvements in social functioning (Morland et al., 2016). In a randomized control trial, the six-month Cognitive Applications for Life Management (CALM) app intervention (goal setting and planning along with attention training) was associated with significantly decreased self-reported anger (25%) relative to the control group (8% reduction) among veterans with traumatic brain injury and Posttraumatic Stress Disorder (Elbogen et al., 2019). Further, collateral contacts

reported that CALM participants showed significantly less aggressive behaviors compared to controls. The VA also offers the Veterans Affairs Anger & Irritability Management Skills (AIMS) program (Greene et al., 2014) through online access.

To summarize, forensic e-mental health interventions are in short supply but growing in number. Thus far, only a few studies have examined an intervention's impact using between-subjects and/or randomized controlled trials, making this area fertile ground for future research prior to wide adaptation in treatment settings.

Research Priorities for Forensic e-Mental Health

A clear implication from this literature review is the sheer lack of empirical research regarding forensic e-mental health. Considering many forensic mental health questions will be similar to general e-health (e.g., symptom reduction and management, social and coping skills development), researchers and practitioners may somewhat generalize that literature's nominal findings for use with forensic populations. However, forensic and correctional populations are distinct from the general population and the forensic mental health field is frequently tasked with addressing psycholegal questions which require extensive training and expertise. Thus, it is imperative that researchers do not assume that non-forensic e-mental health research will generalize and, instead, consider the application of technology to this specific sub-discipline. Adding technology to forensic practice without establishing the benefits and understanding the costs could be deleterious. Considering stakeholders' (criminal justice-involved individuals, treatment providers, corrections professionals, policy-makers) needs, cost, and feasibility, we next prioritize key topics that should rise to the top of the forensic e-mental health research agenda.

Validity, Reliability, and Feasibility of Forensic e-Mental Health Evaluations

Arguably, forensic mental health evaluation is the foundation of forensic mental health practice: evaluation findings are often prominent as an individual proceeds through the criminal justice system and influence how supervisory figures and treatment providers determine which interventions, and to which degrees, are suitable. Thus far, the majority of forensic e-mental health evaluation research has focused on the topic of competence to proceed. This is not surprising, given that upwards of 60,000 are conducted each year and the “competency crisis” is a pressing issue (Gowensmith, 2019; Poythress et al., 2002). But there are additional forensic mental health evaluation domains that warrant research investigation. For example, in the Batastini et al. (2019) survey of forensic mental health evaluators, respondents who had experience with videoconference evaluations endorsed conducting violence risk assessment most frequently, followed by competency to proceed, mental state, child custody, and disability evaluations. Assessments of violence risk and mental state can be much more tedious than in-the-moment competency evaluations, given that they typically require lengthier interviews and, when called for, larger assessment batteries. For mental state evaluations in particular, evaluators may inquire about minute details that could be frustrating to seek and answer in the context of video conferencing. Put simply, they most often will require more time and effort than evaluations of competency and may not be the most appropriate for videoconference. Given that practitioners are conducting these evaluations, psycholegal referral questions aside from competency to proceed are important research avenues to follow.

Although we can extrapolate many of the more general videoconferencing literature to forensic contexts, researchers should further examine remote administration of forensic assessment and forensic-relevant instruments, as have researchers studying neuropsychological test administration via videoconference (Brearly et al., 2017). Forensic researchers should focus

on the most commonly-conducted measures as identified by practitioners, such as the *Minnesota Multiphasic Personality Inventory*, *Personality Assessment Inventory*, *HCR-20*, and standardized adjudicative competence measures (Archer et al., 2006; Neal & Grisso, 2014). Several of these measures, such as the MMPI and PAI, are already available via online platforms. They can be administered remotely and securely via screen-sharing technology. Stimuli presentation can be standardized on screen to a significant degree (albeit an examinee's setting can potentially interfere with administration). But clinician-administered tests, including many critical response style measures (e.g., *Miller Forensic Assessment of Symptoms Test*, *Structured Interview of Reported Symptoms*, *Test of Memory Malinger*), allow more room for error given individual differences in administration. Arguably, response style measures have a greater applied range compared to referral-specific (e.g., competency, violence risk) measures and should be situated high on the research agenda, given that assessment of response style is imperative across *all* forensic evaluation contexts (Rogers & Bender, 2020).

Another important area to explore is whether video recording of an evaluation impacts response style. There are benefits and risks to this practice. On one hand, video creates a more complete examination record, can help resolve later confusions or disputes, and refresh forensic evaluators' memories when drawing clinical opinions and preparing for trial (Siegel, 2018; Zonana et al., 1999). On the other, the process of video recording may impact evaluation dynamics and performance (Otto & Krauss, 2009). Nevertheless, some policy makers have moved forward with certain video recording requirements (e.g., Colorado Code of Criminal Procedure, 2017). A survey of evaluators practicing in Colorado indicated that they generally opposed recording evaluations due to technical challenges, confidentiality concerns, potential

misuse, and invalidation of the evaluation (Potts et al. 2018). Before coming to conclusions on this issue, researchers should understand whether video recording produces differing results.

An additional area ripe for research concerns the application of forensic e-mental health with linguistically and culturally diverse populations. Over the last several decades global migration has increased such that the U.S. Census Bureau postulated that immigration will fuel population level demographic changes in the United States (Vespa et al., 2020). Reflecting these immigration trends, approximately 21% of the entire U.S. population speak a language other than English in the home (U.S. Census Bureau, 2020). It is reasonable then, that interpreters are commonly used in forensic practice (Weiss & Rosenfeld, 2012). Despite this, very little research has addressed the impact of language interpretation in forensic evaluation, and these samples were drawn from populations with relatively diverse demographics (Kois et al., 2013; Paradis et al., 2016; Varela et al., 2011) Researchers can consider the impact of in-vivo versus remote interpretation services, as well as baseline accuracy rates for language interpretation. This work is particularly important to ensure reliable and valid exchange of information and ultimately inform best practice as the population continues to diversify.

Somewhat relatedly, researchers should consider the feasibility of forensic e-mental health evaluations with diverse populations. For example, older adults are less likely to report comfort with digital devices and adults living with a physical impairment are less likely to use the internet than those without such impairment (Gitlow, 2014; Zickuhr & Smith, 2013). Further, across the United States there are severe disparities in internet accessibility, with lower income and rural populations less likely to have consistent access (Pew Research, 2019; U.S. Census Bureau, 2018). Researchers should consider if accommodations are appropriate for individuals participating in forensic e-mental health evaluations who experience discomfort with technology

and/or the internet due to unfamiliarity. If any accommodations are implemented, it is imperative to understand how they affect the validity of the evaluation.

Technology-Facilitated Interventions

Competence Restoration

For the last decade, high rates of competency referrals, forensic mental health staff shortages, and various administrative issues have contributed to the length of time defendants await competency evaluation and/or restoration (Gowensmith, 2019). There is a dearth of research on restoration in general (Heilbrun et al., 2019), but restoration facilitated by technology could be an efficient practice by broadcasting restoration instructors to difficult-to-reach defendants (e.g., in rural jails or in the community) or those in understaffed facilities. Another benefit of conducting restoration via asynchronous e-means could ensure that defendants new to competence restoration receive psycholegal instruction in a scaffolded and organized manner, rather than joining a group on a revolving basis. E-administration of competence restoration protocol could also be beneficial for defendants who have special cognitive or language needs (Casas & Leany, 2017). Given that a videoconference approach could reach diverse defendants, it lends itself to outcomes that are more generalizable and research using video modules could enhance fidelity for standardized competency restoration protocols.

Cognitive remediation could be an effective tool for individuals undergoing competence to proceed restoration, who are most often diagnosed with psychotic disorders (Pirelli & Zapf, 2020). There are nuanced neurocognitive components to the competency to proceed criteria outlined in the seminal *Dusky v. United States* (1960) decision: specifically, attention, working memory, and executive functioning. Research indicates that cognitive remediation, typically conducted via computer programs, can improve these functions among individuals with severe

and persistent mental illness (Chan et al., 2015; Medalia et al., 2001; Medalia & Richardson, 2005; Medalia & Saperstein, 2013). It follows that cognitive remediation could also improve neurocognitive functioning among defendants opined Incompetent to Proceed (ITP). This assertion is supported by forensic mental health and neuropsychology theory (Schwalbe & Medalia, 2007; Zapf, 2013), as well as a small pilot study that revealed cognitive remediation can improve *Dusky* reasoning abilities, particularly among individuals diagnosed with schizophrenia (Wilson, 2015).

Community Treatment

As observed by Leifman and Coffey (2015) "...one look at 'treatment as usual' in many communities would suggest that our typical practice of mental health interventions in criminal justice settings has remained stagnant for decades." (p. 20). Community interventions in particular fit directly into an exciting "space" for forensic e-mental health research to flourish. Technology, which can be programmed to vary the level of supervision and intervention intensity and frequency, is an opportunity to match an offender's specific needs to their appropriate level of supervisory and clinical contact. A recent National Institute of Justice collaboration between the RAND Corporation and the University of Denver focused specifically on how stakeholders can use technology to improve community supervision (Russo et al., 2019). Participants identified benefits for individuals under supervision (electronic "check-ins," automated appearance reminders, positive reinforcement for prosocial behavior), as well as benefits for supervisors themselves (automated reminders for appearance dates and workloads, interactive resources that prompt officers about specific issues to address with offenders). They prioritized a research agenda: How best to hold individuals under supervision accountable via technology? Are virtual check-ins effective at reducing failed appearances and other compliance

matters? Which populations are most amenable to e-supervision, and how long should e-monitoring occur? Participants noted that mobile data could lend to validation of “homegrown” risk measures, data mining, and machine learning to identify which interventions and timings are most effective. Ideas such as these can serve as beginning points for researchers interested in community intervention.

Forensic e-mental health applies not just to offenders reentering the community, but also individuals followed by assisted outpatient treatment, drug and mental health diversion courts, and other treatment-intensive community programs. To maintain treatment gains among general (non-forensic) samples, individuals exiting inpatient or residential substance use treatment should have continued care for an average of three to six months (Proctor & Herschman, 2014). Interventions and social support administered via mobile application increases accessibility, and ultimately continuum of care. Recognizing this, the Veterans Health Administration began giving video-enabled tablets with data plans to treatment-seeking individuals who faced barriers to care, such as poor health, lack of transportation, or rural setting (Jacobs et al., 2019). In a retrospective comparison study, Jacobs and colleagues found that the tablet program was associated with improved continuum of care: increased psychotherapy sessions, stronger medication adherence, and fewer missed appointments in general. A second study found that veterans were equally divided in preferring treatment via the tablet program, preferring treatment in-person, or having no preference (Slightam et al., 2020). Despite these promising findings, both studies involved veterans and it is unknown if the beneficial effects of technology application generalize to the forensic population receiving treatment while being monitored in the community. If research establishes similarly positive outcomes with a community-dwelling forensic population, subsequent economic and public health benefits could be consequential.

An additional research priority concerns treatment attrition. Treatment drop-out among forensic populations is a major concern as drop-out can have direct impact on mental health functioning as well as indirect legal impact for individuals under mandated treatment or supervision. In fact, one meta-analysis of 114 treatment programs found that violent offenders who began but did not complete mental health treatment were 10%-23% more likely to recidivate (general, violent, or non-violent) compared to treatment completers (Olver et al., 2011). These findings held regardless of treatment context (institutional or community-based), although community-dwelling individuals who terminated treatment early were most likely to recidivate. The research indicated that psychotic and personality disorder diagnoses, as well as negative treatment attitudes and behaviors, predicted dropout; however, the interventions did not necessarily target treatment engagement nor did they involve e-mental health. CBT-informed anger management intervention attrition was also associated with recidivism in a meta-analysis by Henwood et al. (2015). As such, targeting mental illness and motivation through mobile interventions could increase treatment completion, which could indirectly lead to decreased recidivism rates. Specific to offenders with severe and mental illness, research indicates that timely mental health treatment reduces the likelihood of criminal justice involvement (Constantine et al., 2012). Killikelly et al. (2017), in their systematic review of treatment adherence among individuals with psychosis, found that overall, 83% of participants adhered to web-based and app treatment. While mobile technology may be promising with this treatment group, interventions should go above and beyond treatment linkage and completion, and address criminogenic as well as service needs in order to maximize results (Epperson et al., 2014; Skeem et al., 2014).

Regarding specific psychotherapeutic orientations, cognitive behavior therapy (CBT) has garnered a strong track record with respect to treating justice-involved persons (Antonio & Crossett, 2017; Harrison et al., 2020; Higgs et al., 2018; Mpofu et al., 2018; Olver et al., 2020; Yoon et al., 2017). The Drexel Reentry Project (DRP), developed to address the needs of moderate- to high-risk justice-involved persons at community reentry, uses CBT principles in its multi-step program (Heilbrun et al., 2017). Of note, DRP moved to telehealth in the context of COVID (*Note - COVID-19 Update*, 2020). Data collected from the program's new treatment approach could make exciting contributions to our understanding of forensic e-mental health with justice-involved individuals under supervision.

Substance Use

Substance use intervention is an urgent priority, particularly in the context of the opioid epidemic (Gostin et al., 2017). It is regularly associated with decreased recidivism in addition to decreased relapse (Moore et al., 2018). Probationers with co-occurring mental health and substance use disorders are more likely to recidivate compared to probationers with substance use *or* mental health problems (Balyakina et al., 2014). A meta-analysis of substance use and mental health reentry programs found that access to social support and housing and continuity of caseworker relationships pre- and post-release were predictors of success (Kendall et al., 2018). Another study found that lack of social support was associated with substance use, specifically overdose, among people released from prison (Binswanger et al., 2012). Potentially, CBT and social support facilitated by mobile apps or other e-means could serve as a protective factor against substance use. Kramer Schmidt et al. (2018), who meta-analyzed literature on psychosocial interventions for alcohol use disorder, found that research assessing frequency, rather than intended or actual treatment duration, was associated with abstinence and lighter

drinking. Frequent mobile “check-in” assessments could have a similar effect. Thus far, few substance use interventions have taken a “tech” approach with justice-involved persons.

As of yet, no forensic e-mental health intervention has met the rigor of evidence-based evaluation, let alone one for community-dwelling individuals. A. Batastini (personal communication, April 28, 2020) is extending this line of work by developing an e-therapy app for justice-involved persons in the community. The project is in its developmental stages, with a patent application pending.

Policy Directions

While there is relatively little research on forensic e-mental health, it is nevertheless moving forward. COVID-19 caught much of the field by surprise and practitioners, researchers, and policy makers had to make rapid decisions about how their work should proceed. We find that the time has come to consider implementation of forensic e-mental health on a larger scale, and are firm in the belief that it is far better to be proactive, rather than reactive, in advancing research so that we may best adapt our practice. At the same time, we acknowledge the relative dearth of research necessitates caution when implementing policies without careful consideration of the legal and ethical consequences of embracing forensic e-mental health. The following policy considerations are offered.

Need for Professional Consensus

When the United States began to feel the major effects of COVID-19, psychologists looked to professional organizations, colleagues, test developers, technology experts, and literature on conducting work via e-means. The American Psychological Association referred its community to its pre-existing *General Practice Guidelines for Telepsychology* (Joint Task Force for the Development of Telepsychology Guidelines for Psychologists, 2013) and provided

resources for teaching and research using technology. Subspecialty professional groups have contributed more specific practice recommendations (e.g., the Inter Organizational Practice Committee [IOPC], comprised of members of the American Academy of Clinical Neuropsychology (AACN), Division 40 of the American Psychological Association (APA), the National Academy of Neuropsychology (NAN), the American Board of Professional Neuropsychology (ABN), and the American Psychological Association Services, Inc.). As of yet, the American Psychology-Law Society (AP-LS) and the American Board of Forensic Psychology have not produced official positions on the use of technology in psychology-law. Encouragingly, AP-LS has developed a telehealth task force (J. Groscup, personal communication, May 8, 2020) to develop and promulgate guidelines for the field. Technology is rapidly changing, more quickly than guidelines can be offered by professional organizations (Vitacco et al., 2018). Future guidelines should be broad so as to allow for extrapolation to newly-developed technologies.

Implementing Forensic e-Mental Health

The great task of implementing a new forensic e-mental health system can appear overwhelming, if not daunting. Transitions can actually take place quite quickly: Yellowlees et al. (2020) described how, within three days, the University of California-Davis Health system transitioned to 100% telepsychiatry practice at the beginning of the COVID-19 crisis. Fortunately, numerous colleagues have published guidance on how to build and sustain these infrastructures (Hilty et al., 2015; Hilty et al., 2016; Luxton & Niemi, 2019; Smith et al., 2020). To begin, stakeholders, needs, and target populations must be identified. An “e-health Readiness Assessment” will help stakeholders plan project goals (e.g., is the purpose to conduct intake assessments, psychotherapy, emergency care, and/or research? What technology resources are

already in place, and are they sufficient? What are our cultural and linguistic needs? What disparities can we anticipate?). Funding should be secured to adequately cover the costs of providing services (direct and indirect costs including technology, staff, and supporting materials), reimbursement protocol (when relevant) and continuity of care should be coordinated. Cost sharing across agencies or institutions (clinics, hospitals, corrections, the courts) should be pre-agreed upon, particularly given the fiscal complexities of federal, state, and county budgets. Technology should be specified with encryption networks. All professionals involved should be trained in e-mental health and the system's supervisory and crisis protocols (for instance, what is the chain of command within and across institutions?). Careful documentation of challenges along the way should be part of a feedback loop used to continually improve infrastructure and practice. A review by Edge et al. (2019) is an especially valuable resource for those interested in implementation barriers to forensic e-mental health. "Case studies" on the many ways forensic e-mental health may be implemented are also available (see Batastini et al., 2020; Farabee et al., 2016; Kaftarian, 2019; Luxton & Lexcen, 2018; Magaletta et al., 2000; Miller et al., 2008).

Traditional mental health care models will need to be adapted. Integrated care can be facilitated by *tele-teaming*, that is, communication amongst virtual treatment teams via synchronous or asynchronous electronic means (Waugh et al., 2015). Tele-teaming is well-suited for forensic mental health treatment providers, which can involve groups composed of psychologists, psychiatrists, social workers, primary care providers, probation officers or other community supervision professionals, and so on (Cuddeback et al., 2020; Parker et al., 2018). Tele-teaming models include multi-person treatments/therapies, facility based-settings, where a remote individual of a specific discipline reaches out to a "home base" onsite mental health facility; and primary care models. In their scoping review, Parker et al. identified 12 team models

that addressed forensic mental health, including interdisciplinary teams collaborating on pre-arrest, post-booking, and jail diversion; co-responding (law enforcement and mental health professionals address acute mental health crises simultaneously), information sharing agreements (e.g., sex offender registries), and re-entry programs. Parker and colleagues' review showed rich opportunity for adopting technology across these many aspects of forensic mental health. In the future, we may see a move away from using technology to mimic in-person care, and increased use of artificial intelligence, robotics, metrics and data mining, mobile apps, and virtual reality (Shore, 2019) in workflow and treatment configurations.

Academic and Community-based Partnerships

As noted by Batastini et al. (2018), joint ventures between academic and community-based collaborators as resources can be helpful in implementing forensic e-mental health. There could be mutual needs across the university and forensic mental health community. Academic centers typically have strong information technology infrastructure and their research missions often involve meeting the needs of local communities; therefore, e-mental health, particularly for underserved populations such as individuals in the forensic realm, could fit nicely into their research agendas (Caudill & Sager, 2015). The University of Washington (UW) has implemented academic-community based partnerships specific to psychiatric e-mental health (Kimmel et al., 2019) and a forensic teaching service (Piel et al., 2019). In fact, following the landmark *Trueblood v. State of Washington Department of Human and Social Services* (2015), the 2016 Washington State Legislature directed UW, the state's Department of Social and Health Services, and state psychiatric hospital to develop a forensic teaching service with the goal of facilitating forensic psychiatry services in particular. In Texas, the University of Texas Medical Branch and Texas Tech University Health Services provide all psychiatric services via e-mental

health for individuals incarcerated by the Texas Department of Criminal Justice (Raimer & Stobo, 2004). University-based forensic clinics simultaneously provide valuable training experience and contribution to the community (Heilbrun et al., 2013). A book on the many ways universities can collaborate with criminal justice programming is forthcoming (Heilbrun et al., in press).

There are others' "lessons learned" that should be considered prior to embarking on new forensic e-mental health endeavors. In their reflection on the development of a psychiatry e-mental health program, Ulzen et al. (2013) delineated the successes and challenges of their collaboration between the University of Alabama School of Medicine-Tuscaloosa and a local non-profit mental health clinic. For example, there may be unanticipated changes in leadership or institutional directions, which both have the potential to derail the e-mental health service agenda. The authors emphasized that enthusiasm and project advocacy was critical. In the earlier period of their collaboration, Alabama law indicated that to bill for services, a physician must be present at the hub *and* the remote site—which essentially negates the efficiency and cost savings of e-mental health. The group lobbied state legislature, and a new law was passed that allowed for billing if at least one Medicaid-eligible provider is present at the remote site.

Training and Education

Psychology-law is a fast-growing area of clinical expertise, which can require training and education in assessment, intervention, and research across a range of settings (DeMatteo et al., 2019). Magaletta et al. (2013) surveyed 170 APA-accredited psychology doctoral programs and found that 111 (65%) offered experience in corrections, and a follow-up study showed that intervention comprised the majority of corrections practicum experience (Magaletta et al., 2017). The number of predoctoral psychology internships with correctional or forensic components

have tripled over the last decade (Malesky & Croysdale, 2009; Potts et al., 2020). Forensic e-mental health provides a novel avenue for training and supervising students interested in this career trajectory. For example, trainees and supervisors can remotely co-conduct forensic evaluations via three-way videoconference (M. A. Conroy, personal communication, May 15, 2020) and remote live supervision (i.e., the “bug in the ear” method of supervision) has long been an option (Rousmaniere, 2014). Interested readers can refer to McCord et al. (2015), who detailed their training protocol specific to counseling psychology doctoral students at Texas A&M University’s Telehealth Counseling Clinic. Psychiatry colleagues (Saeed et al., 2017) have also provided 12 guidelines for graduate medical education in telepsychiatry, including awareness of the remote location’s resources (e.g., local emergency room and coordinated care colleagues), understanding the laws and ethics related to e-mental health, recognizing when e-mental health practice is appropriate for a particular client, and considering issues of test integrity.

Of course, training and education do not conclude with graduation. The University of New Mexico (UNM) School of Medicine’s Law and Mental Health Lecture Series has offered free, weekly, one-hour continuing education (CE) credit sessions since 2018 on psychology-law topics via Zoom videoconference, and plans to continue this opportunity indefinitely (J. Brovko, personal communication, May 8, 2020). This is a generous online service afforded to the forensic practitioner community and serves as a model that can be replicated by other academic, clinical, and correctional institutions throughout the country. The *Standards and Criteria for Approval of Sponsors of Continuing Education for Psychologists* (APA, 2015) indicates that there are no fees for offering and granting CE credits; rather, CE “sponsors” must meet criteria outlined therein (see <https://www.apa.org/about/policy/approval-standards.pdf>). For practitioners in search of in-

depth training on forensic topics, ConceptCE at Palo Alto University (<https://concept.paloalto.edu/>) offers a host of synchronous and asynchronous continuing education training opportunities, ranging from one to 60-hour CE courses.

Make Data Accessible for Researchers and Policy-Makers

A remarkable benefit of e-mental health is that in many cases, data can be automatically populated into electronic records and exported for statistical analyses. This offers exciting prospects for research across the Sequential Intercept Model (SIM), that is, the many points individuals may enter or delve deeper into the criminal justice system and their opportunities for intervention (Munetz & Griffin, 2006). At the individual-evaluator level, several sources recommend evaluators track referral sources, case characteristics, and penultimate psycholegal opinions in a personal database (Dror & Murrie, 2018; Gowensmith & McCallum, 2019; Guarnera et al., 2017). Gowensmith (2019) expanded this idea when developing the mobile phone application *Case Rate* (www.caserate.org), in which evaluators can input a variety of variables, calculate caseload-wide descriptive statistics, and compare their own case details to colleagues' through its crowd-sourced data function. The app simplifies database maintenance given its mobile accessibility and is a novel usage of technology for data procurement, storage, and sharing, as well as monitoring potential evaluation biases.

While criminal justice has a number of nation-wide databases housing policing, correctional, and victimization statistics, there is little available specific to forensic mental health aside from specialty court data. We advocate for the development of forensic-specific electronic databases, developed for quality assurance and improvement rather than for specific research projects. This effort has been in place at the University of Virginia via its long-standing Forensic Evaluation Information System (FEIS; Murrie et al., 2020; Warren et al., 1991) and more recent

Custom Application Consulting Service (CACS; Warren, 2018). CACS consists of case management software specific to juvenile adjudicative competence. The paperless system allows for analysis of real-time service delivery data, calendar alerts for impending court deadlines, a streamlined progress note system, a searchable database for finding case-relevant data, management of billing and program costs, and production of administrative summary reports. Like Case Rate, CACS is moving toward a mobile phone app interface (Kois et al., 2019). More recent efforts include Quality Assurance and Quality Improvement databases such as the Alabama Forensic Assessment and Research Evaluation (FARE) Project (Kois & Cox, 2020) and the patient research database at Massachusetts' Bridgewater State Hospital (Fairfax-Columbo et al., 2020). These state-level projects are encouraging; however, bringing together *national* data through organized means will help us better understand epidemiology of mental health and criminogenic factors among forensic populations, as well as how to mitigate these factors.

Researchers and policy-makers should understand issues around confidentiality and privacy prior to data-sharing, as various entities (e.g., law enforcement, versus corrections, versus forensic hospitals) have very different HIPAA obligations (Petrila et al., 2015). Further, prior to practicing any form of e-mental health which includes the collection of client data, governing bodies should clearly outline data sharing and storage requirements. This includes directions for practitioners and researchers regarding efforts to protect against cyber-security attacks. It is promising that many licensing boards and professional organizations (e.g., APA) already offer guidance on data protection within cyberinfrastructure. However, considering technology and its application to the mental health field is constantly evolving, policy makers should remain diligent in updating data security recommendations and requirements.

Barriers

Implementing forensic e-mental health is easier said than done. The initial and most crucial hurdle is obtaining stakeholder buy-in. Although research consistently shows that e-mental health consumers perceive it as acceptable and feasible, practitioners tend to rate lower overall satisfaction with e-mental health relative to in-person format. A survey of substance use treatment providers found that nearly half were concerned that their *staff* would not accept the implementation of e-mental health use through mobile apps, phone, text message, instant message, videoconference, or web-based modules, but suspected that only one-fifth of *clients* would not accept these e-interventions (Faragher et al., 2018). In their study of videoconference MacCAT-CA administration, Manguno-Mire et al. (2007) found that practitioners reported technological difficulties (i.e., Wi-Fi connectivity, audio/verbal lag, poor feedback and audiovisual quality) as the most problematic issues. A survey of forensic practitioners noted ethical and legal concerns along with limitations in conducting psychological assessments via videoconference as most problematic (Batastini et al., 2019).

If and when the time comes, large scale implementation of forensic e-mental health will require a significant culture shift within the scientific and clinical fields, as well as within institutions (i.e., psychiatric hospitals, correctional facilities, community supervision offices) that are, historically, slow to evolve. Eventual forensic e-mental health implementation will also require the support of state and local legislators who allocate funds for community mental health and correctional services. For institutions and organizations, forensic e-mental health would require significant upfront costs, which will take time to recoup. For example, Rappaport et al., (2018) examined the cost-savings of implementing telehealth (with a focus on primary and emergent care) throughout Maryland's Department of Corrections and found that it took

approximately 32 months for the program to regain its initial investment (\$1.2 million). Despite this, there are reports of programs and institutions that have successfully lobbied for this support. For example, the mental health court/jail diversion system between Rikers Island and New York City Diversion Courts conducts virtually all violence risk assessments via videoconference (M. Rotter, personal communication, April 28, 2020). Of note, W. N. Gowensmith and D. Murrie (personal communication, May 9, 2020) reported that colleagues from Colorado's Office of Behavioral Health secured funds for videoconference technology (including video-enabled mobile phones) for Colorado defendants undergoing inpatient and outpatient restoration in the context of COVID-19.

We acknowledge forensic institutions are grossly under resourced and underfunded (Pinals, 2014), and the downward trajectory of funding for public mental health resources is unlikely to rebound given the near global economic devastation associated with COVID-19. We acknowledge financially struggling systems may have difficulty implementing programs requiring substantial upfront costs, particularly without assistance from local, state, and federal governments. Further, the cost-effectiveness of e-mental health programs is variable (Lal & Adair, 2014) and largely depends on the quality and extensiveness of implementation. When considering these financial barriers, institutions should consider whether the end result justifies the (costly) means, and what e-mental health program will be most efficacious given the priorities of the unit and the population being served.

For practitioners working outside of a government funded system, the length of time needed to recoup the initial costs may be infeasible. Perhaps not surprisingly, practitioners have reported reimbursement as a reason for not adopting e-mental health in the past (Fragher et al., 2018). It is possible these practitioners may find value in "teaming up" with other practitioners to

share initial costs, as some do when buying materials and renting space for private practice.

Despite the initial financial considerations, within a short period of time, forensic e-mental health can result in quantifiable, organizational-level cost saving, as well as less tangible improvement in public safety (Rappaport et al., 2018).

A number of ethical considerations should be noted. It is critical to determine whether e-mental health is appropriate on an individual case basis, that is, according to the practitioner's skill and the validity and reliability of the technology-assisted technique as applied to a given examinee (American Psychological Association, 2013; 2017). Practitioners should reference relevant ethical codes to guide this decision-making process. During this unprecedented pandemic, emergency services are acceptable and encouraged; however, moving forward, it is imperative that advancements in practice and policy are proactive, evidence-based, and intentional rather than reactive.

A final consideration is the differential access to the technological resources necessary for implementation. Recently highlighted by many school systems' sudden transition to online education due to COVID-19 (Hall et al., 2020), across the country differential access to reliable internet and digital devices exacerbates preexisting gaps between socioeconomic classes and largely impacts people of color and rural communities (Pew Research Center, 2019). If the cost of participation in forensic e-mental health is placed largely on the consumer, it is possible financial barriers could subsequently impair treatment performance. Relatedly, forensic e-mental health may not be appropriate for certain populations, such as older adults who are less likely to be tech-savvy. As the field increasingly adopts this approach, it is imperative that policy makers, researchers, and clinicians consider accessibility and affordability (see Luxton et al., 2016).

Conclusion

Thus far, forensic psychology falls steps behind the technological advancements of our medical, psychiatry, and counseling psychology colleagues. Research to date is largely focused on forensic e-mental health evaluation, specifically competency to proceed, and correctional interventions. There is ample opportunity to explore how technology can improve other evaluation and intervention practices. The world of technology is too vast for one manuscript to cover every technological innovation that could be applied to forensic mental health. We did not report every study, nor did we address every area of forensic e-mental health that could benefit from technological means. Rather than a systematic review, this article is a beginning point for forensic mental health practitioners, researchers, and policy makers to gain exposure to which technologies are available, their evidence base, and what they may expect in the future.

Necessity is the mother of invention. The COVID-19 pandemic presented unexpected changes to forensic mental health practice, research, and policy; however, it also has allowed for unparalleled advancements in how the forensic mental health field can leverage technology. Given its ease, accessibility, and widespread use during COVID-19, it is likely that forensic e-mental health will persist in many practice, research, and policy contexts once there is a (relative) “return to normal.” It is our hope that the COVID-19-necessitated technology zeitgeist provides impetus for exciting innovations in the field of forensic psychology.

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