

Telebehavioral Health, Telemental Health, e-Therapy and e-Health Competencies: the Need for an Interprofessional Framework

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Abstract Telebehavioral health (TBH) in the form of synchronous video is effective, well received and a standard way to practice. Current guidelines and policies discuss the importance of good clinical, technical, and administrative components to care. A review of the TBH evidence-based literature across psychiatry/medicine, psychology, social work, counseling, marriage/family, behavioral analysis, and other behavioral sciences found no common TBH competencies across disciplines. The scope of professional guidelines and standards about technology are broad (e.g., practice of telepsychology; Internet and social media use in social work practice), to mid-range (e.g., American Telemedicine (ATA), American Counseling Association (ACA)), to narrow (e.g., preliminary “guidelines” for asynchronous communication such as e-mail and texts). There is only one set of competencies for telepsychiatry, which discusses skills, training and evaluation. These competencies suggested (1) novice/advanced beginner, competent/proficient, and expert levels; (2) domains of patient care, communications, system-based practice, professionalism, practice-based improvement, knowledge and technological know-how; and (3) pedagogical methods to teach and evaluate skills. Revisions to this framework and technology-specific competencies with additional domains may be needed. A challenge to competencies across disciplines may be finding consensus, due to varying scopes of practice, training differences and faculty development priorities. Disciplines and organizations involved with TBH need to consider certification/accreditation and ensure quality care.

Keywords Telebehavioral health · Telemental health · e-therapy · Competencies · Competency framework · Interprofessional · Interdisciplinary

Introduction

Technology is becoming part of our society in a breath-taking fashion, as part of our education, health care, business and social culture. People obtain health information via websites, participate in support groups, use tools for lifestyle change, obtain consultations by a professional, and receive services by video or Internet (Frydman 2010; Hilty et al. 2013a, 2015e). Telebehavioral health (TBH), a term more inclusive of the treatment of addictions, may be preferable to telemental health (TMH), though regulatory boards have used up to 19 terms in referring to TBH (Ostrowski and Collins 2016). A review of TBH best practices revealed that each discipline and field has its own nomenclature for telehealth (e.g., telepsychiatry, telepsychology, distance counseling) (Luxton et al. 2016; Mucic and Hilty 2015).

Current competency-based education (CBE) and training movements began with US efforts to reform teacher education and training in the 1960s (Brown 1994; Tuxworth 1994). CBE focuses on what students know and can do—skills—rather than on what is taught (Ford 2014). A competency may best be described as a measurable human capability required for effective performance (Marrelli et al. 2005) with gradation of levels of proficiency (Brenner 1984). Professional competencies have been suggested in the past for TBH, as in-person and TBH skills may have differences (Maheu et al. 2004; Callan et al. 2016; Luxton et al. 2016). The first set of telecompetencies—in telepsychiatry (TP) in 2015—suggested (1) novice/advanced beginner, competent/proficient, and expert levels; (2) domains of patient care, communications,

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system-based practice, professionalism, practice-based improvement, knowledge and technology know-how; and (3) pedagogical methods to teach and evaluate skills (Table 1; Hilty et al. 2015c).

Maheu et al. (2004) discussed the Report of the Interdisciplinary Telehealth Standards Working Group (1998), which anticipated changes in standards of professional conduct related to technology:

“Standards of professional conduct are unlikely to change simply as a result of developing telehealth technology. However, the professions will likely need to develop interpretations of their standards of professional conduct as they apply to telehealth, since the application of the standards and the measurement criteria used to assess them may be different in this area. There will be a need for ongoing evaluation by professions of these issues” (pp. xiii-xiv).

This illustrates how competencies dovetail with clinical standards, quality improvement, peer review, and professional associations and regulatory boards (Maheu et al. 2017).

The current paper will focus on the answers to three questions:

- 1) What is the state of TBH evidence relevant to the development of competencies?
- 2) Which existing and new frameworks may help with the development of TBH competencies?
- 3) What are the similarities and differences across disciplines related to TBH competencies?

We hope the asking of these questions, reflection upon them and answers forthcoming will help clinicians self-assess skill, knowledge and attitudes related to TBH. Further reflection on TBH versus in-person care is also suggested and for those interested, obtaining training with feedback for performance improvement may be indicated longitudinally as part of life long learning.

What Is the State of TBH Evidence Relevant to the Development of TBH Competencies?

Clinical Outcomes and Evaluation

TBH services for clients/patients of virtually all ages and many cultures have included clinical assessment; psychological and cognitive testing (Nelson et al. 2013; American Telemedicine Association (ATA) 2009, 2013, 2017); triage; a wide range of psychotherapies (e.g., individual, family/system, group); and psychiatric interventions. Studies show that TBH outcomes are similar to in-person care across

populations, ages and disorders (Hilty et al. 2013a, b). More randomized controlled trial research is indicated for specialty populations (e.g., child and adolescent, geriatric and cultures) (Hilty et al. 2015f; Rabinowitz et al. 2010; Hilty et al. 2013a). Client/patient ratings of satisfaction with psychotherapeutic interventions and therapeutic alliance in treatment are comparable between TBH and in-person delivery (Jenkins-Guarnieri et al. 2015) and predict a good therapeutic alliance and therapy outcomes (Horvath et al. 2011).

The evidence-based for psychotherapy and counseling by TBH is growing. The core issues about technology include informed consent; client/patient education; exploring the virtual therapeutic connection (Glueck 2013); and replacing behaviors like handing a tissue box or a handshake with verbal statements conveying empathy (Hilty et al. 2002). One of the first meta-analyses to examine the use of videoconferencing for psychotherapy reviewed therapeutic types/formats, populations served, satisfaction, feasibility, and outcome data (Backhaus et al. 2012). These researchers concluded that TBH is feasible, has been used in a variety of therapeutic formats and with diverse populations, and has similar clinical outcomes to traditional in-person psychotherapy. Guidelines for therapy by videoconferencing have been explored (Nelson et al. 2012, 2013).

An organizing concept of TBH's impact is effectiveness, defined in Latin as “having the power to produce an effect . . . a decisive effect; efficient; as, . . . an effective . . . remedy” (Hilty et al. 2013a). Ideally, effectiveness should be considered for the client/patient, provider, program, community, and society. In telemedicine and TBH, few authors have discussed effectiveness (Hilty et al. 2003, 2013a); efficacy was the prior emphasis (Richardson et al. 2009). The broad underlying premise of being effective is ensuring that the technology is chosen specific to the objective to achieve or the type of setting and the service to be offered (World Health Organization 2011; Hilty et al. 2013a).

Evaluation of TBH has gone through three phases (Hilty et al. 2013a). First, TBH was found to be effective in terms of increasing access to care, acceptance, and good educational outcomes (Hilty et al. 2013a). Second, it was noted to be valid and reliable compared to in-person services (ATA 2009; Hilty et al. 2013a). Comparison (i.e., “as good as”) and non-inferiority studies of TBH by videoconferencing in-person care show similar outcomes. Third, frameworks are being used to approach complex themes like models and costs (ATA 2009, 2013; Hilty et al. 2015f). The ATA (ATA 2013) produced a lexicon for evaluating specific (e.g., satisfaction; process of care like no-shows, coordination, completion of treatment); costs). The Telebehavioral Health Institute is a clearinghouse for many such statements across behavioral disciplines (TBHI 2017).

Professional association standards and guidelines serve as a shorthand guide to helping the average practitioner understand and/or implement the evidence base within any discipline. They therefore can be quite useful when developing

Table 1 Telepsychiatric (TP) competencies related to patient care, system- and practice-based learning, professionalism, communication, knowledge, and technology

Area/topic	Novice or advanced beginner (e.g., advanced medical student, early resident, other trainees)	Competent/proficient (e.g., advanced resident/graduating resident/faculty/attending/interdisciplinary team member)	Expert (e.g., advanced faculty/attending/interdisciplinary team member)
Patient care			
History-taking	Standard history	Informed consent for telehealth (check state to see if form needed; option not to do telehealth is discussed) Contextualized history (e.g., aware of geographic and cultural specificity)	Assess informed consent problems and questions In-depth, well-paced, and concise interview
Engagement and interpersonal skills	Establishes therapeutic alliance Builds trust and rapport	Identify and manage problem(s) with alliance/trust/rapport Adjust interview to technological and patient needs/preferences	Determine best appropriate assessment adjustments based on the setting (in-person vs. TP)
Assessment and physical examination	Stratify risk and protective factors based on epidemiology (e.g., suicide, homicide risk) Administer tools (e.g., MMSE) from a distance ^{CM} Ascertain need for literal PE	Ensure risks for suicide/harm to others and develop follow-up plan Ensure identification of significant exam findings (e.g., movement disorders; intoxication / withdrawal) Examine and administer tools with adjustments (e.g., use staff to complete or do part of PE)	Synthesize information (including risk vs. protective factors and collateral information) Administer tools contextually (e.g., substitute score item for non-reproducible task at distance) Teach staff/others how to do parts of PE and trouble-shoot PE problems far end
Management and treatment planning	Biopsychosocial (BPS) outline Participates in providing summary and recommendations Medical decision-making on safety, need for treatment and other interventions Follow-up with PCP or TP by note Follow-up with necessary others	BPS outline with depth and identification of safety and risk factors Able to provide summary and recommendations to patient and interprofessional team Awareness of treatment continuum (levels of care) Follows in-person medication recommendations (i.e., reviews options, side effects and alternatives if applicable, provides specific instructions for PCP to initiate, titrate and augment) Formulate plan for calls, Rx and such Follow-up with PCP by TP or phone	BPS outline with prioritization, with emergency plan execution, and obstacles anticipated Tailors recommendations to available resources, cultural specificity and patient preference Engages patient, referring doctor or other providers succinctly Select “best” mode: e-mail, telephone, or other (and if it changes the process); terminate video if too problematic For medication recommendations: considers safety and adherence factors; plan for follow-up and monitoring; aware of legal and jurisdictional issues related to prescribing
Documentation	Draft TP note hard copy or rudimentary EHR	Initial/revised draft primary or other specialty care modification for consultation Complex EHR (e.g., Cerner, Epic) Identify diagnoses for billing	Provide sufficient detail to allow implementation of plan over time and within local context/resources Phone, e-mail and asynchronous notes Final time spent, diagnosis and codes Consideration of health advocacy issues related to billing; access to care
Billing	Learn why billing is important and how it is configured		
Privacy and confidentiality (medico-legal issues ^{CM})	Learn in-person basic regulations	Be aware of regulations and learn translation of principles to video and adjunct regulations, if applicable Be aware that technologies are encrypted differently	Practice within in-person and telemedicine standards Be aware of pitfalls with technologies (e.g., cellular phones are not private; gmail is not HIPAA compliant)
Communication^{MS-IPSC}			
Cultural, diversity and social determinants of health	Consider diversity of patients, families and communities; language fluency, customs Consider one’s culture, values, behaviors, and preferences ^{CM}	Adjust in consideration of patient culture and preference Language fluency: double check/confirm Ways to elicit cultural meaning of illness / wellness Be aware that social determinants may affect interest in, using of, and experience with telemedicine	Follow cultural formulation frameworks Ask if culture affects using TP (general exploration) or explanation of illness Consider patient-doctor relationship in context of culture, values, behaviors, and preferences

Table 1 (continued)

Area/topic	Novice or advanced beginner (e.g., advanced medical student, early resident, other trainees)	Competent/proficient (e.g., advanced resident/graduating resident/faculty/attending/interdisciplinary team member)	Expert (e.g., advanced faculty/attending/interdisciplinary team member)
Language/interpreter ability	Learn how social determinants affect in-person care ^{CM}	Time management and preferred types (e.g., professional > family)	Adjust interview, assessment and treatment per social determinants; consider in-person care if critical need
Communication	Use the interpreter Clear communication with patient, family, and healthcare professionals	Clarify and amplify communication	Verbal and non-verbal dimensions Trouble-shoot communication difficulties
Systems-based practice ^{MS-SBP}			
Outreach to community	Participates and engages	Visit community in-person before TP	Establishes and maintains relationships with communities
Interprofessional ^{MS-IPSC, CM} education (IPE) and team work	Participates and experiences different roles; works effectively	Work with interprofessional team and familiar with IPE Begins to teach within IPE	Thoughtful integration of in-person and TP care, if applicable IPE provider and teacher Supports interdisciplinary team care (e.g., care coordinators—MA—RN—PA/PCP/NP—therapists)
Collaborative primary care	Considers consult from perspective of referring provider's perspectives/needs	Understands the referring provider's needs and adapts consult and note appropriately	Engages providers with unclear needs Uses individual consult as an opportunity for building ongoing relationship Integrates indirect care (e.g., case or chart review) into practice Practices and role models
Rural health	Learns about rural access, epidemiology, \$, and other	Learns rural health basics	Practices and role models
Special populations	Learns differences (e.g., veterans, child/adolescent/parent/family, geriatric)	Recognizes differences and adapts assessment and management approaches accordingly	Practices and role models
Safety	Learns systematic assessment	Identifies problems and stratifies risk	Adjusts risk and its management to TP system practice
Care models	Learns what in-person, TP care, and consulting TP care are	Facility with traditional referral to psychiatry, consultation care, and TP	Has facility with models of consultation, integrated, stepped and hybrid care; practices with one that fits context
Licensure regulations as applied to telemedicine care model (medico-legal issues ^{CM})	Learns in-person regulations and that there are differences between states	Begins to learn collaborative care Be aware that in-person and telemedicine regulations may/not differ	Practice within telemedicine regulations state-to-state or within unique system (e.g., veterans affairs)
Evaluation	Understand patient satisfaction	Know basic evaluation strategies for TP outcomes	Consider range of evaluation approaches and use results for QI or to inform practice
Health advocacy	Identify issues related to access and health equity	Consider how technology can address and also contribute to health equity gaps	Consider ways that the physician role can impact policy and advocacy through technology
Professionalism ^{MS-P}			
Attitude	Learn and be open to technology	Interprofessional clinical practice and teaching/learning	Leadership in groups/teams
Integrity and ethical behavior	Demonstrates behavior consistent with	Role models	Role models and gives feedback

Table 1 (continued)

Area/topic	Novice or advanced beginner (e.g., advanced medical student, early resident, other trainees)	Competent/proficient (e.g., advanced resident/graduating resident/faculty/attending/interdisciplinary team member)	Expert (e.g., advanced faculty/attending/interdisciplinary team member)
Scope	Becomes aware of scope issues of in-person, TP care, and TP consultation	Practices within scope(s)	Provides feedback on scope and boundary issues; trouble-shoots problems
Practice-based learning ^{MS-PrBLLI}			
Administration	Learn basics of in-person care	Be aware that in-person and telemedicine care have differences	Practice with adjustments to telemedicine care
QI	Learns how to participate in QI	Applies QI information to cases and system	Analyzes QI options, selects and evaluates
Teaching and learning	Participates and contributes	Organizes and furthers	Provides context and next steps
Knowledge	Relevance History	Relevance History Evidence-based	History Evidence-based Clinical guidelines
Technology			
Adapt to technology	Identify differences between TP and in-person care Tries to project self 15% more (voice/animation) Realize some non-verbal limitations (e.g., offering a tissue, handshake) Observe	Takes steps to engage and put patient at ease Expect and plan for differences Identify barriers → replacement behavior Adding in third part by phone	Uses humor, self-deprecatory remarks or “top moments” to ease Analyze what actually happened and make adjustments for next time Additional ways to express empathy
Remote site design	Observe	Identify problems and possible solutions to try Modification: toys for a child to play with and furniture	Pre-planning: continuous, iterative improvement Modification: use professional staff for remote play therapy)
Technology operation ^{CM}	Familiarity with microphone, camera and prn 2nd camera Observe how multiple technologies (e.g., primary and secondary camera) are used simultaneously	Operate hardware, software, and accessories Basic trouble-shooting (e.g., re-boot system; call for assistance) Operate use of multiple technologies	Optimize hardware, software, and accessories based on context (for enhancement and avoiding distraction) Manage all trouble-shooting operations on near end and advice on far end prn Optimize use of multiple technologies

1. CM = based on submission for CanMEDS TP competencies
2. MS = U.S. Milestones; consistent with non-TP; regular competencies of the Accreditation Council of Graduate Medical Education (ACGME)
 - a. PC = patient care; K = medical knowledge; PrBLLI = practice-based learning and improvement; SBP = systems-based practice; P = professionalism; and IPSC = interpersonal skills and communication
 - b. Example is MS-PC = Milestones patient care
3. PE = physical examination
4. PCP = primary care provider
5. QI = quality improvement

competencies. Those of particular interest to TBH competencies include (1) the ATA's videoconferencing and Internet-based care guidelines for adults (ATA 2009, 2013) and children and adolescents (ATA 2017). Other noteworthy contributions to competency development include (1) American Psychological Association Guidelines for the Practice of Telepsychology (American Psychological Association 2013); (2) the Provision of Psychological Services via the Internet and Other Non-direct Means (British Psychological Society 2009); (3) the Standards for Technology and Social Work Practice (U.S. National Association of Social Workers 2005, 2017); and (4) the Australian Psychological Society's guidelines for services provided by the Internet and other technologies (Australian Psychological Society 2011). Technology is also on the radar of the American Association of Marriage and Family Therapists (AAMFT), American Counseling Association (ACA), the American Psychiatric Association and the National Association for Alcoholism and Drug Abuse Counselors (NAADAC; now called, the Association for Addiction Professionals or AAP).

Models of care on a spectrum: evaluation vs. treatment, synchronous (i.e., in-person/video) vs. asynchronous care (i.e., text, app) and resource allocation.

Low, mid and high intensity models for TBH care have been described (Hilty et al. 2015b, f). These are akin to clinical services, care coordination, and team-based care for depression, diabetes and other disorders. The model chosen—which should be discussed as part of informed consent—pre-determines roles, decision-making, reimbursement and other medico-legal requirements. With the advent of technologies and their integration into health care, the possibility of collaborative care (Myers et al. 2015) and digital stepped care are possible (Hilty et al. 2017).

Low intensity models. These may include an evaluation (only), psychological testing and/or other form of one time (or serial) consultation without assuming the treating clinician role. These client/patient services may also include materials for psychoeducation and tips for self-assessment (e.g., diabetes, depression, and self-help and support groups). Mid-intensity options are informal online provider consultation, formal education programs, asynchronous consultation with providers (Yellowlees et al. 2013) and Internet-based cognitive-behavioral therapy (ICBT). High-intensity options include collaborative care or in-person MH services with professionals (Celio et al. 2000; Clarke et al. 2005; Andersson et al. 2006; Christensen et al. 2006; Ritterband and Thorndike 2006; Ljotsson et al. 2007; Mucic et al. 2015).

The e-BH Spectrum: a Broader Range of TBH Services

TBH may be part of a broader spectrum of care—that of e-mental health (e-MH or e-BH) (Hilty et al. 2015b), which has been defined as “mental health services and information

delivered or enhanced through the Internet and related technologies” (Christensen et al. 2002). There is no agreement on a field-specific definition, but a meta analysis shows that health behaviors change with e-MH interventions (Laranjo et al. 2015). Systems are also using TBH to increase clinical operating efficiency by integrating care and providing care at multiple points-of-service (Hilty et al. 2015f) and to leverage interdisciplinary team members' clinical, administrative, and other care coordination expertise (Hilty et al. 2015d). Finally, direct in-person and/or TBH video care may be costly, unavailable to many, and insufficient alone, such that many clients/patients and caregivers are seeking e-health information and e-BH services from non-traditional sources like the Internet.

Maheu et al. (2001) discussed the use of TBH including telephones, computer-assisted self-help, email, chat rooms, and videoconferencing for hospitals, community mental health centers, nursing homes, schools, military, tribal and frontier environments, schools and correctional facilities. A clinical model for clinical care and training related to psychotherapy was included in the first handbook related to psychotherapy with different technologies (Maheu et al. 2004). Overall, these technologies should be evidence-based and be used with an evidence-based approach.

Many patients use mobile technologies like psychiatric/MH/BH apps and they may or may not share this use with a therapist. Purposeful use of apps—one selected to a prioritized treatment goal (e.g., depression rating; Torous et al. 2015) and with data transferred to the therapist—is suggested. Overall, BH apps are used for many functions, including to (1) communicate with other patients, caregivers, social supports, or providers; (2) augment psychotherapy and medical support with journaling, diaries, symptom tracking tools, and psychoeducation between clinic appointments; (3) (smart) monitor, that is, to use tools to predict relapse behavior or worsening affective symptoms, through sensors and data activity; (4) to practice self-assessment and care through reflection about their symptoms; (5) make learning more interactive than traditional paper homework; and (6) organize, track, and thus monitor long-term their activities, moods, and therapy homework (Hilty et al. 2015b). Clients/patients' logging of symptoms, affect, behavior, and cognitions “in time” is known as ecological momentary assessment (EMA) (Moskowitz and Young 2006).

There are some concerning areas, though, about this e-BH spectrum. Though online health information varies in quality and readability (Nemoto et al. 2007; Ferreira-Lay and Miller 2008; Kalk and Pothier 2008), quality online materials can be used enhances users' coping, sense of empowerment, and self-efficacy. As above, if a reputable site is “prescribed” by a clinician with a shared purpose, there is greater likelihood for benefit. A key question whether social media and networking is on the e-BH spectrum or not—that is, is it clinical?

There is debate on this. On one hand, it theoretically could be a modality that is part of clinical care; on the other hand, it is inherently public and may not be regular monitored by the clinician. Some have noted that professional behaviors and boundaries become less rigid with e-communication (Maheu et al. 2004; American Medical Association 2011), which raises questions and concerns about explicit posts, symptoms of danger (e.g., suicidal ideation), boundary violations, and privacy for many parties, including administrators and clinicians.

With e-BH care complementing in-person care or used instead, providers must contend with slightly different workflows and processes of care. Clinicians have to figure out how to spend the “therapeutic hour” (i.e., regular services versus using some time to review what e-BH options clients/patients are using versus giving them assignments using on-line resources. Basic questions related to e-BH care and education include:

- What is the best way to align a technology to meet the specific needs of any given clients/patient?
- How can clients/patients and providers be empowered, reflect, and weigh the pros and cons of available options in order to learn new behaviors and evaluate outcomes?
- How can one encourage trainees and other clinicians to learn this spectrum of care and develop skills?
- How do we ensure clients/patients prevent and/or avoid untoward bad outcomes (e.g., posting on social media that one has suicidal thoughts instead of calling a crisis line and/or setting up an appointment)?

Which Frameworks Are Used by Disciplines Regarding the Development of TBH Competencies?

Overview

Professional organizations and regulatory boards have to attend to clinical standards (i.e., professional conduct, practice and treatment guidelines, standards of care, scope of practice) promulgated by professional organizations/associations and licensing boards—with legal and regulatory requirements, which vary according to state licensing boards. In view of the considerable skepticism about healthcare delivered over the Internet, it behooves practitioners to be fully aware of the evolving law (R. Waters, personal communication, September 11, 2002 (Maheu et al. 2004). Professional associations and regulatory boards by nature are responsive to sentinel events and therefore may be limited in how comprehensive or relevant they can be when it comes to an area are rapidly evolving as technology (Maheu et al. 2004; Luxton et al. 2016).

With rapidly changing marketplace demands resulting from health care reform with an increasing role of technology (Temullo and Locke 2016), our educational and service delivery programs are pressed to deliver professionals who are fully prepared to respond proficiently as well as legally and ethically. Hence, we need patient- and learner-centered care and supervision, and this need is particularly evident with the challenges evidenced in TBH (Maheu 2001, Maheu et al. 2004; Hilty et al. 2015f; Callan et al. 2016; Luxton et al. 2016).

In MH, a competency in the form of a measurable human capability required for effective performance may include individual and aggregate components of skill, knowledge, attitudes or personal qualities. The latter category includes attitudes, but may have emotional, personality, value, and/or other components. These elements affect how one conducts oneself, habits kept, ways of interacting, manners (Marrelli et al. 2005) to broader culturally determined behaviors. In medicine, this is articulated as “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice” (Epstein and Hundert 2002; Norman 1985).

All MH, medical, dental and nursing fields have proposed competencies that are primarily emphasized and evaluated during training, followed by multiple-choice tests for becoming certified/boarded to establish a minimum clinical care capacity. Most are in line with the competency definitions above and use the word capability (or a synonym like “ability”). Fields strive for validity, reliability, feasibility, and other practical considerations regarding assessment. The hope is that what is measured also has fidelity to actual practice. In psychology and psychiatry, some psychology boards have both oral and written exams and some certification bodies (e.g., American Board of Professional Psychology (ABPP)) bodies use oral exams, as well; otherwise, oral examinations/boards have been generally discontinued due to inadequate validity and subjectivity in assessment. Many things are difficult, still, to assess, like skill in self-assessment and reflection, decision-making, and handling ethical dilemmas. Peer review is a staple in medicine, along with things like morbidity and mortality conferences, but these do not reduce the rate of medical errors (Institute of Medicine 2000, 2001).

Examples of Competency Movements: Psychology and Medicine

Psychology has worked for several decades to identify and assess practice competencies primarily during graduate training (Rubin et al. 2007). Beyond graduate level training, there has been little focus on competency in independent practice. Models that define psychology competencies and levels of competency have been developed (Fouad et al. 2009; Rodolfa et al. 2005, Rodolfa et al. 2013), but remain more conceptual than applied in practice. In psychology, one model

conceptualizes competencies for the practice of psychology across four developmental levels: (1) entry level supervised, (2) advanced supervised, (3) entry to practice through 3 years, (4) after 3 years of practice (Rodolfa et al. 2013). Psychologists put forward guidelines for assessing competencies (Kaslow et al. 2007; Leigh et al. 2007) and identified challenges to this process (Lichtenberg et al. 2007).

The American Psychological Association Educational Directorate published a guidebook on competency benchmarks in 2012 (American Psychological Association Educational Directorate). More recently, the Association of State and Provincial Psychology Boards (ASPPB) made notable efforts to define and measure competencies for psychologists who practice independently (ASPPB 2014). The concept of maintenance of competencies and developing a skill-based assessment at the time of licensure renewal is a current project. This substantial work by psychologists will lend itself to telecompetencies at some point. The Association for State and Provincial Psychology Boards (ASPPB) is currently developing a skills based exam to be used by psychology licensing boards.

Competency-based medical education focuses on skill development more than knowledge acquisition (Frank et al. 2010; Accreditation Council of Graduate Medical Education (ACGME) Lifelong Learning 2014). ACGME specifies domains of patient care, medical knowledge, practice-based learning and improvement, systems based practice, professionalism, and interpersonal skills and communication (ACGME 2013). The evidence-based CanMEDS competency framework describes the knowledge, skills and abilities that specialist physicians need for better patient outcomes, based on the seven roles that all physicians play: (1) medical expert, (2) communicator, (3) collaborator, (4) manager, (5) health advocate, (6) scholar, and (7) professional (Royal College 2005; Frank 2005).

The TP competencies (Hilty et al. 2015c) (Table 1) followed a review of TP education and training (Sunderji et al. 2015) and medical education competencies (Harden et al. 1999; Callan et al. 2016; Cassel 2004). The authors suggested (1) novice/advanced beginner, competent/proficient, and expert levels; (2) domains of patient care, communications, system-based practice, professionalism, practice-based improvement, knowledge and technology know-how; and (3) pedagogical methods to teach and evaluate skills.

These competencies were adapted from the milestone levels of the Dreyfus model: Level 1—novice (medical student); Level 2—advanced beginner (first-year resident); Level 3—competent (senior resident); 4—proficient (graduating resident); 5—expert (expert in TP) (Dreyfus and Dreyfus 1980).

Teaching and Assessment Methods of Competencies

Each client/patient, learner and teacher walk different professional and personal paths, such that meeting goals requires

careful listening, systematic collecting of information and deliberate reflection and planning (Miller 1990). Ideally, one determines the objective/goal, picks the instructional method (e.g., bedside/clinic, case/discussion format), and stages the educational events (Kolb 1984). Assessment must be viewed as a continuum from the earliest stages of professional training through continued learning in practice (Bashook 2005). Self-assessment is expected in many regards, particularly with regard to expertise, its limits and what to do when those limits are reached (Leigh et al. 2007).

Elementary evaluation should include four different levels: (1) reaction, (2) learning, (3) behavior, and (4) results (Kirkpatrick and Kirkpatrick 2009). Level one evaluation assesses a participant's reactions to setting, materials, and learning activities, ensuring learning and subsequent application of program content (Rouse 2011), and can be captured through satisfaction ratings. Level two of evaluation involves determining the extent to which learning has occurred, often employing performance testing, simulations, case studies, plays, and knowledge exercises (e.g., pre-and post-test). Level three attempts to determine the extent to which new skills and knowledge have been applied 'on the job', such as in the healthcare setting. Level four of evaluation involves measuring system-wide or organizational impact of training.

Disciplines Practicing TBH: Comparing Similarities and Differences of Steps toward Competencies

Overview

TBH competencies are an opportunity for common ground and standardizing its training and assessment could add to traditional licensing, board or clinical guidelines and standards. Since psychiatry, psychology, social work, counseling, marriage/family and other related fields vary in many regards, though, is it realistic to get providers capable at a common level? Some disciplines have unique skill sets (e.g., psychiatric prescribing, pastoral counseling). Common training goals for specific clinical skills are possible (e.g., mental status exams, intake, informed consent, assessment, triage, treatment planning, termination). There is also a foundation of legal, ethical and privacy standards. TBH may require better planning in order to deal with emergencies (e.g., understanding originating site and community emergency resources, including response times for fire and police departments, working with local collaborators). Overall, intra-professional and inter-professional consensus would be a worthy goal for TBH competencies. An outline for interprofessional TBH competencies was introduced in the early 2000s (Maheu et al. 2004).

Behavioral disciplines approaches to practice with technology can be compared competency targets (Tables 2 and 3). This comparison uses the TP domains of client/patient care,

Table 2 Teaching and assessment methods for telebehavioral health based on the telepsychiatric competencies

Teaching/method	Context	Competencies addressed	Learner assessment methods
Didactic teaching			
Brief didactic	Classroom or clinical setting in person, by telemental health (TMH) or web-based	Patient care, systems-based practice, Technology—knowledge at the pre- and core competency levels	Written tests: multiple-choice questions, short-answer questions
Grand rounds or longer didactic	Classroom in person, by TMH or webinar	Research and trends; correct misconceptions To engage/interest learners further Less effective for attitudes and skills	
Case-based learning			
Brief vignettes	Individual learning (in-person or web-based) or in small groups	Patient care, system-based practice, Technology—knowledge for all levels of competency	Case-based written tests: multiple-choice questions, short-answer questions
Complex, multi-step cases		Apply and generalize knowledge Good for developing treatment plans Effective for highlighting key nuances	
Patient interviews			
Observing faculty	Live in telehealth suite, at distance or by recording	Patient care, communication, Technology—primarily at the pre-competency level	Reflection journal
Group observed or co-interviewing	Group all in telehealth suite; learners take-turns with assessment; group and supervisor feedback. Can use separate room or 2-way mirror.	Patient care, communication, professionalism, Technology—primarily at the pre-competency and competency levels Systems-based practice Can focus on engagement, interpersonal and communication skills	Direct verbal feedback
Observed	Supervisor observes in-time live or via distance	Allows for group/discussion and reflection (e.g., professionalism, cultural factors)	Direct verbal feedback
Independent with review and/or distance supervision	Learner conducts interview on own with later review of video or case presentation	Patient care, communication, technology—all competency levels Professionalism, technology—core to advanced competency levels Independence/autonomy can aid development of roles of manager, collaborator and administrator—establish practice patterns	Review of completed report Review of completed report
Simulation—with video or standardized patients	Use of standardized patients or pre-taped video clips	Patient care, communication, systems-based practice—core to advanced competency levels Ability to watch/reflect on own performance Develop more advanced skills (e.g., administering tools; safety/risk)	Feedback in real time
Quality improvement			
Case write-ups	By trainee with mentoring; feedback; submission for publication	Systems-based practice, practice-based learning—all levels of competency	Written or verbal discussion and feedback
Literature reviews		Synthesis of complex cases; policy-oriented factors, administration	Feedback through peer review process if indicated
Quality improvement projects			
Learning through teaching			
Program consultations via TMH	Learner observes/participates/leads with distal teams (e.g., review cases)	Systems-based practice, practice-based learning—all competency levels	Reflection journal for observation.

Table 2 (continued)

Teaching/method	Context	Competencies addressed	Learner assessment methods
Provide didactic sessions via TMH	Learner observes/participates/leads with distal primary care teams	Consult to interprofessional teams, systems-based practice skills and collaborative care Systems-based practice, practice-based learning—all competency levels Consult to interprofessional teams, systems-based practice skills and collaborative care Systems-based practice, practice-based learning—all competency levels Enhance interprofessional and collaborative skills, build professionalism skills, and establish community of practice	Feedback solicited from distal primary care team Reflection journal or evaluation by distal participants Evaluation forms completed by distal participants
Group and interprofessional learning (e.g., journal club)	Live or via web/social media		

communications, system-based practice, professionalism, practice-based improvement, knowledge and technology know-how. This comparison focuses on content, process and the vision of the disciplines rather than stratifying competencies across novice/advanced beginner, competent/proficient, and expert levels. The documents from the many disciplines discussed technology issues variably and were rated: tier 1 (mentioned as important in a document; given one checkmark); tier 2 (discussed in-depth (suggestions on how to approach and/or evaluate; given two checkmarks); and tier 3 (evidence based). Few if any documents were rated tier 3.

The scope of existing documents is broad (e.g., practice of telepsychology; standards for technology and social work practice), mid-range (e.g., American Telemedicine Association's video- or Internet-based services), and/or narrow (e.g., preliminary guidelines for using social media). The field of psychology has spelled out considerations for using technology in practice, and social work and marriage and family therapy have also begun significant work on how the Internet, social media and other asynchronous communication options influence practice.

Since the TP competencies are the most well described model to date, these will be described first and other disciplines' work thereafter.

Psychiatry and the TP Competencies

The TP competencies (Hilty et al. 2015c) (Table 1) followed the four milestone levels of the Dreyfus model (above), but this was simplified to three levels: novice/advanced beginner (e.g., advanced medical student, early resident, or other trainees); competent/proficient (e.g., advanced resident, graduating resident, faculty, attending, or interdisciplinary team member); and expert (e.g., advanced faculty, attending, or interdisciplinary team member). Patient care was divided into two parts: (1) clinical history, interviewing, assessment, and treatment; and (2) administrative-based issues related to care documentation, EHR, medico-legal, billing, and privacy/confidentiality. Systems-based practice includes outreach, interprofessional education (IPE), providers at the medicine-psychiatric interface, geography, models of care, and safety. Attitude, integrity, ethics, scope of practice and cultural and diversity issues were grouped within professionalism. Communication, knowledge and practice-based learning domains added additional dimensions and an additional domain of technology has been suggested to include some behavioral, communication and operational aspects related to technology.

An example core competency is history taking. A novice practitioner would probably just start the session with the client/patient, but a competent/proficient provider would open the session with an informed consent discussion for telehealth, which involves providing information, alternative options and a tacit summary of pros/cons. S/he would also collect basic

Table 3 Telebehavioral competencies: a comparison of psychiatry, psychology, social work, marriage and family therapy competencies, guidelines, position statements, and other documents

Domain/competency	Psychology (Canadian and US combined)	Social/work	Marriage and family therapy	Psychiatry (US and Canadian combined)	American Telemedicine Association
Patient care	✓	✓	✓✓	✓✓	✓✓
Informed consent	✓✓		✓	✓✓	✓✓
Assess patient/client attitudes/readiness				✓	✓
Adapt assessment principles	✓✓	✓		✓✓	✓✓
Interpersonal factors/engagement	✓✓		✓✓	✓✓	✓✓
Adapt management principles	✓			✓	✓✓
Communication	✓	✓	✓	✓	✓✓
Telepresence	✓				
Cultural issues	✓✓	✓		✓✓	✓✓
Language/interpreting				✓✓	✓✓
Systems-based practice	✓		✓	✓✓	✓✓
Privacy and confidentiality issues	✓✓		✓	✓✓	✓✓
Disposal of data, if applicable	✓✓				
Billing/reimbursement/documentation				✓	✓✓
Legal issues	✓✓	✓	✓	✓	✓✓
Emergencies	✓		✓	✓	✓
Interprofessional education				✓	✓
Special populations				✓	✓
Professionalism	✓✓		✓	✓✓	✓✓
Attitude				✓	✓
Ethics	✓✓	✓✓	✓	✓	✓
Scope and care versus consultant roles	✓			✓	✓
Practice-based learning	✓	✓	✓	✓✓	✓✓
Quality improvement	✓			✓✓	✓✓
Teaching and learning				✓	✓
Knowledge	✓✓	✓	✓	✓✓	✓✓
History				✓	✓✓
Evidence base	✓✓	✓	✓	✓	✓✓
Evidence base comparing technologies	✓✓	✓	✓	✓	✓
Guidelines	✓			✓	✓✓
Technology	✓✓		✓✓	✓✓	✓✓
Selection	✓✓		✓✓	✓	✓
Technical skills	✓	✓✓	✓✓	✓✓	✓✓
Remote site design/preparation				✓	✓✓
Education/training and licensing	✓			✓✓	✓
Formative training	✓	✓	✓✓	✓	
Andragogic methodology				✓✓	
Evaluation: individual and program				✓	✓
Linkage to life long learning	✓		✓	✓	✓
Research	✓	✓	✓	✓	✓
Licensing/examination			✓✓	✓	✓
Other technologies in practice	✓	✓	✓✓	✓	✓
Social media	✓ - ✓✓1	✓	✓✓	✓	✓
Apps				✓	✓
Internet	✓✓1	✓	✓✓	✓	✓✓

Table 3 (continued)

Domain/competency	Psychology (Canadian and US combined)	Social/work	Marriage and family therapy	Psychiatry (US and Canadian combined)	American Telemedicine Association
Asynchronous communication (e.g., e-mail, text)	✓✓1	✓	✓✓	✓	✓

1. NZ = New Zealand

2. ✓ = mentioned as important in a document

3. ✓✓ = discussed in-depth in a document with suggestions on how to approach and/or evaluate

4. ✓✓✓ = evidence-based outcomes

information (if not already collected) about the remote environment, access to others for help, and community resources for worst case scenarios (e.g., the client/patient states suicidal thoughts during the interview). S/he would mention that it is not being recorded, which is a common misunderstanding for new clients/patients. There are now few if any cons to be discussed at this point (e.g., disconnections). Good TBH care includes do's and don'ts. A novice may not replace a handshake with other non-verbal behaviors or may not consider the omission of olfactory data (e.g., perfume, alcohol on the client's/patient's breath). A competent/proficient provider would adjust the screen and audio during the interview, particularly if screening for movement disorders, intoxication/withdrawal or other medical problems. S/he would project her/himself approximately 15% more for engagement as practices in the television, business and other industries. S/he would avoid dressing in a distracting way (e.g., bold stripes on ties, blouses/shirts or distracting earrings and bracelets). Initial and longitudinal evaluation/assessment would consider if the technology appears to affect the flow of conversation, client's/patient's presentation/personality, and/or development of transference. Cultural and language issues may also be affected by technology (e.g., willingness to use it, presentation of symptoms). Expert competencies may be a composite of TBH-specific, clinical reasoning, system-based practice, and/or administrative complexity.

The teaching and evaluation plan for TP competencies discussed a combination of methods related to curricular, rotation and supervisory contexts (Table 2). The overarching goals are to facilitate skill development over time via feedback (Hilty et al. 2015c) and program improvement (Tekian et al. 2015).

TP competencies described above are likely to be shepherded by the Association of American Directors of Psychiatry Residency Training (AADPRT), which has developed the other competencies, works with primary and specialty medicine areas, and reports to the ACGME. The American Board of Psychiatry and Neurology (ABPN) oversees board accreditation and regular recertification, with collaboration with AADPRT (clinical skill evaluations and verifications in

training) and lifelong learning platform created by the American Psychiatric Association.

American Counseling Association (ACA)

The ACA Code of Ethics addresses technology related to clinical practice and education (ACA 2014). Section H addresses "Distance Counseling, Technology, and Social Media." Section F.2.c. "Online Supervision" discusses that, "When using technology in supervision, counselor supervisors are competent in the use of those technologies. Supervisors take the necessary precautions to protect the confidentiality of all information transmitted through any electronic means" and F.7.b. "Counselor Educator Competence" addresses teaching via technology.

Marriage and Family Therapy (AAMFT)

Technology competencies—if adapted—would be shepherded by the AAMFT, which has used the term "Technology-Assisted Professional Services" and to a lesser degree, the term "Couples and Family Therapy Technology" (CFTT) practice. This organization recognized the great benefits and responsibilities inherent in both in-person and technologically-assisted therapeutic and supervisory services. In the recently published set of ethical standards published by AAMFT, the relevant section is Standard VI Technology-Assisted Professional Services (2015). It suggests that members (1) be aware of and compliant with the laws related to the delivery of technology-related practices, be sure that recommended technologies are appropriate for the recipient, transmission be secure, and be used after appropriate education, training or supervision; (2) obtain written consent for the provision of any technology-related services, including the risks, benefits, limitations, and potential issues around confidentiality and security, (3) be able to discern when services are appropriate and if so determine which kinds are most apt, and (4) participate in technology-related services only upon completion of the appropriate education, training, and/or supervision

(competence first, then practice consistent with best online practices).

The Association of Marital and Family Therapy Regulatory Board (AMFTRB) published the “Examination in Marital and Family Therapy” for marriage and family therapists, which addresses the use of various technologies. Indeed, participants in this examination are now assessed over a number of areas including the use of technology in accordance with legal, ethical and professional standards (Task Statement 06.17), the impact of clients’ use of resources including online assessments (Knowledge Statement 59), statutes, case law, and regulations related to online practices (Knowledge Statement 62), implications of the use of technology by clinicians and administrative staff (Knowledge Statement 65), ethical considerations in the use of technology by clinicians and administrative staff (Knowledge statement 66), the impact of technology on client systems (Knowledge Statement 67), and the conducting of online therapy (Knowledge Statement 68) (AMFTRB 2015). These guidelines specified clinical (i.e., skills, impact on relationships, ethics, informed consent, confidentiality), security and data management, and legal and regulatory issues.

Psychology (American and Canadian Psychological Associations)

Telepsychology competencies were raised within the scope of professional competence related to emerging telepractice issues (e.g., lack of adherence to limits set by licensing laws, informed consent requirements, mandated reporting, and other fundamental precepts of legal and ethical care) (Maheu and Gordon 2000). The Ohio Psychological Association (OPA 2013) published telepsychology competencies and Canadian psychologists published a proposed set of telepsychology competencies in 2014 (Johnson 2014). The American Psychological Association Guideline for the Practice of Telepsychology (American Psychological Association 2013) offers eight detailed components in guidelines which pertain to clinical (i.e., ethical, informed consent, documentation, confidentiality, adjusting assessments), educational, legal and regulatory and security and management of data (Table 4).

Social Work (NASW)

The NASW developed “Standards for Technology and Social Work Practice” in 2005 and worked with the Association of Social Work Boards (ASWB), Council on Social Work Education (CSWE), and Clinical Social Work Association (CSWA) to develop the Standards for Technology in Social Work Practice in 2017 (NASW 2017). Events at individual practitioner level were noted to include: e-mail and the Web make Internet-mediated direct practice possible on a global scale; social workers and clients can uncover vast Web-

Table 4 The application of technology to clinical practice and training: highlights from marriage and family therapy, counseling, psychology, and social work disciplines

American Counseling Association

1. Knowledge and legal. Counselors who engage in the use of distance counseling, technology, and/ or social media develop knowledge and skills regarding related technical, ethical, and legal considerations (e.g., special certifications, additional course work).
2. Informed consent and disclosure. Clients have the freedom to choose whether to use distance counseling, social media, and/or technology within the counseling process. In addition to the usual and customary protocol of informed consent between counselor and client for face-to-face counseling, the following issues, unique to the use of distance counseling, technology, and/ or social media, are addressed in the informed consent process:
 - a. Informed consent and disclosure.
 - b. Confidentiality.
 - c. Acknowledgement of limitations.
 - d. Security.
3. Client verification.
4. Distance counseling relationship.
 - a. Benefits and limitations.
 - b. Professional boundaries in distance counseling.
 - c. Technology-assisted services.
 - d. Effectiveness of services.
 - e. Access.
 - f. Communication differences in electronic media.
5. Records and web maintenance.
 - a. Records.
 - b. Clients’ rights.
 - c. Electronic links.
 - d. Multicultural and disability considerations.
6. Social media
 - a. Virtual professional presence.
 - b. Social media as part of informed consent.
 - c. Client virtual presence.
 - d. Use of public social media.

From: ACA Code of Ethics (ACA 2014).

Marriage and family

1. Maintain competence of psychology using technology: ensure their competence with both the technologies used and the potential impact of the technologies on clients/patients, supervisees, or other professionals (p. 793).
2. Ensure compliance with ethical standards: standards of care and practice are met at the outset and throughout the duration (p. 794).
3. Provide informed consent: obtain and document informed consent that specifically addresses the unique concerns related to the services and be cognizant of the applicable laws/regulations and organizational requirements (p. 795).
4. Protect confidentiality: protect and maintain the confidentiality of the data and information relating to their client/patients and inform them of the potentially increased risk of loss of confidentiality inherent in the use of the telecommunication technologies (p. 796).
5. Maintain security measures: protect data and information related to their clients/patients from unintended access or disclosure (p. 797).

Table 4 (continued)

6. Dispose data: dispose of data and information and the technologies used in a manner that facilitates protection from unauthorized access and accounts (p. 798).
 7. Adjust testing practices: consider the unique issues that may arise with test instruments and assessment approaches when used via telepsychology (p. 798).
 8. Comply with laws of the local jurisdiction: comply with all relevant laws and regulations of the clients/patients' jurisdictions and across international borders, if applicable (p. 799).
- From: Association of Marital and Family Therapy Regulatory Board (AMFTRB) published the "Examination in Marital and Family Therapy" (AMFTRB 2015).

Psychology

1. Maintain competence of psychology using technology: competence with the technologies used and the potential impact of the technologies on clients/patients, supervisees, or other professionals.
 2. Ensure compliance with ethical standards: meet the standards of care and practice.
 3. Provide informed consent: obtain and document informed consent that specifically addresses the unique concerns, laws and regulations related to the services.
 4. Protect confidentiality: inform, protect and maintain the confidentiality of the data and information related to the use of the telecommunication technologies.
 5. Maintain security measures: protect data and information from unintended access or disclosure.
 6. Dispose data: dispose of data and information and the technologies used in a manner that facilitates protection from unauthorized access and accounts.
 7. Adjust testing practices: consider the unique issues that may arise with test instruments and assessment approaches when used via telepsychology.
 8. Comply with laws of the local jurisdiction: comply with all relevant laws and regulations of the clients/patients' jurisdictions and across international borders, as applicable.
- From: The American Psychological Association Guideline for the Practice of Telepsychology (American Psychological Association 2013).

Social work

When using technology to provide services, practitioner competence and the well-being of the client remain primary. Social workers who use technology to provide services should evaluate their ability to:

1. Assess the relative benefits and risks of providing social work services using technology (for example, in-person services may be necessary when clients pose a significant risk of self-harm or injurious behavior, are cognitively impaired, require sustained support by a social worker with whom they have an ongoing professional relationship, or are in crisis)
2. Reasonably ensure that electronic social work services can be kept confidential. For example, the information provided by the client should only be accessible by those who require access and that the host of the server used for electronic communication agrees to abide by the privacy policies of the social worker.
3. Reasonably ensure that they maintain clear professional boundaries (for example, social workers should be mindful of boundary confusion that may result if they disclose personal information about themselves or others in an online setting to which clients have access)
4. Confirm the identity of the client to whom services are provided electronically at the onset of each contact with the client (examples include confirming a client's online consent with a telephone call; providing the client with a password, passcode, or image that is specifically for the client's use when providing consent electronically)
5. Assess individuals' familiarity and comfort with technology, access to the Internet, language translation software, and the use of technology to

Table 4 (continued)

- meet the needs of diverse populations, such as people with differing physical abilities.
- From: National Association of Social Workers, Association of Social Work Boards, Council on Social Work Education, and Clinical Social Work Association, Standards for Technology in Social Work Practice 2017.
- The goals of the original standard were to: maintain and improve the quality of technology-related services provided by social workers, serve as a guide to social workers incorporating technology into their services, help social workers monitor and evaluate the ways technology is used in their services, and inform clients, government regulatory bodies, insurance carriers, and others about the professional standards for the use of technology in the provision of social work services.
1. Provide services via the telephone or other electronic means shall act ethically, ensure professional competence, protect clients, and uphold the values of the profession.
 2. Access to technology and appropriate support systems to ensure competent practice, and shall take action to ensure client access to technology.
 3. Select and develop appropriate online methods, skills, and techniques that are attuned to their clients' cultural, bicultural, or marginalized experiences in their environments.
 4. Be responsible for becoming proficient in the technological skills and tools required for competent and ethical practice and for seeking appropriate training and consultation to stay current with emerging technologies.
 5. Shall abide by all regulation of their professional practice with the understanding that their practice may be subject to regulation in both the jurisdiction in which the client receives services as well as the jurisdiction in which the social worker provides services.
 6. Shall represent themselves to the public with accuracy and make efforts to verify client identity and contact information.
 7. Protect client privacy when using technology in their practice and document all services, taking special safeguards to protect client information in the electronic record.
 8. Shall ensure high-quality practices and procedures that are legally sound and ethical to protect clients and safeguard against litigation.
 9. Inform and mobilize communities about policies that will benefit individuals and groups and seek to provide tools, opportunities, and information so that clients are able to advocate directly for their own interests
 10. Shall strive to become and remain knowledgeable about the dynamics of online relationships, the advantages and drawbacks of non-face-to-face interactions, and the ways in which technology-based social work practice can be safely and appropriately conducted.
- From: National Association of Social Workers developed "Standards for Technology and Social Work Practice" (NASW 2005).

based sources for information that can enhance the likelihood of effective interventions; and support groups for people at risk can be easily created and moderated. At the agency level, these standards discussed case management programs, which can generate reports, track personnel, automate billing, forecast budgets, and greatly assist service planning and delivery. Finally, at the global level, consultation and conference abilities are at hand and emerging geographic information systems can pinpoint community assets and needs.

The specific goals of the standards are to maintain and improve the quality of technology-related services provided by social workers; serve as a guide to social workers incorporating

technology into their services; help social workers monitor and evaluate the ways technology is used in their services; and inform clients, government regulatory bodies, insurance carriers, and others about the professional standards for the use of technology in the provision of social work services. Specifically, social workers addressed clinical (i.e., ethics, skillsets, therapeutic relationship changes), modes of technology and support (e.g., Internet, video, telephone), cultural, education/training (i.e., clinicians, public), legal and regulatory professional practice, and privacy issues. They also inferred that clinicians select technology considering the modes' pros/cons.

Discussion

The state of TBH—a more fitting term than TMH—is improving due increased evidence and competencies are the integrative link between excellence in clinical practice, education and technology—they are much needed in this era of service delivery and health care. Traditional training, evaluation and faculty development can translate TBH research on clinical outcomes and models of care to generations to come. In turn, these clinicians will leverage resources more efficiently and have capacity to reach a wide range of populations (e.g., refugees across the world). Best practices from each discipline (AAMFT, ACA, American Psychiatric Association, American Psychological Association, NAADAC or AAP, NASW)—if shared and integrated for competencies—will potentially strengthen this movement. Technology is moving clinicians toward an e-practice with a broader array of options on an e-BH spectrum—competencies are needed for this practice, as well (Hilty et al. 2015b). From a learner perspective, new generations have advantages (e.g., positive attitude, facility and know-how with technology and disadvantages (e.g., personal rather than professional experience) (Behnke 2008; Bishop et al. 2011; Hilty et al. 2015a, b).

TBH competencies would have significant impact for the disciplines, organizations/associations and individual professionals. Traction most likely requires intra- and interprofessional, interest, communication and administration up and down the chain of hierarchy. Consensus by all the groups makes competencies stronger, as is the case with guidelines. Professional organizations are unfortunately, due to many other demands, unlikely put out individual competencies and they would not be standardized. After this initial work, the development of subdomain competencies among the different professions is logical; or some will use some but not others. Not having appropriate skill is a major risk—in-person or by TBH, of course.

If a competency model is used for employment decisions, it must adhere to rigorous state and federal standards and a substantially tested model would be requested (Marrelli et al. 2005). It seems fitting that competencies be integrated better

into existing standards for professional conduct, practice and treatment guidelines, clinical care, and scope of practice, which are promulgated by professional organizations/associations and by professional licensing boards. Disciplines and organizations involved with TBH need to consider certification/accreditation and ensure quality care. TBH is also a call to action as it behooves practitioners—whether practicing in-person or via TBH—to be fully aware of standards from their guild and the evolving law. Standards and guidelines of professional conduct are changing simply as a result of developing telehealth technology, but interpretations of conduct are needed and ongoing evaluation by professions is indicated.

The modest TP competencies were designed with a medical model of clinical care in mind, but the tiering of levels makes them broadly applicable to trainees, clinicians, and organizations in other MH disciplines. The foundation of pedagogy and evaluation can be improved and other disciplines' policies suggest that additional areas of practice and technology need to be added. Consensus-based approaches (i.e., Delphi) are being used by the Coalition for Technology in Behavioral Science (CTiBS) at this time to poll disciplines for input and improve draft TBH competencies. Much more input is needed from various stakeholders, including patients/clients, family/caregivers, professionals in healthcare, behavioral science, social science and technology; and leadership by professional organizations that function across disciplines (e.g., the ATA). Research and evaluation is needed regardless of the competency set, in order to evaluate the teaching/training and skill development by learners. Data collection could include literature review, observations, surveys, focus groups, structured interviews, behavioral event interviews, and other logs (Marrelli et al. 2005).

There are many limitations to this initial attempt to tackle the three questions about TBH competencies within/across disciplines/fields. First, core competencies across disciplines may make sense, but accessory/adjunct competencies are likely needed for many disciplines in order to capture the depth and breadth of their practice. Second, competencies must be evaluated, modified and improved—including the published TP ones. Third, aside from the developers, learners and many others involved, it is not realistic to expect TBH competencies to “work” without faculty development and corollary professional development; without involvement of major stakeholders (e.g., licensing boards, individual and organization certification and accreditation organizations, professional organizations). Fourth, it has not been discussed exactly how TBH competencies for clinical care and education direct align with serving patients' needs and expectations and how reimbursement streams align as well. In a time when patient-centered healthcare is expected, patient perspective in the development of guidelines is now a

standard (Tseng and Hicks 2016). Fifth, some institutions (e.g., Indian Health Service, Veteran's Administration) are unique and better integration with international standards and guidelines may be needed, considering the global reach of technology and its multicultural diversity. Sixth, it is unclear if "expert" levels are needed across professions, though this level is common in medical education and some other frameworks for training. Seventh, better definition within and between each of the professions or disciplines is needed (e.g., Table 3 makes broad generalizations).

Conclusions

TBH in the form of synchronous video conferencing is effective, well received and a standard way to practice. Current guidelines, policies and other documents discuss clinical skills related to technology, but only TP competencies provide a practical "how to" approach for training and evaluation. TBH competencies across psychiatry/medicine, psychology, social work, counseling, marriage/family, addictions, behavioral analysis and other behavioral sciences are needed to ensure quality of care, clinical skill, steer training, promote lifelong learning and spur organizational change related to technology. Levels of competencies such as novice/advanced beginner, competent/proficient, and expert could be linked to domains of patient care, communication, system-based practice, professionalism, practice-based improvement, knowledge and technology know-how—or other/better domains. TBH skill-based competencies may be part of a broader e-mental health spectrum of skills as technology moves patients, providers and systems into a new era of healthcare. Dilemmas may include finding common ground across disciplines, setting minimal requirements, training/continuing education/certification/accreditation, availability of resources and change management. Finally, research is needed and better integration of potential competencies with international standards and guidelines is suggested, considering the global reach of technology and its multicultural diversity.

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American Telemedicine Association and the Telemental Health Interest Group.

Compliance with Ethical Standards

Conflict of Interest The authors report no financial conflicts of interest. Co-author Marlene Maheu runs the for-profit Telebehavioral Health Institute (<https://telehealth.org/about-draft/>), which expressly sells Certification Programs (see <https://telehealth.org/faq/>, <http://telehealth.org/telemental-health-certification>) that this paper is expressly advocating for in its Abstract. Tracy Luoma is Executive Director at Optum Behavioral Health Salt Lake County. And Richard Long runs a potentially commercial supervision site that could potentially benefit from certification processes (see <http://mentalhealth-connect.com/process> for pricing). The authors alone are responsible for the content and writing of the paper.

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