

Findings of the Viability Study Telemedicine

(FY2018 Appropriation Act - Public Act 107 of 2017)

January 1, 2018

Sec. 943. The department shall study the viability of using telemedicine to perform competency examinations by a forensic psychiatrist. By January 1 of the current fiscal year, the department shall report to the senate and house appropriations subcommittees on the department budget, the senate and house fiscal agencies, and the state budget office on the findings of the viability study, the total transportation costs by county for the previous fiscal year, and any savings, by county, from the use of telemedicine.



Michigan Department of
Health & Human Services

RICK SNYDER, GOVERNOR
NICK LYON, DIRECTOR

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This addresses the viability of using videoconferencing technology (in this report referred to as “telemedicine”) to conduct forensic evaluations of competency to stand trial and criminal responsibility; total transportation costs by county for the conducting of competency examinations for Fiscal Year (FY) 2017; and any savings, by county, from the use of telemedicine.

Executive Summary

Competency evaluations are utilized in criminal cases when questions are raised as to whether a defendant is able to assist in his criminal defense. Deficits in competency often are due to mental illness and/or cognitive impairments. This report addresses key questions regarding the current practice in Michigan of transporting adult defendants for whom competency has been raised in their criminal case to the Center for Forensic Psychiatry (CFP).

The following is a summary of this report’s findings and recommended considerations:

- Competency evaluations are separate and distinct from the provision of clinical treatment, and multiple parties are involved (i.e., defense counsel, prosecution, judge) besides the evaluator in determining the utility and admissibility of any particular evaluation.
- The total FY 2017 transportation costs by county for competency evaluations ranged from \$0 to approximately \$55,000, depending on the number of competency evaluation referrals each county generated, distance between the county jail and the CFP or designated evaluation location, officer salary rates, and other factors.
- An estimate of the cost of establishing and maintaining telemedicine-based competency evaluations at the CFP and remote county jail sites suggests that such an investment would provide no significant cost-savings per county. Even in counties that currently expend the most resources to transport defendants for competency evaluations, it would be more cost effective for these counties and for the State of Michigan to either continue evaluation services as currently provided or to expand or re-distribute evaluation locations.
- There are technical, forensic assessment, and legal/ethical considerations involved in establishing a telemedicine-based competency evaluation system. Currently available information suggests that the use of telemedicine to conduct competency to stand trial and/or criminal responsibility evaluations in Michigan is not yet generally accepted and raises logistical, forensic/clinical and legal questions that would need to be addressed. As such, the use of telemedicine for competency evaluations as a cost-saving measure runs the risk of setting up a system in which defendants will still require in-person evaluations, potentially defeating any cost saving measures it was designed to achieve.

Sources of Information and Background

In preparing this report, we relied on information gathered from the following:

- 1) Cost information obtained from four county sheriff departments to help estimate transportation costs incurred by counties.
- 2) A review of the academic and professional literature specifically focused on telemedicine usage in forensic evaluation contexts. We did not focus on the well-established robust literature on the use of telemedicine in clinical treatment practices.
- 3) A survey of practicing forensic psychologists across the country.
- 4) A review of information from our (CFP) databases regarding defendants from Michigan’s 83 counties referred for competency evaluations.

Two points are noteworthy as a preface regarding our review of the academic literature and as it relates to practice in Michigan:

First, several studies and policy papers have documented the usefulness of telemedicine in providing general mental health treatment to specific populations (e.g. Hulsbosch et al., 2017; Lauckner & Whitten, 2016), noting at least comparable efficacy compared to face-to-face treatment and reasonable rates of patient satisfaction. We recognize that telemedicine is being utilized successfully and promoted on a widespread basis in Michigan and across the country in clinical settings. In Michigan alone it is being used and promoted for a variety of reasons from a policy and clinical standpoint to facilitate access to care in rural settings, to improve clinical access where there are clinician shortages (e.g., consultation to improve child psychiatry access, consultation to improve access to care provision for Opioid Use Disorder treatment) and to promote care delivery in other circumstances (e.g. in certain clinical outpatient settings, crisis/emergency rooms, and Department of Corrections sites).

Second, although used and written about robustly in clinical situations, a search of the academic literature on the use of telemedicine in *forensic mental health evaluations* revealed few articles. From a policy perspective we are aware of at least three states that are in the early stages of examining the use of telemedicine for forensic evaluations and testimony, and as noted below additional courts have accepted its use on a case by case basis. These states are working through many challenges including the need for judges, defense attorneys and prosecutors to be accepting of this practice and the findings generated from it, else defendants would require a follow up in-person evaluation, further delaying criminal proceedings and ultimately defeating the purpose of any cost-savings effort from telemedicine implementation. It is also noteworthy that other states have setups vastly different from Michigan's in terms of access to evaluators through the CFP in adult competency cases. Thus, practices across jurisdictions are informative for lessons learned, but each state's evaluation practices warrant separate study for viability of the use of telemedicine for adult competency cases.

This report focuses particularly on the clinical and financial elements of competency evaluations. To truly assess viability, other stakeholders would need to weigh in, including sheriffs, courts, defense counsel, defendants, and prosecutors, to understand risks and benefits and develop protocols that could be accepted in court processes. This report is thus only a partial analysis of aspects of this practice.

Section 943 uses the term "telemedicine;" however there is a lack of consistency in the literature on which term to use (e.g. telemedicine, telemental health, telepsychiatry, telepsychology, videoconferencing, etc.). For purposes of this report, we will use the abbreviation "TM," but individual articles may have used other terms and the nomenclature is arbitrary. We also note the Public Health Code has its own definitions and thus we are focused in this report not on statutory definition but on a practical term to respond to the study request of the legislature.

From our review of the academic literature on forensic examinations via TM, only two articles specifically analyzed the use of TM in completing *portions* of competency evaluations. Neither of these studies rigorously controlled for internal and external validity of the findings, a limitation acknowledged by both study authors. Furthermore, both articles only analyzed the use of specific competency instruments (i.e. the Georgia Court Competency Test, and the MacArthur Competency Assessment Test-CA). Each of these instruments is intended to be used as only one part of a comprehensive evaluation of competency to stand trial. The reports did not include an analysis of the systemic admissibility of TM in the ultimate court cases.

While Section 943 specifically mentions using TM to conduct evaluations of competency to stand trial, it should be emphasized that in Michigan, the current practice includes the

assessment of competency and criminal responsibility during shared evaluation sessions. Thus, for only competency evaluations to be conducted by TM, a change of practice would be necessitated that would separate out the evaluation of criminal responsibility per defendant. Alternatively, consideration of the viability of the use of TM could consider the inclusion of criminal responsibility evaluations. That stated, we were unable to locate any academic literature that specifically addressed the use of TM for criminal responsibility evaluations. The legal issues surrounding TM-based criminal responsibility evaluations would be similar but would need to be separately addressed in subsequent court proceedings.

Considerations Regarding Use of TM for Forensic Evaluations in Michigan

The following is a summary of specific technical, forensic assessment, and legal/ethical considerations related to the use of TM for forensic evaluations in Michigan.

Technical Considerations

As a brief preface, TM evaluations consist of at least two sites: a “hub site,” which in our case would be the Center for Forensic Psychiatry (CFP) building, where evaluators conduct the interview and operate technical equipment; and a “remote site,” a location where defendants would be interviewed using the technology. Both the hub site and remote site require, at a minimum, a video camera, a microphone, a monitor, and a speaker. The two sites are connected to one another through hardware and software that must meet minimum requirements. Academic researchers have noted that low quality TM systems lead to a potential for poor outcomes (Richardson et. al., 2009), and establishment of the appropriate technological support would be required. For this, much can be learned from clinical applications of telemedicine practices already in use.

Various articles have discussed the importance of the type of environment that is needed to conduct TM evaluations. Included in the set up would be appropriate room designations, camera quality and flexibility to allow for zooming features, microphone quality, and privacy standards for the transmission of information.

The type of connection that is created between the hub and remote site must meet stringent technical requirements. Court-ordered evaluations require unique privacy standards, separate and distinct from doctor-patient privacy standards noted in HIPAA, 42 CFR Part 2 or state standards. However, privacy of forensic information is critical; HIPAA-compliant encryption standards such as virtual private networks (VPNs) exist, but can slow down connection speeds or the quality of the data being transmitted unless technological components are of even higher quality. Many of the reviewed articles detail specific types of connections, ranging from satellite connections to dedicated T1 lines and Ethernet lines. It is outside the scope of this memo to determine if all counties have access to the technology that would be required for TM-based forensic evaluations. However, it is our understanding that many counties in Michigan, especially in the Upper Peninsula, do not have reliable access to privacy-enabling high-speed internet services, and such would be needed for proper transmission for TM purposes.

Another critical consideration, especially as it relates to cost factors and training, is the staffing at the remote site. Most, if not all, of the reviewed TM studies were conducted or predicated on the idea that the remote site had both technical and clinical staff present with the defendant being evaluated at the remote site. In one study, a “telehealth coordinator” was present at each remote site to explain the process and manage logistics. The coordinator was present during the entire evaluation to operate any equipment. The coordinator spent time preparing the defendant for interaction and coaching the defendant on the technical limitations of the TM system (Magaletta et. al. 2000). One study had a treating psychiatrist on site introducing TM procedures prior to competency evaluation. A clinical staff member at the location of the

remote site is also necessary, as the defendant's smell and "restless legs under the desk" or other motor movements can be lost in TM. Any system would need a person at the remote site to provide descriptions regarding these observations (Khalifa et al. 2008). Having an individual at the remote site to manage the logistics of the evaluation would be part of the cost needs. Whether that individual would be clinical or technical support would need to be sorted out in protocols. Should there be a clinical support person at the remote site, then training of that individual on the distinctions between clinical and forensic evaluations would be critical. If observations are made at the remote site that are not visible at the hub site, or if information was conveyed that raised questions regarding legal admissibility, the defendant may need to be re-assessed in person if these observations are relevant to the competency evaluation.

Forensic Assessment Considerations

Reviewed academic literature also discussed the various clinical and forensic considerations of using TM. The available literature unanimously supports the notion that any TM interaction is distinctly dissimilar from traditional face-to-face interactions (Adjorlolo et al., 2015). Several studies indicated that only specific patient populations are recommended for TM services and that TM would either be contraindicated for other populations or has not been adequately studied in these populations (Batastini et al., 2013). Participants in one study were only selected if they were able to provide written consent, had no unit restrictions, were at low risk for severe violence or elopement, and had a non-murder offense (Manguno-Mire et al. 2007). Given the population of defendants referred to the CFP, this would substantially limit the use of TM if such guidelines were followed. Another study found that individuals from rural communities may respond differently to TM as a result of different levels of exposure to technology (Richardson et al. 2009). Given that many of the counties that would potentially benefit from the CFP using TM technology are predominantly rural, this finding is particularly important. Many other populations simply have not been the subject of empirical study using TM services. Very little TM research has been conducted with cultural minorities (Richardson et al. 2009). Furthermore, very little data has been collected on TM with older adults, who are generally less familiar with technology and may have other impairments that preclude TM evaluations (e.g. hearing/sight problems). Finally, no reviewed literature discussed technical, clinical, or ethical/legal implications of the use of language interpreters with TM services. A report titled "Study of State Trial Courts' Use of Remote Technology," commissioned by the National Association of Presiding Judges and Court Executive Officers (NAPCO), although highlighting some promising practices via use of technology in aspects of court proceedings, found no cases specifically addressing the permissibility or impermissibility of the use of translators via remote technology (Bridenback, 2016).

The available literature also discussed methods and approaches to providing TM evaluations and treatment. The literature supported the notion of both the patient and clinician being familiar with the technology and TM procedures prior to beginning the interaction. One article (Magaletta et al. 2000) recommended "limiting charged topics" when using TM services, another condition that would preclude forensic examinations. The same article recommended that clinicians be trained to have greater awareness with volatile patients and ensure that these patients are finished speaking before beginning. On a positive note, limited research has suggested that patients with thought disorders and anxiety disorders do not report less satisfaction with TM interactions as a whole. However, similar rates of patient satisfaction may not equate to similar rates of clinical/forensic utility or external validity. A face-to-face evaluation prior to use of telepsychiatry services is generally recommended (Miller et al., 2005). This recommendation for an initial face-to-face evaluation would not be feasible if the purpose of the use of TM is to replace the need for a face-to-face evaluation. However, there is also no need to establish a long-lasting "doctor-patient" relationship in a forensic evaluation context, so an initial face-to-face evaluation may not be as imperative as in a clinical/treatment context.

The available literature also discusses the importance of specific policies and procedures that require implementation at the remote site prior to using TM services. Any TM system must have extensive plans and procedures for handling self-harm or violence risk with patients (Khalifa et al. 2008). These plans would necessarily include the remote site having clinical staff immediately available to de-escalate an aggressive or self-harming patient as well as security staff to physically manage the patient in an emergency. The hub site and remote site would also need a separate, independent, and immediate connection to one another in the event of a technological failure that would allow staff between the two sites to communicate.

A large number of defendants evaluated by CFP examiners also receive psychological testing as part of the examination. Some tests have been validated using TM technology, with the clinician at the hub site administering tests that only require oral communication between the two parties. However, a majority of the tests routinely used by CFP and other forensic examiners have not been validated for remote administration or would be impossible to administer remotely given the tasks required of the examinee. Policies and procedures would need to be developed at each remote site to allow a licensed and credentialed clinician to administer psychological tests as needed. Having non-licensed and non-CFP staff present at the remote site would raise confidentiality concerns (Khalifa et al. 2008).

Training would be needed to facilitate examiner comfort with such technology, as early studies indicated examiner willingness to use the technology as a major barrier to its use (Khalifa 2008), although the Khalifa (2008) study was conducted with ten less years of TM experience than is currently the case. Again, training would need to include education on all features and functions of the system (Miller et al., 2005). Any CFP examiner participating in TM evaluations would need to be extensively trained both on the technical details of the TM system as well as the extensive policies and procedures for conducting TM evaluations. All CFP staff (including Evaluation Services leadership) would also need extensive training on the clinical and practical differences between traditional and TM evaluations and the empirically-supported applications to TM evaluations. According to Batastini et al. (2013), “the current knowledge base does not fully support the frequency and breadth of TMH (tele-mental health) uses among this population. More progress needs to be made in the way of understanding the conditions in which (TM) will be most effective as a method of service delivery and establishing uniform best practice guidelines that safeguard against misuse, intentional or unintentional...The advancement of (TM) in criminal justice settings is contingent upon the availability of rigorous, empirical investigations and the establishment of high-quality, professional training opportunities—both of which are noticeably absent from the available literature.”

Legal/Ethical Considerations

We offer the following forensic-specific considerations regarding this proposal that are based on legal issues. Of primary concern regarding TM evaluations are the Michigan Rules of Evidence and relevant case law. *US. v. Baker*, 45 F.3d 837 (4th Cir. 1995) found that TM interviews did not violate due process (Manguno-Mire et al. 2007). However, the *Baker* decision would not be binding in a Michigan jurisdiction. We are not aware of any binding precedent regarding the admissibility of reports generated through TM evaluations. Any consideration made for the legal admissibility of reports should consider *Daubert* criteria (*Daubert v. Merrill Dow Pharmaceuticals*, U.S. Supreme Court, 1993), which include (among others) whether the techniques employed by the expert are generally accepted in the scientific community, whether it has been subjected to peer review and research, and whether the known or potential error rate is acceptable.

Given the paucity of research regarding comprehensive TM evaluations of competency and the apparent absence of any academic literature on criminal responsibility evaluations using TM methods, it is unclear if such evaluations would meet *Daubert* criteria to a particular trier of fact.

The Michigan Rules of Evidence (Rule 702), with a corresponding Federal Rule, indicate, in part, that any expert testimony is “the product of reliable principles and methods.” Specifically, regarding the “generally accepted” criteria of the *Daubert* standard, this question would likely be subject to further scrutiny.

A national survey conducted by the National Association of Presiding Judges and Court Executive Officers (NAPCO) (Bridenbeck, 2016) found that some courts in Florida and New Jersey were permitting competency evaluations at the “discretion of the doctor.” The same report indicated there is “no specific case law, rules, or statutes regarding doctors conducting competency evaluations of prison/jail inmates via videoconferencing.” The report indicated that Indiana allowed mental health evaluations to occur using TM; however, “the evaluations taken under these conditions are not allowed to be used to determine competency to stand trial or to establish a defense” (p. 8).

A member of the CFP Evaluation Services leadership team, Candyce Shields, Ph.D., ABPP, requested input from board-certified forensic psychologists in most U.S. states. Although this group is not representative of public sector evaluators for competency to stand trial, this group is considered highly trained in the nuances and technical aspects of forensic evaluation work in civil and criminal contexts. Dr. Shields received considerable feedback from her request. In that context, three psychologists out of 30 (10%) reported using or knowing others who had used TM technology to complete an evaluation of competency to stand trial; in each of these cases, however, the evaluation circumstances were distinct from the public evaluation context of the CFP. It is our understanding that decisions regarding the reliability of principles and methods, or the admissibility of evaluations conducted via TM, would be the determination of the trier of fact (i.e., judge or jury) in a specific case.

Another complicating matter regarding CFP evaluations is the possibility of independent medical evaluations (IMEs) conducted on the same defendant. In such cases, triers of fact may be biased toward a specific evaluation method (TM versus face-to-face). The available literature unanimously indicates that TM evaluations are distinct from face-to-face evaluations in many critical ways (Adjorlolo et. al., 2015). No legislation or case law has addressed the dilemma that would occur if one evaluation was completed using TM technology while an IME was conducted in a traditional manner. It should also be noted that delays in court proceedings would be needed should an evaluation using TM technology be questioned and a subsequent face-to-face evaluation ordered.

Of note, the reviewed literature suggests that many courts use videoconferencing to efficiently conduct various aspects of court business, including arraignments, pretrial hearings, and expert testimony in competency hearings (Bridenbeck, 2016). However, use of such technology specifically for conducting evaluations of competency to stand trial or criminal responsibility is a distinct and unique task separate from the aforementioned court procedures. Many prior court decisions have held that forensic mental health examinations are unique from other judicial hearings or procedures [*Estelle v. Smith*, 451 U.S. 454, 101 S.Ct. 1866 (1981); *Commonwealth v. Banks* 943 A.2d 230 (2007); *United States v. Trapnell*, 495 F.2d 22, 24-25 (2d Cir.)].

The above information suggests that TM is not yet generally employed for competency or criminal responsibility evaluations, and although TM may show some promise in particular circumstances, it is not yet feasible or practical for conducting such evaluations on a regular basis in Michigan.

Michigan legislation also identifies the accepted procedures for conducting competency to stand trial and criminal responsibility evaluations. The Michigan Mental Health Code, Section 1026 indicates that the court “shall order a defendant to undergo an examination by personnel of

either the Center for Forensic Psychiatry or other facility officially certified...” The Michigan Code of Criminal Procedure Act 175 of 1927, Section 768.20a also states that a court “shall order the defendant to undergo an examination relating to his or her claim of insanity by personnel of the center for forensic psychiatry or by other qualified personnel...” In each case, the word “examination” may be of particular importance and would need to be clarified by appropriate governmental officials to determine if the use of TM would still qualify as an “examination.”

Aside from legal standards, the vast majority of evaluators are licensed psychologists and psychiatrists who are expected to abide by ethical and forensic specialty guidelines outlined by their professional associations. For psychologists, for example, the American Psychological Association specifies that each psychologist is expected to weigh individual circumstances and their own competencies when determining a proper and ethical course of action. Therefore, different examiners may come to unique conclusions regarding the ethics of using TM. The American Psychological Association publishes Ethical Principles of Psychologists and Code of Conduct (APA, 2016) which provides principles and ethical standards for psychologists. Ethical standards that may be of particular importance include: 1.03: Conflicts Between Ethics and Organizational Demands; 2.01: Boundaries of Competence; 2.04: Bases for Scientific and Professional Judgments; 3.10: Informed Consent; 3.11: Psychological Services Delivered to or Through Organizations; 4.01: Maintaining Confidentiality; 4.05: Disclosures; 9.02: Use of Assessments; and 9.06: Interpreting Assessment Results. Forensic Specialty Guidelines (APA, 2012) that may be of particular importance include, but are not limited to: Guideline 1.01: Integrity; Guideline 2.02: Gaining and Maintaining Competence; Guideline 2.03: Representing Competencies; Guideline 2.04: Knowledge of the Legal System and the Legal Rights of Individuals; Guideline 2.05: Knowledge of the Scientific Foundation for Opinions and Testimony; Guideline 3.01: Provision of Services; Guideline 3.03: Communication; Guideline 4.03: Provision of Emergency Mental Health Services to Forensic Examinees; Guideline 6.02: Communication with Those Seeking to Retain a Forensic Practitioner; Guideline 6.03: Communication with Forensic Examinees; Guideline 7.02: Conflicts with Organizational Demands; Guideline 9.01: Use of Appropriate Methods; Guideline 9.03: Opinions Regarding Persons Not Examined; Guideline 10.02: Selection and Use of Assessment Procedures; Guideline 10.03: Appreciation of Individual Differences; and Guideline 10.04: Consideration of Assessment Settings.

In summary, use of a TM system for competency evaluations would require meeting technical (e.g. encryption, screen size, microphone sensitivity, speaker volume and control, camera quality and remote control, kilobytes per second, frames per second, signal reliability), clinical (e.g. providing face-to-face screening for TM suitability, consideration of symptoms, age, cultural/linguistic background, familiarity with technology), and legal/ethical requirements. Currently available information suggests that TM for evaluations of competency to stand trial and/or criminal responsibility is not yet regularly used. As such, using TM methods to conduct competency to stand trial and/or criminal responsibility evaluations might be a promising practice but in Michigan it is not yet viable or practical as a measure to improve current practices or access to services.

Transportation Costs by County for Fiscal Year 2017

To best estimate the total transportation costs by county associated with competency evaluations, the CFP analyzed the number of unique “trips” from individual county jails to the CFP or other designated location and back to the jails. The CFP currently operates satellite locations at the Wayne County Jail, Kent County Jail, Grand Traverse County Jail, and a county correctional facility in Marquette. More than half of all counties are served primarily at a satellite facility. The CFP estimated the number of trips from each county based on several database reports. Of note, individual trips are not necessarily equivalent to the number of orders received or the number of defendants examined for evaluations. Most defendants are

evaluated pursuant to more than one court order, with approximately two orders per defendant on average. Furthermore, 35-40% of all defendants evaluated by the CFP are on bond at the time of their evaluation, and as such are responsible for their own travel and incur no cost to the county. Moreover, a sizeable percentage of incarcerated defendants are evaluated without any transportation required from county jails (due to being at satellite locations where CFP examiners travel to conduct evaluations). Specifically, defendants housed at the Kent County Jail, Grand Traverse County Jail, and Marquette County Jail require no transportation. As above, the CFP also operates a satellite location within the Wayne County Jail, providing evaluations for approximately 60% of Wayne County Jail inmates referred for evaluation. Finally, counties frequently escort multiple defendants in a single trip. The CFP's Forensic Services department works diligently to efficiently schedule counties' defendants to minimize multiple trips from the same county. The total number of "trips" from county jails to CFP locations was estimated to be 869. The number of trips per county ranged from 0 (Keweenaw) to 112 (Wayne).

To arrive at an estimate of the total cost per county of transporting criminal defendants to and from the CFP for competency to stand trial and criminal responsibility evaluations for Fiscal Year (FY) 2017, several factors were considered. These included the hourly salary rate for two correctional officers to transport a defendant, the hourly overtime rate for a jail correctional officer to cover staffing needs absent the transporting correctional officers, the average amount of time the round-trip required (including time for the evaluation), the mileage costs (per IRS rate), the estimated distance (in miles) from the county jail to the CFP, and the number of trips to the CFP each county made for evaluations during the time period (year) in question. This estimate will likely vary depending on the specific policies, procedures, and other variables dependent on the county. For the sake of completeness, both mileage costs (per IRS rate) and fuel was calculated. Some counties may pay their officers a mileage rate while others may not. Fuel costs will likely vary depending on the type of vehicle used by each county. The estimate assumes that the additional "wear and tear" on a vehicle, would be included in the mileage rate. Because of the possibility of variation among counties with respect to these parameters, contact was made with five of Michigan's 83 county sheriff's departments (Ingham, Ionia, Monroe, Oakland, and Washtenaw, representing a diverse spread of county/competency evaluation referral base sizes) to obtain/confirm cost data for these parameters. Patterns were identified, based on this data and from the CFP's database tracking competency evaluation referrals/orders by county that enabled the reasonable categorization of counties into "small," medium, and "large," for purposes of this cost calculation. These designations were based on number of offenses from which referrals for competency evaluations were made for a given county.

For the period in question (FY 2017), the average correctional officer hourly salary rate for a "small" county was estimated at \$21.00/hour; for a "medium" county, \$28.00/hour; and for a "large" county, \$32.00/hour. The average overtime rate for a covering jail correctional officer was therefore determined based on the type of county and its corresponding officer hourly rate (\$31.50/hour for "small" counties; \$42.00/hour for "medium" counties; and \$48.00/hour for "large" counties). The mileage estimate was determined to be 53.5 cents per mile per the IRS rate. We calculated mileage from each county jail to the assigned CFP designated location using Google Maps. The amount of time for each evaluation varies substantially depending on the type of evaluation, the defendant's presentation, and other clinical factors. We estimated that defendants from small counties remain at the CFP for 3.5 hours; that defendants from medium counties remain for 4 hours; and that defendants from large counties remain for 4.5 hours. Larger counties generally transport more than one defendant per trip, and officers must remain at the CFP until all defendants have completed their evaluations; therefore, larger counties, on average, would remain at the CFP longer. We also included meal-per-diem estimates of \$18.00 (per officer) in our cost calculations. We estimated fuel use based on a

transport vehicle operating at 15 miles per gallon of fuel and fuel priced at \$2.40 per gallon. For counties in which the total trip (i.e. round-trip transportation and time for evaluation) exceeded 8 hours, officers were assumed to receive overtime pay rates for any time worked above 8 hours. Based on these considerations, the following are cost estimates for one trip to and from the evaluation location based on the type of county (note rates vary significantly by county and county-specific data can be provided upon request):

Small County:

Average cost of 2 officers compensated at regular rate of \$21.00/hour x 8 hours + Overtime Pay	\$ 301.46
Average round trip mileage @ IRS rate of 53.5 cents/mile	\$ 104.13
Average fuel cost per round trip	\$ 31.14
Meal per diem @ \$18.00 per officer x 2 =	<u>\$ 36.00</u>
Total	\$ 472.73

Medium County:

Average cost of 2 officers compensated at regular rate of \$28.00/hour x 8 hours + Overtime Pay	\$ 389.72
Average round trip mileage @ IRS rate of 53.5 cents/mile	\$ 96.35
Average fuel cost per round trip	\$ 28.81
Meal per diem @ \$18.00 per officer x 2	\$ 36.00
Total	\$ 550.89

Large County:

Average cost of 2 officers compensated at regular rate of \$32.00/hour x 8 hours + Overtime Pay	\$ 407.34
Average round trip mileage @ IRS rate of 53.5 cents/mile	\$ 55.53
Average fuel cost per round trip	\$ 16.61
Meal per diem @ \$18.00 per officer x 2	\$ 36.00
Total	\$515.49

Total # of Trips to CFP Locations for Forensic Evaluations for "Small" Counties	175
Total # of Trips to CFP Locations for Forensic Evaluations for "Medium" Counties	294
Total # of Trips to CFP Locations for Forensic Evaluations for "Large" Counties	400

Total Transportation Costs for FY 17:

<u>"Small" Counties:</u>	
\$472.73/trip x 175 trips	\$82,727.75
<u>"Medium" Counties:</u>	
\$550.89/trip x 294 trips	\$161,961.66
<u>"Large" Counties:</u>	
\$515.49/trip x 400 trips	\$206,196.00

Estimated Grand Total Transportation Costs for FY 17

\$450,885.41
[+ \$277,238.70 in avoided costs
(see below)]

To better understand the cost savings measures currently in place, data were also analyzed to determine transportation costs to individual counties were it not for the CFP's current satellite locations. Each county's distance and estimated travel time were calculated from the county jail to the CFP (rather than to the currently assigned satellite location). The same parameters regarding mileage, fuel, and officer time were calculated, with some additional considerations:

When total time (including travel and evaluation) was calculated to be above 10 hours, it was assumed officers would receive two meals worth of reimbursement; when it was estimated to be greater than 20 hours, it was assumed officers would be reimbursed for three meals (only one county met this criteria). Furthermore, if total travel time was expected to be more than 16 hours, it was assumed that officers would require an overnight stay, including an additional 8 hours of pay at an overtime rate, and \$83.25 reimbursement for a hotel room at the State of Michigan rate (plus fees and taxes). The analysis also presumed that all Wayne County defendants would be seen at the CFP instead of at the satellite location at the Wayne County Jail, leading to an additional 175 trips from the Wayne County Jail to the CFP. After inputting the above information, it was determined that total expenses that would be incurred by counties to transport defendants directly to the CFP would amount to \$727,774.88 assuming that no satellite evaluations were taking place as they currently are, and that all defendants were transported to CFP for their evaluations. Based on these calculations, it is estimated that the use of satellite locations in Kent, Grand Traverse, Marquette, and Wayne Counties saved counties \$277,238.70 in transportation costs during FY 2017. The table below provides a county-by-county analysis including the county, the number of expected annual trips, the estimate of each county's expenses in a fiscal year to travel to their designated evaluation location, the estimate if the county had to transport to the CFP instead of a satellite location, and the estimated savings (cost for a county if evaluations were at CFP minus the cost incurred by the county by being seen at a satellite location):

County	Estimated FY Trips	FY Estimate	FY Estimate if at CFP	CFP Total Savings
Alcona	1	575.83	838.53	262.7
Alger	2	608.78	2905.06	2296.28
Allegan	8	3241.28	5766.88	2525.6
Alpena	4	2297.76	3837.04	1539.28
Antrim	3	930.09	2823.21	1893.12
Arenac	3	1649.43	1649.43	0
Baraga	3	1206.21	7338.21	6132
Barry	12	7625.64	7625.64	0
Bay	21	12737.69	12737.69	0
Benzie	2	572.58	1914.26	1341.68
Berrien	16	12199.04	12194.56	0
Branch	8	3339.76	3339.76	0
Calhoun	35	19227.83333	19227.833	0
Cass	2	1191.82	1192.24	0.42
Charlevoix	4	1357.24	4110.44	2753.2
Cheboygan	6	3006.84	6060.42	3053.58
Chippewa	9	5966.91	10905.21	4938.3
Clare	6	2588.16	3796.92	1208.76
Clinton	6	2604.42	2604.42	0
Crawford	4	1374	2944.4	1570.4
Delta	5	1919.75	10651.7	8731.95
Dickinson	6	2604.96	13879.44	11274.48
Eaton	19	10481.73	10481.73	0
Emmet	3	1197.99	3007.32	1809.33
Genesee	42	22868.3	22868.3	0

County	Estimated FY Trips	FY Estimate	FY Estimate if at CFP	CFP Total Savings
Gladwin	3	1461.54	1821.09	359.55
Gogebic	6	3760.56	16485.48	12724.92
Grand Traverse	0	0	24126	24126
Gratiot	2	979.7	979.7	0
Hillsdale	7	2599.87	2599.87	0
Houghton	2	993.92	5145.9	4151.98
Huron	3	1905.12	1904.49	0
Ingham	41	22989.11	22989.11	0
Ionia	13	8205.86	8205.86	0
Iosco	9	6375.24	6035.04	0
Iron	5	2066.15	11968.6	9902.45
Isabella	9	6396.93	6394.41	0
Jackson	19	7971.956667	7971.9567	0
Kalamazoo	29	19731.79333	19731.793	0
Kalkaska	7	1847.72	6113.38	4265.66
Kent	6	1944	49996.2	48052.2
Keweenaw	0	0	0	0
Lake	1	382.54	836.37	453.83
Lapeer	6	3114.62	3114.62	0
Leelenau	1	251.4	1057.04	805.64
Lenawee	9	3374.79	3374.79	0
Livingston	10	4005.133333	4005.1333	0
Luce	0	0	0	0
Mackinac	1	549.27	1068.69	519.42
Macomb	46	26253.58	26253.58	0
Manistee	3	1118.4	2865.09	1746.69
Marquette	0	0	43386.24	43386.24
Mason	0	0	0	0
Mecosta	1	555.92	940.98	385.06
Menominee	2	1080.44	4643.64	3563.2
Midland	6	2989.26	2989.26	0
Missaukee	0	0	0	0
Monroe	24	8966.08	8966.08	0
Montcalm	10	7219.9	7219.9	0
Montmorency	1	449.53	869.2	419.67
Muskegon	23	11066.68	22647.41	11580.73
Newaygo	6	2623.98	5421.18	2797.2
Oakland	54	28391.4	28391.4	0
Oceana	1	515.1	845.42	330.32
Ogemaw	3	1361.04	1841.94	480.9
Ontonagon	4	2158.04	10511.28	8353.24

County	Estimated FY Trips	FY Estimate	FY Estimate if at CFP	CFP Total Savings
Osceola	1	396.46	741.04	344.58
Oscoda	1	436.98	699.16	262.18
Otsego	2	751.2	1722.84	971.64
Ottawa	15	6574.95	14538.75	7963.8
Preque Isle	1	574.44	988.6	414.16
Roscommon	4	1552.6	2771.32	1218.72
Saginaw	25	14315	14315	0
Sanilac	6	3329.16	3330.42	1.26
Schoolcraft	4	1669.44	5368.96	3699.52
Shiawassee	11	5787.026667	5787.0267	0
St. Clair	16	9028.16	9028.16	0
St. Joseph	11	7174.09	7174.09	0
Tuscola	12	6180.24	6180.24	0
Van Buren	10	6414.266667	6414.2667	0
Washtenaw	32	11362.02667	11362.027	0
Wayne	112	55012.16	85956.5	30944.34
Wexford	3	1295.19	2977.71	1682.52
Total:	869	450,884.01	727774.88	277238.70

Costs Savings per County from the Use of Telemedicine

As noted previously, the scientific literature on the use of telemedicine (TM) for conducting forensic mental health evaluations, including evaluations of competency to stand trial, is very limited. Even more sparse is scientific literature specifically addressing the costs of implementing TM systems for conducting competency evaluations. The very limited number of cost-focused TM studies available (e.g. Zollo et al. 1999, Hilty et al. 2004, Rappaport et al. 2016) primarily address costs associated with the use of TM systems for evaluation and treatment of medical conditions (e.g. cardiac or orthopedic conditions) or provision of general mental health treatment (not forensic evaluations).

There are numerous factors that would influence the cost per county of establishing and maintaining a TM-based system for conducting competency evaluations. These include the type of TM system, the network capacity of the involved facilities, the volume of TM utilization, record access and document transfer needs, system maintenance costs, the need for cloud services, costs of structural/environmental accommodations (such as carpeted and soundproof rooms at the remote site to protect defendant confidentiality and minimize echo, proper room assignment to maximize visibility), costs associated with having a TM coordinator and possibly another clinician at the remote site to facilitate the TM interaction (recommended in treatment contexts by most reviewed articles), costs of having available security staff at the remote site in the event of acute situations such as defendant aggression during the evaluation, and other factors.

Given these limitations in the current literature and the multiple factors influencing the cost of TM implementation, a highly reliable estimate of the cost per Michigan County associated with implementing and maintaining a TM system for the purpose of conducting competency evaluations is not possible at the present time.

The reviewed literature supports the significant difficulty in establishing, quantifying, and comparing TM costs to those of on-site visits (e.g. Zollo et al. 1999; Hilty et al. 2004).

However, extrapolating from the limited available literature on the costs of using TM to provide medical (non-forensic) care in prison settings (e.g. Zollo et al. 1999, Rappaport et al. 2016), we can consider a very rough estimate of what it might cost to establish and utilize a TM system for forensic evaluations for each Michigan county jail. According to Zollo et al. (1999), an estimate of the cost to implement TM should consider the following variables: circuit charges; equipment; space/facilities; per-minute charge x number of minutes x number of consults; and personnel. To best estimate the cost of a TM system, our analysis divided costs into two categories: 1) initial startup costs; and 2) annual expenses. The initial startup costs would amount, for each facility, to roughly \$48,500; this includes circuit charges and equipment (consisting of videoconferencing system = \$30,000, computer and associated line = \$2500, telephone and associated line = \$1000, fax machine set-up with phone line = \$3000) plus space/facilities (soundproofing = \$10,000 depending on room size, carpeting = \$2000 depending on room size). These cost estimates were obtained from the CFP's Maintenance Department (including individuals with extensive experience working in forensic facilities).

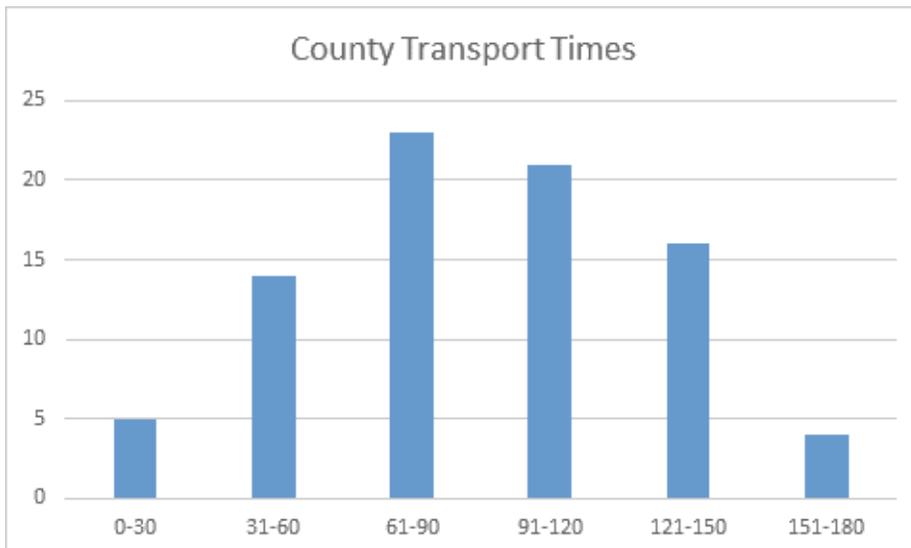
The annual continuing costs to each county participating in a TM system would include both technical and personnel expenses. There are likely a variety of models that could be utilized in terms of identifying appropriate sites and development of staff that could cover across counties or be assigned uniquely to particular facilities. One such model is depicted here to give an idea of the various considerations that might be needed for cost estimates. Technical costs would consist of data cost per minute (estimated at \$0.25 per minute), multiplied by the number of competency evaluations conducted in a given county per year, multiplied by the average number of minutes in a forensic evaluation (estimated to be 210). The primary annual expenditure would come in the form of personnel needed at the remote site, consisting, in this model, of a full-time TM coordinator at the county jail (could be a Master's level social worker at \$58,000/year), a full-time Information Technology technician/expert at both sites (\$58,000 = \$116,000/year), and two correctional staff at the remote (county jail) site to be available for emergencies. Correctional staff were assumed to only require budgeted pay during the 3.5 hours of the evaluation (this would amount to, for a "small" county, \$21.00/hour x 3.5 hours x 2 officers = \$147.00 for one evaluation; the annual officer cost would depend on how many evaluations that county had per year; if we assume about 10 evaluations, this would amount to \$1470 in officer-related costs per year). The TM coordinator and IT technician were assumed to be annual salaries. Thus, for a "small" county referring defendants for approximately 10 competency evaluations per year, continuing costs would amount to about \$175,470/year. Such a county would therefore incur a total cost of approximately \$223,970 to establish and maintain a TM system during the first year of implementation in this model. There likely would be ways of accessing the service with other cost models, taking advantage of marginal costs for additional activities within existing FTE structures and consolidating activities across sites but that would require a separate calculus and further study.

Given baseline technical and personnel expenses, and based on specific information from our county databases, the minimum estimate for a county to initiate a TM system during the first year of operation is \$164,500. Counties that would use more TM services would presumably pay more for data rates, with the top county (Wayne) estimated to pay approximately \$262,000 in the first year of operation. Continuing annual cost for counties ranged from \$116,000 to \$214,000 per county. Such estimates are necessarily broad and cannot account for several other factors (e.g. a county being able to incur the cost of a technician from current operational budgets or counties that would need additional infrastructure to provide high speed internet access on site). Other considerations include counties recruiting and retaining qualified personnel. If all 83 counties exclusively used TM services, the estimate for costs in the first

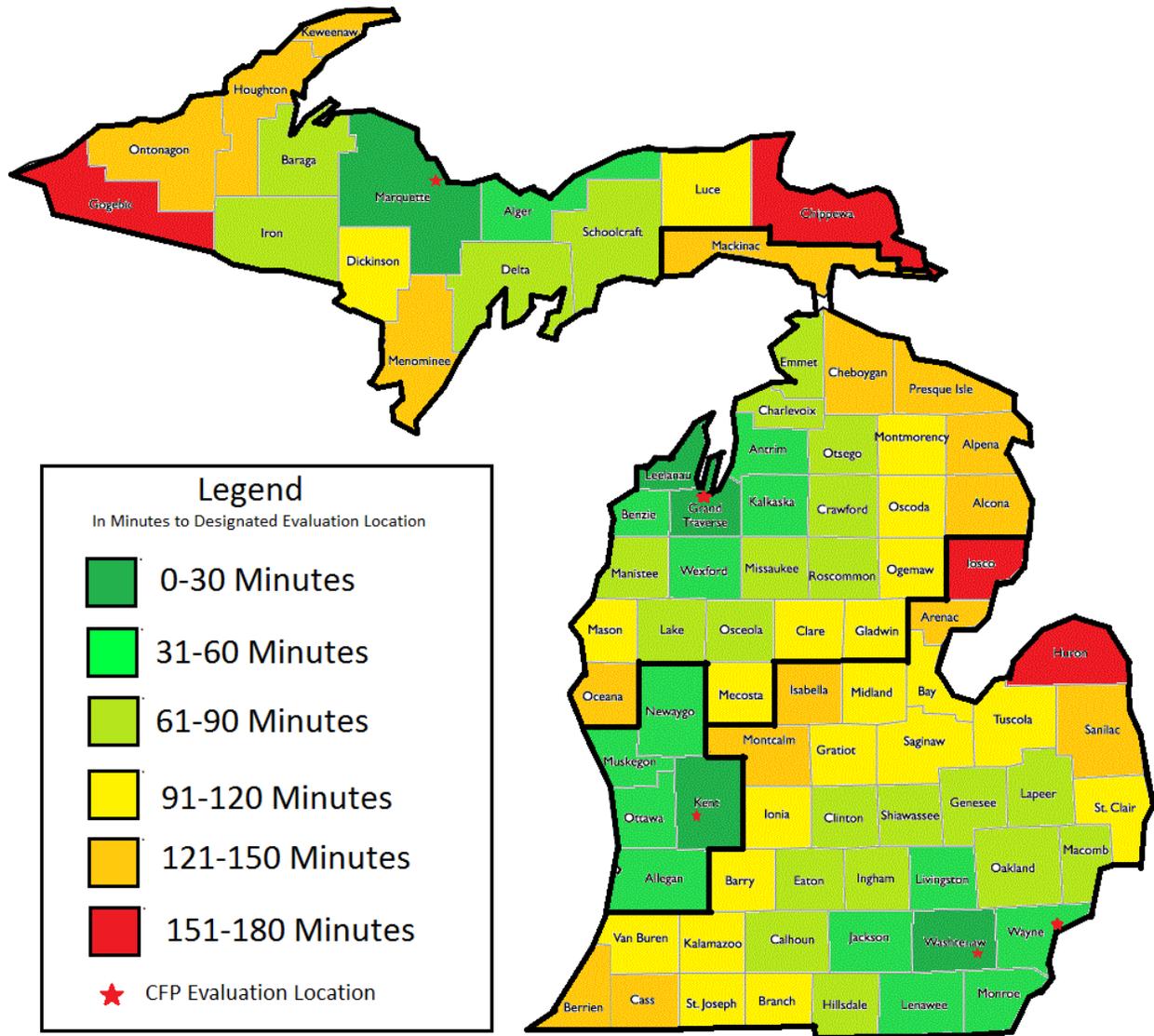
year in this model is slightly above \$14,000,000.00, with each additional year estimated to cost slightly above \$10,000,000.00. The primary driver of these estimates are the salaries needed for additional full-time staff at each of the county jails.

Based on these estimates and this model of service delivery, there are no counties in Michigan that would save money by using TM services. To the contrary, each county would be expected to spend substantially more per year for TM services. The county where TM services would be most “cost effective” (Ingham County) would incur an additional \$101,400.00 per year compared to the county’s current estimated cost of transporting defendants to the CFP for evaluations. In comparison, Wayne County (the county with the highest estimated TM expenses) would be expected to expend an additional \$207,858.00 per year in comparison to the current costs of transporting defendants. These estimates do not include the additional \$48,500.00 estimated to be spent in the first year to pay for the necessary technology and facilities.

One other issue to consider regarding costs of a telemedicine initiative is the relative proportion of defendants referred from remote counties in Michigan for competency evaluations at the CFP. Each of Michigan’s 83 counties is assigned to transport defendants to one of five locations: the CFP (36 counties including some Wayne County defendants), the Wayne County Jail (Wayne County only), the Kent County Jail (5 counties), the Grand Traverse County Jail (28 counties), and a correctional site in Marquette County (14 counties). Of note, well more than half of counties are served through the CFP’s satellite locations. Using Google Maps, we calculated the driving distance and estimated drive times from each of those county jails to their designated evaluation site. Counties travel, on average, 84 miles (SD=40.8) one-way and 90 minutes (SD=39.8) one-way. Here is a chart, giving equal weight to each county, of the drive times from county jail to evaluation site:

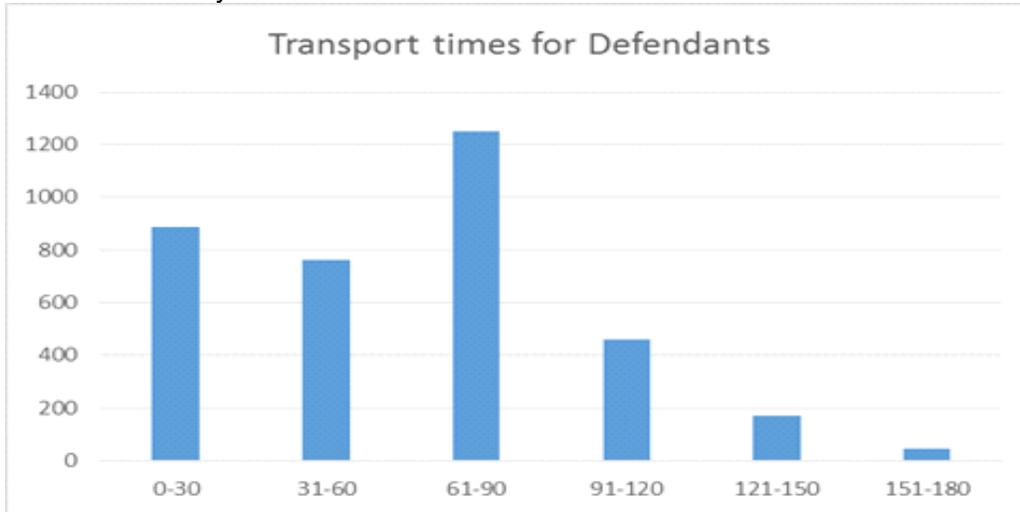


Of note, only four counties travel more than 2.5 hours each way to their evaluation site and less than 25% of counties have drives longer than 2 hours. Two of these counties (Gogebic and Chippewa) are in the Upper Peninsula (UP); one (Huron) is on the tip of the “thumb;” and one (Iosco) is on the northern side of the Saginaw bay, with the closest site being CFP over Traverse City. A few regions with drives over 2 hours include portions of the UP, the southwestern-most and northeastern-most counties of the Lower Peninsula, and portions of the “thumb.” Here is a graphical version of the above six categories:



However, this information tells an incomplete story. Defendants are obviously not equally distributed throughout the map. As such, we looked at the orders CFP received during the 2015 and 2016 calendar years by the county of the order. With that data, we were able to estimate the number of defendants seen and categorize those defendants by their estimated travel times from the county jail.

Here is the same chart from above where counties are weighted by the number of defendants from each county:



This weighting reveals a different picture. In general, counties that are further away from evaluation sites are less populated and account for a smaller percentage of CFP referrals. Only 1.3% of defendants travel more than 2.5 hours each way to their evaluation. An additional 5% travel more than 2 hours. 81% of all defendants travel less than 90 minutes. Almost 25% of all defendants travel less than 30 minutes for an evaluation. The modal defendant travels between 60 and 90 minutes to evaluations, but this is accounted for mostly by Oakland and Macomb Counties.

The above data provides an important context for a proposal to conduct competency evaluations via TM. If the larger question is how to best use resources to serve the competency evaluation needs of more remote counties in Michigan, investing resources (and time) into establishing TM infrastructures at these remote facilities would be cost-ineffective and potentially time-inefficient unless coordinated with other sites, as only a very small percentage of competency referrals come from these counties.

Overall Summary

- There are technical requirements for establishing a TM-based competency evaluation system (including optimal encryption, screen size, microphone sensitivity, speaker volume and control, camera quality and remote control, kilobytes per second, frames per second, and signal reliability). CFP, in conjunction with MDHHS leadership and other administrative officials, would need to create, develop, and implement a sizeable number of policies and procedures related to the use of TM to conduct competency and other forensic evaluations should a decision be made to pursue this initiative.
- Total estimated transportation costs related to competency evaluations for one year (FY17) vary by county based on estimates obtained and utilized for this report, but range from approximately \$0 to \$55,000/year, depending on the number of competency evaluation referrals each county generates, distance between the county jail and the CFP or designated evaluation location, officer salary rates, and other factors. Additional stakeholder input would be needed for further cost-estimates.
- A rough estimate of the cost of establishing and maintaining TM-based competency evaluation systems suggests that depending on the model design and associated staffing to support the use of TM at both the hub and remote sites, cost-savings would not be robust, and costs may in fact be increased per county per year from the use of TM.
- Although TM usage in forensic contexts is an emerging area of interest that may yield

benefits in the future, currently available information suggests that TM for routine court-ordered evaluations of competency to stand trial and/or criminal responsibility is not regularly or widely used across the country at this time. Michigan has a unique structure involving the CFP and satellite sites. However, because forensic reports on competency to stand trial conducted via TM may or may not be accepted by courts, defense or prosecution in individual criminal cases, any development of the use of TM for these evaluations across the state would require plans for in-person evaluations as a back up to a system that could delay the criminal proceeding in a particular case and incur additional expense. Criminal responsibility evaluations are often bundled in Michigan in court-ordered requests for evaluation of defendants, but raise even further questions about trial defense strategy and, separate from logistical issues, would require additional forensic and other considerations that are beyond the scope of this report. Overall, this report concludes that the use of TM to conduct competency to stand trial evaluations in Michigan, while holding some potential as more is developed in this field, is not currently a readily viable cost-effective alternative to the existing structure for completing forensic evaluations in Michigan.

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