

A Framework of Interprofessional Telebehavioral Health Competencies: Implementation and Challenges Moving Forward

**Marlene M. Maheu, Kenneth P. Drude,
Katherine M. Hertlein & Donald
M. Hilty**

Academic Psychiatry

ISSN 1042-9670

Volume 42

Number 6

Acad Psychiatry (2018) 42:825-833

DOI 10.1007/s40596-018-0988-1

American Association of Chairs of
Departments of Psychiatry

American Association of Directors of
Psychiatric Residency Training

Association for Academic Psychiatry

Association of Directors of Medical
Student Education in Psychiatry

Academic Psychiatry

Volume 42, Number 6
December 2018

- 747 Enhancing Empathy: a Role for Virtual Reality?
- 782 Developing a Digitally Informed Curriculum in Psychiatry Education and Clinical Practice
- 847 Incorporating Technology into the Psychiatric Residency Curriculum

 Springer

40596 • 42(6) 747-878 (2018)
ISSN 1042-9670 (Print)
ISSN 1545-7230 (Electronic)

 Springer

Your article is protected by copyright and all rights are held exclusively by Academic Psychiatry. This e-offprint is for personal use only and shall not be self-archived in electronic repositories. If you wish to self-archive your article, please use the accepted manuscript version for posting on your own website. You may further deposit the accepted manuscript version in any repository, provided it is only made publicly available 12 months after official publication or later and provided acknowledgement is given to the original source of publication and a link is inserted to the published article on Springer's website. The link must be accompanied by the following text: "The final publication is available at link.springer.com".



A Framework of Interprofessional Telebehavioral Health Competencies: Implementation and Challenges Moving Forward

Marlene M. Maheu¹ · Kenneth P. Drude² · Katherine M. Hertlein³ · Donald M. Hilty⁴

Received: 5 March 2018 / Accepted: 24 September 2018 / Published online: 3 October 2018
© Academic Psychiatry 2018

Abstract

Interprofessional telebehavioral health (TBH) competencies have been developed to standardize training and improve the quality of TBH care. The seven identified interprofessional TBH competency domains and three levels of expertise (novice, proficient, and authority) are briefly described. More in depth descriptions and examples of several of the competency domains are presented to illustrate what the competencies look like in practice. Some of the challenges faced in using such a competency framework are discussed.

Keywords Telebehavioral health · Competencies · Interprofessional education and training

The competency-based education movement began in the 1960s to focus on learner and teacher skills rather than knowledge [1, 2] and workforce competencies are standard for training, performance, and longitudinal professional development [3, 4]. An Institute of Medicine (IOM) 2001 report linked patient care and safety with training and a strong focus on competencies [5]. Competencies have been discussed by consensus- and evidenced-based guidelines, accreditation, and legal and regulatory agencies, but often incorrectly assumed to be present [6]. The IOM's Health Professions Education Summit (HPES) in 2003 identified objectives for the twenty-first century health care system for nurses, pharmacists, physicians, and allied behavioral health professionals—including use of technology [6, 7].

Interprofessional telebehavioral health (TBH) competencies were developed in 2017 by the Coalition for Technology in Behavioral Science (CTiBS) to standardize training and improve the quality and safety of care, the ultimate goals of professional licensing, boards, standards, and guidelines [8], though suggested as far back as 2004 [9]. A review of the TBH evidenced-based literature related to competencies [10]

found telepsychiatric competencies based on the Accreditation Council of Graduate Medical Education and CanMeds frameworks [11–13]. Primary sources for the TBH competencies included documents published by the: American Psychological Association [14], American Telemedicine Association [15–17], American Counseling Association [18], American Association of Marriage and Family Therapists [19], National Association for Alcoholism and Drug Abuse Counselors and National Association of Social Workers [20].

The CTiBS-developed TBH competencies are organized in seven competency domains for different segments of the behavioral health workforce at three competency levels (i.e., novice clinician, proficient clinician or authority; the term “authority” in this context has been used as to avoid the legal entanglements of the use of the word “expert”). The clinical, educational, and other barriers to implementation have not been mapped out. The CTiBS TBH competencies offer more depth in telepresence, legal and regulatory issues, and telepractice development than the previously published telepsychiatric competencies [11]. The TBH competency literature has also recently grown with specific additions to social media competencies [20, 21] and mobile health and app competencies [22]—the latter two in this edition. The breadth of telehealth as a “medium” to expand the reach of practice comes in conflict with the barriers of scope of practice.

Objectives for this article are to

1. Describe a process- and consensus-based, interprofessional coalition assembly that formed the competencies and provide an overview of the competencies,

✉ Marlene M. Maheu
mmaheu@telehealth.org

¹ Telebehavioral Health Institute, Inc., Cheyenne, WY, USA

² Private Practice, Dayton, OH, USA

³ University of Nevada, Las Vegas, NV, USA

⁴ VA, Northern California Health Care System, Sacramento, CA, USA

2. Review 4 example competencies in-depth to provide context, understand the differences between the levels of expertise and discuss barriers/solutions to clinical implementation, and
3. Discuss steps for a TBH competence framework to be successful, including change for organizations as well as input, collaboration and consensus from behavioral health professions, certification boards, and legal/regulatory agencies.

How A Process-Based, Interprofessional Coalition Moved Forward and an Overview of the Competencies

Approach by the CTiBS TBH Competencies Task Force, 2014–17

This interprofessional organization is dedicated to advancing the consensus- and evidence-based use of technology in behavioral health, which is most often understood as being served by nine professional disciplines. These disciplines include addiction specialists, behavior analysts, behavioral nurse practitioners, counselors, marriage and family therapists, psychologists, psychiatric nurses, psychiatrists, and social workers. These professionals are increasingly collaborating in teams, despite underlying theoretical disagreements and at times, conflicts and competition related to skills and training [23].

Several themes drove the development and refinement of the TBH competencies [8]. First, the term competency as used by the CTiBS Task Force is defined as a measurable human capability required for effective performance, with components of knowledge, skills, attitudes [6, 11, 24–26]. Second, the Task Force established and maintained a broad interprofessional representation to better assure that the group's effort would represent diverse, informed, and broad perspectives. Third, members had to have substantial TBH experience with national association standards or guidelines; stewardship and/or board membership in a national association; legal and regulatory boards; research and/or peer-reviewed publications; and/or pedagogy and evaluation. Fourth, the Task Force agreed to limit the focus on broad competencies related primarily to video conferencing, rather than those related to specific technologies (e.g., email, telephone, use of mobile apps, texting). Finally, review of publications included peer-reviewed literature and other noteworthy TBH contributions [11].

External Review Process, 2016–17

To be inclusive, the Task Force identified an interprofessional reference list for input from professional leaders of a variety of organizations. Leaders and organizations included but were

not limited to American Association of Marriage and Family Therapists, American Counseling Association, American Psychiatric Association, American Psychological Association, the National Association for Alcoholism and Drug Abuse Counselors (NAADAC) or the Association for Addiction Professionals, the National Association of Social Workers and the American Telemedicine Association. In 2016, a first wave of input was requested over a 6-week period on an initial draft set of TBH competencies. A rating scale was organized for each domain of the competencies through an online surveying tool (Qualtrics). The compilation of the comments spanned 25 typed pages, with both broad and specific suggestions. In 2017, a larger group of professionals, including the leadership of several national and international organizations, were asked to comment over a 6-week period. The structural approach was reaffirmed, domains were well supported, and the work was seen as helpful and practical.

Competency Levels and Domains

The process resulted in seven TBH competency domains within a framework to make these competencies measurable for three levels of proficiency: starting with *novice clinician*, then the *proficient clinician* and moving to the *authority* (Table 1; domain outline and level excerpt). Two of the domains included additional subdomains. Overall, the framework describes 51 behavioral objectives and 149 discrete, measurable behavioral practices.

The following are brief descriptions of each of the seven CTiBS competency domains, as TBH professionals can be asked to demonstrate how to

1. Clinical evaluation and care: make evidence-based decisions in the best interest of patients related to intake, triage, assessment, diagnosis, and therapeutic services across the patient lifespan; this included culture and diversity, linguistic, and socioeconomic characteristics. Included in this domain are the three subdomains evaluation and treatment, cultural competency and diversity and documentation, and administrative procedures.
2. Virtual environment and telepresence: apply appropriate techniques to maximize therapeutic atmosphere in both physical and virtual environments, to approximate an in-person relationship, to foster spontaneity, and minimize distraction and interruptions.
3. Technology: make informed decisions that reflect understanding patients' preferences for and experience with using technology; responsibly use the technology they choose and can demonstrate a functional knowledge of its strengths, applications, and limitations (e.g., privacy, confidentiality, data integrity, and security).
4. Legal and regulatory issues: demonstrate adherence to relevant federal, state/provincial, and local laws,

Table 1 Comparing skill, knowledge, and attitudes across a domain and subdomain (e.g., clinical evaluation and care)

Clinical evaluation and care: professionals provide a systematic in-person and/or TBH assessment, triage and intervention, and appropriate treatment services according to applicable oversight agencies, i.e., relevant international, federal, state/provincial, local, and organizational regulations, policies/procedures, and licensure/professional standards. This may require adaptation to a variety of settings and contexts in accordance with all legal/license/professional requirements.		
Cultural competence and diversity: professionals adhere to and apply relevant clinical, legal, regulatory, and ethical principles to address cultural, linguistic, socioeconomic, and other characteristics related to diversity.		
Documentation and administrative procedures: professionals systematically administer to ensure the quality and consistency of TBH care and to adhere to relevant oversight agencies and their policies/procedures.		
Insures/documents that all business associates are compliant with relevant laws, statutes, codes, and standards. Professionals make evidence-based decisions in the best interest of clients/patients.		
Clinical evaluation and care: Clinical TBH commonly includes		
Novice	Proficient	Authority
Assessment and treatment	Assessment and treatment	Assessment and treatment
1. Identifies factors related to clients'/patients' appropriateness for TBH services and considers that some clients/patients may not be appropriate).	1. Systematically assesses and identifies clinical, diagnostic, setting, population, and other factors that would preempt, complicate or exclude a technology	1. Develops, researches, and disseminates procedures to address complex clinical, setting, population, and other factors that would otherwise preempt, and complicate

- regulations and policies/procedures regarding TBH practice components, e.g., mandated reporting, informed consent, documentation, legal technology-related mandates, business associate agreements).
- Evidence-based and ethical practice: demonstrate adherence to TBH interprofessional and discipline-based professional standards, guidelines, consensus and evidence-based documents based on domestic and/or international practice; attend to professional boundaries relevant to a virtual setting (e.g., social media and digital information privacy). Included in this domain are the two subdomains standards and guidelines, and social media and digital information collection.
 - Mobile health technologies including applications (apps): demonstrate alignment with therapeutic goals (e.g., “good” app selection); assess positive/negative effects on the therapeutic relationship; and adhere to professional standards and state/provincial and/or federal law; help patients select options based on evidence.
 - Telepractice development: use technology to create and maintain one’s professional identity, engage the community at large, ensure the accuracy and validity of information, and attend to local, state/provincial, and federal regulations and professional association standards.

Competency Levels

Traditional competencies are organized based on a developmental progression from training to clinical practice [27]. The Dreyfus and Dreyfus [28] five-level framework was organized into three levels of proficiency: novice, proficient, and authority. Generally speaking, a clinician has to master all (or most of) the previous level’s skills (i.e., novice) to advance to the next level (i.e., proficient). However, with technology in particular, professionals in training may have technology-related knowledge and skills that surpass their instructors and mentors. The TBH competencies are framed with requisite in-person clinical expertise as a minimum. A short-hand differentiation would be that the *novice clinician* can identify, describe, educate, and adhere to fundamental clinical issues/practices and operate technology. The *proficient clinician* (often includes supervisors) level can also anticipate patient matters, implement TBH advances, develop a telepractice, and adapt laws, regulations, and administrative policies and procedures even if not yet fully elucidated). The *authority* may function in advanced clinical, leadership, and consultant roles or be a scholar, researcher, policy-maker, or trainer.

Review of 4 TBH Competencies and Levels of Expertise

TBH Example 1: Clinical Evaluation and Care

Overview

The TBH clinical evaluation and care domain includes triage, assessment, diagnosis, and therapeutic services across the patient lifespan. Professionals are expected to therapeutically engage patients, communicate clearly, and adjust to TBH technology-mediated options as needed to optimize care and safety. In-person and TBH care have many similarities (e.g., interview style, treatment planning, experiencing emotions) and substantial differences (e.g., establishing boundaries, administering assessments, managing emergencies). TBH professionals may face increased management challenges at a distance (e.g., protections for privacy and data security), adjustment to less familiar and/or unpredictable settings (e.g., oil rigs, fracking fields, ships, frontier clinics), and unreliable technology. Training also acknowledges and prepares clinicians for clinical challenges (e.g., ambiguous communication, interruptions and intrusions, culturally diverse populations, intoxication, suicidal ideation, emergency triage at remote site).

For the clinical evaluation and care domain, the TBH professional demonstrates that s/he (1) assesses for patient appropriateness for TBH services; (2) assesses and monitors patient comfort with TBH; (3) applies/adapts in-person clinical care

requirements to TBH; (4) implements and adapts a TBH service plan with policies/procedures adjusted accordingly; (5) monitors the therapeutic engagement related to each TBH modality; and (6) provides training, supervision, and/or consultation to others (for proficient and authority levels).

Novice Clinician The TBH novice clinician is expected to be able to identify patient appropriateness for TBH. They are trained to be able to interact with the patient, administer screening questions, and identify rare exceptions to appropriateness for TBH (e.g., technology phobia, paranoia that is palpable, imminent suicidal ideation).

Proficient Clinician The proficient professional can identify and select patients for TBH based on the appropriateness of referrals prior to engaging with a potentially at-risk patient based on setting (in a home, under a bridge, in a cab, in a professional office, on a locked ward) as well as on diagnoses from a distance. This professional would also have a back-up plan (e.g., familiarity with local emergency resources). The proficient clinician would ask about the patient's experience and preferences with the chosen technology and establish the privacy of the location of the patient. S/he redirects a patient who joins in from a public area. S/he would plan to avoid possible interruptions and/or intrusions (e.g., her/his site and the patient's) and manage a problematic technical connection by shifting to telephone and/or rescheduling as appropriate (e.g., telephone is not suitable if using eye movement desensitization reprocessing for trauma).

For videoconferencing, the clinician should have had adequate TBH training to know how to assess all types of patients and maneuver through essential components of an intake and assessment process by using a camera, microphone, monitor, and speakers. Adjustments to the setting and context may be needed (e.g., conduct a mental status exam with a substitute assessment item by video, if needed). Most importantly, the clinician needs to be proficient with statements and non-verbal behaviors to show empathy, engage better, and enhance the emotional connection with a variety of patients (i.e., LGBTQI, deaf, hard-of-hearing, blind, wheelchair-bound, cognitively impaired, children, elderly) or have cultural or linguistic expectations.

Authority The TBH authority has a broad perspective and advanced skills in one or more areas. Authorities may teach the fundamentals of TBH clinical care, supervision, and training to help others apply information and manage dilemmas/conflicts in complex clinical, legal, regulatory, ethical, and other issues. S/he may help with the integration of clinical care across settings, clarify documentation requirements, and work with inter-professional teams where requirements can differ across disciplines. S/he can help resolve conflicts that might otherwise preempt TBH (e.g., if and how patients who are dependent on opioids can be served interjurisdictionally through the Veterans Administration based on state and federal requirements).

Barriers to implementation and potential solutions:

1. Lack of TBH skills that affect therapeutic relationship (e.g., projecting self 15% more to avoid seeming "flat" on the video, not sitting to be in center of camera's view, lack of ambiance/privacy); this barrier can be addressed with training, consultation, and/or office re-design.
2. Lack of emergency planning (i.e., unexpected declaration of suicidal/homicidal ideation) that can be addressed by training and pre-planned procedures for such events.
3. Threats to continuity of care (e.g., serving a student via TBH who travels for a semester abroad, mobile employee); this can be addressed with guidance in legal and regulatory matters.

TBH Example 2: Clinical Evaluation and Care—Cultural Competence and Diversity Subdomain

Overview

Cultural competence and diversity provide principles for TBH professionals to make ongoing efforts to understand how cultural, linguistic, socioeconomic, and other characteristics related to diversity of both the clinician and patient with respect to therapeutic engagement, assessment, triage, treatment, and outcomes. An attitude of reflection needs to be created regarding cultural commonalities and differences. Language preference and skills to optimize communication are also needed (e.g., interpreter, consultant).

To meet the criteria identified by the CTiBS TBH cultural competence and diversity subdomain within the clinical evaluation and care domain, the TBH professional demonstrates that s/he (1) assesses for cultural factors influencing care; (2) creates a climate that encourages reflection and discussion of cultural issues in an ongoing manner; and (3) ensures communication with a reasonable language option.

Novice Clinician This clinician identifies obvious cultural factors, adjusts the clinical approach, and seeks appropriate consultation, if necessary. The novice clinician will note ethnicity/race per federal/state and professional practice standards and may identify commonalities and differences between the patient and her/himself.

Proficient Clinician This clinician systematically screens for, and differentiates between, regular and technology-specific cultural factors (e.g., preference for telephone rather than video). S/he proactively involves "cultural facilitators" (e.g., members of the cultural community) to assist with assessment and care and uses culturally sensitive and evidence-based approaches (e.g., assessment instruments like a cultural

formulation interview). S/he will inquire about primary language and employ a certified interpreter, if necessary. The treatment would explore how culture and language affect the story/narrative, development of therapeutic alliance, and impact of an interpreter. Overall, the clinician promotes a climate of humility and learning through reflection.

Authority The authority may research, train, and teach peer-reviewed, and when possible, evidence-based methods for problem-solving issues related to TBH and culture (e.g., determining if technology, the treatment, or the relationship is not working). A consultant may have suggestions regarding the therapeutic relationship and communication style related to cultural values, practices, preferences, and language.

Barriers to implementation and potential solutions:

1. As with in-person care, a clinician may errantly assume that patient's use of technology is based on her/his cultural frame (e.g., "all people of that particular culture use smartphones well"); this barrier can be addressed by cultural training to inquire or generalize rather than assume or stereotype.
2. Lack of awareness that cultural factors may/may not influence engagement with TBH in terms of experience with, preference for, and suitability of engagement (e.g., a patient may like one technology, but not another; a patient may/may not mention preferences due to hierarchical relationships); this barrier can be addressed by training and consultation, if applicable, and watch for changes within the therapeutic relationship

TBH Example 3: Legal and Regulatory Issues Domain

Overview

Legal and regulatory issues affect TBH practice internationally. The terms *legal*, *regulation*, and *laws* are defined in the original competency set [7]. Governmental laws and regulations for TBH practice include privacy, confidentiality, data protection/integrity, and security; inter-jurisdictional practice; and communications standards in the USA and other countries (e.g., the Health Insurance Portability and Accountability Act (HIPAA), Health Information Technology for Economic and Clinical Health (HITECH), Food and Drug Administration issues related to the Ryan Haight Act, Personal Information Protection and Electronic Documents Act (PIPEDA)). State/provincial laws and regulations for TBH practice (e.g., inter-jurisdictional practice) are usually related to practice requirements (i.e., medicine, nursing, counseling, psychology, social work). Relevant state/provincial and federal laws and regulations may also overlap or contradict each other.

Non-governmental regulatory requirements and recommendations from professional organizations, agencies, and

other authorities in other countries may also apply to TBH practice. Examples of such entities include Joint Commission, Council on Accreditation (COA), Utilization Review Accreditation Commission (URAC) and Healthcare Information and Management Systems Society (HIMSS) in the USA and according to other authorities in other countries.

The TBH legal and regulatory issues domain behavioral objectives are the following: (1) adheres to relevant laws and regulations; (2) practices in accordance with and educates others on the need to follow relevant legal and regulatory standards; (3) applies/adapts in-person standards to TBH; and (4) attends to contextual and overarching jurisdictional issues in a reasonable fashion.

Novice Clinician This clinician is expected to demonstrate knowledge of professional, state/provincial, and federal laws and/or regulations for the jurisdiction for their own location *and* that of patients at the time of service delivery. Additional privacy and security laws and regulations exist in some states or provinces. A relevant resource is the Center for Connected Health Policy [29].

Proficient Clinician The proficient clinician systematically understands the basic legal principles and is able to independently apply them in ambiguous situations with no clear guidance. With regard to *continuity of care*, laws regarding TBH may differ from jurisdiction to jurisdiction. This is key to patient-centered healthcare, since licensure requirements "follow the patient" at the time of contact. Potential interruption of services is anticipated, and a recovery plan provided in writing as part of a safety plan. If options for TBH are prohibitive, referrals are given just as one would in an in-person practice or consultation sought if needed to deal with highly ambiguous issues.

Decision-making related to the therapeutic relationship may vary, too, related to setting or type of technology preferred (email, telephone, text messaging, apps, and video). Given the clinician's legal responsibilities as a licensed professional, the TBH clinician is sensitive to employer rights as well as patients' rights and expectations with regard to technology. Complaints about TBH care most often arise in relation to other issues (abandonment, inappropriate boundaries, sexual misconduct, insurance fraud, death). Professionals working for or with patients from companies then, may want to ask questions about jurisdictional laws related to location of patients; availability of emergency resources for each patient in their local community for each TBH visit; the company's role, if any, in informing the clinician of differing jurisdictional issues (e.g., mandated reporting; continuity of care, documentation), and liability coverage for professionals serving a company.

Authority The authority consults and teaches others regarding TBH-related legal and regulatory issues.

Barriers to implementation and potential solutions: case example.

For the issue previously described, the authority may be called upon to advise or assist in a complex legal or ethical question (e.g., a drug treatment group providing residential services offering after-care services with the patient's primary counselors in three different states). Help may be needed related to clinical care, interjurisdictional supervision, and/or consultation by telephone and/or video teleconferencing.

The solution may include, but not be limited to, whether (1) the social worker/counselor is in compliance with all applicable licensing laws for TBH; (2) the supervising clinician with a license in only one state probably cannot legally offer supervision and may need to obtain licensure in the two additional states; (3) specifications for apps, email, text messaging, telephone, and video communication (e.g., a patient's privacy would need to be protected differently with regard to the telephone versus apps with behavioral diaries and daily self-assessments). Laws related to all other clinicians in digital communication with this supervisee and supervisor would also need to be reviewed. For example, if a psychiatrist is involved, joining an "Interstate Medical Licensure Compact" (<http://www.imlcc.org/>) may be helpful if one is available through his/her state.

TBH Example 4: Telepractice Development Domain

Overview

Many professionals already use technology and provide TBH services to create and maintain one's professional identity and to engage the community at large, even if they are not TBH clinicians. Many rules apply. A responsible clinician will engage marketing approaches, including technology, according to the client/patient sensitivities, legal, and ethical requirements (e.g., substantiation rule [30]; engaging with prospective clients/patients in a text or e-mail-based format prior to obtaining informed consent is illegal as per HIPAA).

For the CTiBS TBH telepractice development domain, the TBH professional demonstrates that s/he (1) develops a professional digital identity; (2) adheres to local, state/provincial, and federal regulations and professional standards for practice development; and (3) tailors the digital identity to the clinical care, culture, and business standards of the communities accessed and served.

Novice Clinician This clinician ensures s/he is aware of legal and ethical requirements with regard to use of testimonials/paid endorsements, confidentiality of those involved, offering realistic services based on the scope of practice and licensing. Specifically, s/he distinguishes between marketing online (e.g., impact of social media on interactions with patients) vs. in-person.

Proficient Clinician This clinician develops a well-designed in-person and/or online telepractice marketing plan, which accurately describes professional services, technologies used, and how services meet participants' needs (e.g., clients/patients, providers, administrators). S/he is aware of and proactively identifies and adheres to the relevant local, state/provincial, and/or federal laws (e.g., Federal Trade Commission, HIPAA, HITECH) [30]. Likewise, s/he follows professional association standards and guidelines (e.g., avoids making false or fraudulent statements, exerting undue influence over a patient when employing technology-based services, engaging in sexual innuendo, making crass or vulgar statements, or showing poor boundaries in images). Finally, s/he develops and uses a community outreach and/or a marketing plan to promote telepractice services in a culturally competent manner.

Authority The authority teaches, trains, and/or consults regarding peer- and evidence-based reviews of how technology can more broadly disseminate one's professional and personal identities vs. traditional in-person practice promotion strategies (e.g., social media vs. business cards). S/he gives input regarding issues related to pros/cons different marketing dissemination strategies related to additional services offered by professionals, including etiquette and legal requirements. S/he advises regarding the value of independent review of technology to determine appropriateness (e.g., marketing through websites and social media blogs, search engine advertising campaigns, webinars, eBooks, podcasts).

Barriers to implementation and potential solutions:

1. Inability to apply TBH practice to non-routine telepractice conditions (e.g., patients on an oil rig); this barrier can be addressed by planning ahead to anticipate issues, obtaining consultation if applicable, and discussing options with patient.
2. In-person clinician sets up a telepractice, without realizing there are existing laws TBH-specific standards for care and/or ethical, legal, and regulatory issues related to digitally presenting/projecting to one's professional identity and services to others, including networking and marketing practices this can be addressed by developing an approach to establishing telepractice with administrative, legal, and other consultation.

Discussion: Challenges in Moving the TBH Competencies Forward

Overview

The CTiBS TBH competencies are interprofessional, consensus-based process intended to promote quality of care

and an approach upon legal, regulatory, ethical, training, and policy issues. The TBH competencies are intended to serve as a starting place for continued interprofessional communication and collaboration in workforce development. They require implementation, teaching, supervision, and evaluation to determine reliability and validity. From the input received, the CTiBS TBH framework appears to have skills, knowledge, attitudes, and principles that apply across settings, professions, services, and practices, but more research is indicated. They are intended to be improved, updated, and adapted over time.

The primary focus for this competency framework is limited to videoconferencing, social media, mobile health, and telepractice development. These technologies and others are growing exponentially, and in the very near future, further extension toward artificial intelligence, sensors, and other options that change life and the landscape of psychiatry today.

Reasons that Competency Frameworks Fail

TBH competencies and programs face organizational, system, leadership, funding, and other challenges. For clinical care, TBH must provide a value. The “right champions” have to be in place to lead the effort. Clinical, coordinating, technical, and administrative components and teams have to be aligned for academic health centers or for a solo telepractice; requiring a business model for marketing, communication, and training. Evaluation should be both quantitative and qualitative, with the patient, staff, clinician(s), and others iteratively improving care. Legal, regulatory, financial, and other requirements need attention. The diffusion of innovation, generational differences, faculty development, and building a positive culture of learning and practicing with technology are discussed elsewhere [31].

A common pitfall for competency frameworks is confusing competencies/outcomes with knowledge acquisition and the shift in medicine from “knowing it all” to team leaders who facilitate and ask key questions has taken a great amount of time. For any competency framework to be effective in telepsychiatry, TBH, and social media, interprofessional prioritization is key rather than implementing “too many” discipline-specific, competencies. Focus on independent “silos” of competencies for TBH may unnecessarily stymie program directors, department chairs, healthcare system leaders, national organizations, and other bureaucratic agencies. In fact, many regulatory boards in the behavioral sciences have not yet published core requirements for the use of technology for their licensees. Furthermore, TBH competencies need to be more than an outlined curriculum for seminar; clinical experience, supervision, feedback, and other pedagogy methods [11, 22].

Training, Lifelong Practice, and Accreditation

Historically, rather than measuring competencies and their outcomes, many groups have developed training and granted

CE/CME on the good faith that clinicians are competent. The path through training, lifelong practice, and accreditation has disconnections despite common interest in collaboration and hierarchical reporting [10]. A longitudinal approach is needed with attention to transitions ranging from training to ongoing practice. This approach occurs in psychiatry and psychology but is more conceptual than applied in practice [32]. Examples of successful groups in this regard include the Association of State and Provincial Psychology Board (ASPPB) and the American Board of Psychiatry and Neurology (ABPN). ASPPB has made visible efforts to define, measure, and maintain competencies for independent practice psychologists [33–35] and develop a skill-based assessment for licensure. ABPN oversees board accreditation with certification and maintenance in coordination with the American Psychiatric Association lifelong learning platform.

Legal and regulatory, reimbursement issues, and the limitation of TBH competencies.

The TBH legal and regulatory issues competency domain [8]—as outlined in CTiBS TBH competency (discussed in “TBH Example 3: Legal and Regulatory Issues Domain” section above). It outlines how complex legal and regulatory requirements exist for privacy, confidentiality, data protection/integrity, and security across states, provinces, and federal governments (e.g., the Food and Drug Administration regarding the Ryan Haight Act). In addition, measurement-based care by the Joint Commission Standard CTS.03.01.09 has changed (see italics) to “The organization assesses the outcomes of care, treatment, or services provided to the individual served EP 1—the organization uses a *standardized tool or instrument* to monitor the individual’s progress in achieving his or her care, treatment, or service goals [36].

Overall, technology is not yet high on the radar of value-based care (VBC) and accountable care organizations (ACOs), which drive behavior through financing, insurance, delivery and payment angles per CMS [4, 37], and the Affordable Care Act (ACA). Federal regulation has increasingly dominated healthcare delivery [38], healthcare expenses remain predictable and many barriers exist for patients, as well as suppliers and physicians leverage services [39]. Regarding reimbursement, there is a positive, small trend toward greater telehealth and telephone care (e.g., hematology and thromboembolic diseases) [37]. The VA and other capitated or managed care organizations see the utility and efficiency of low-end technology [40]. To advance reimbursement requires a focus on workforce development with regard to developing consistency in performance.

There are several limitations to the TBH competencies outlined in this article. First, TBH is used differently by different professions as a “means” to an end, but not yet advanced as needing competencies an end in and of itself. An even broader consensus across organizations (e.g., American Medical Association, American Telemedicine Association,

Coalition for Technology in Behavioral Science) would provide improvements to make professionals aware that competencies are involved. Second, metrics are needed for training and its outcomes; all competencies must be measurable. Third, for both cross-sectional and longitudinal trajectories, both qualitative and quantitative evaluation of participants is suggested to iteratively improve the process. Fourth, universalizing the competency levels in using TBH may not be valid, given that TBH is utilized in multiple domains and phases. Indeed, research is needed during implementation, teaching, supervision, and may need to be customized for each setting and profession. Evaluation is also needed to determine reliability and validity. Finally, research is needed on organization change with technology and how a paradigm shift utilizing TBH re-contextualizes digital healthcare.

Acknowledgements The authors would like to thank American Association of Marriage and Family Therapists, American Association of Department of Psychiatry Residency Training, American Counseling Association, American Psychiatric Association, American Psychological Association, American Telemedicine Association, Canadian Psychological Association, The Coalition for Technology in Behavioral Science, National Association of Social Workers, and The Journal for Technology in Behavioral Science, Springer Nature Publishing

Compliance with Ethical Standards

Ethical Considerations IRB approval was not necessary due to this article being a review of the literature.

Disclosure On behalf of all authors, the corresponding author states that there are no financial or personal conflicts of interest. Two authors work as part of a non-profit institute, but that has no financial impact on this scientific work. One of the authors works for a for-profit institute, but that has no financial impact on this scientific work. The authors participate in national organizations, but do not have leadership positions, nor would that participation impact competencies, as far as can be ascertained. The authors alone are responsible for the content and writing of the paper.

References

1. Ford K. Competency-based education, history, opportunities, and challenges. UMUC Center for Innovation in Learning and Student Success (CILSS). <https://www.umuc.edu/innovatelearning/upload/cbe-lit-review-ford.pdf>. Accessed 5 July 2018.
2. Tuxworth E. Competence-based education and training: background and origins. In Deakin University Course Development Centre, editor. A collection of readings related to competency-based training. Victoria, Australia: Victorian Education Foundation and Deakin University, 1994. pp. 109–23. <http://files.eric.ed.gov/fulltext/ED384695.pdf>. Accessed 5 July 2018.
3. Hoge MA, McFaul M, Calcote R, et al (Eds). The Alaskan crosswalk: exploring competencies and credentialing for the state's direct care workforce: a report of the Credentialing and Quality Standards Subcommittee (CQSS), 2008. Anchorage, AK: The Alaskan Mental Health Trust Authority. Retrieved from <http://www.annapoliscoalition.org/resources/1/The%20Alaskan%20Crosswalk%20-%20Phase%20I%20Report.pdf>. Accessed 5 July 2018.
4. Centers for Medicare & Medicaid Services. Coverage of direct service workforce continuing education and training within medicare policy and rate setting: a toolkit for state medicare agencies. 2013. <https://www.medicare.gov/medicaid/ltss/downloads/workforce/dsw-training-rates-toolkit.pdf>, p. 12. Accessed 5 July 2018.
5. Sturmburg JP, O'Halloran D, Colagiuri R, Fernandez A, Lukersmith S, Torkfar G, et al. Health care frames - from Virchow to Obama and beyond: the changing frames in health care and their implications for patient care. *J Eval Clin Pract*. 2014;20(6):1036–44.
6. Institute of Medicine. Health professions education summit. 2003. <https://www.ncbi.nlm.nih.gov/books/NBK221516/>.
7. Institute of Medicine. The core competencies needed for health care professionals. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2003. p. 45. <https://doi.org/10.17226/10681>.
8. Maheu M, Drude K, Hertlein K, et al. An interdisciplinary framework for telebehavioral health competencies. *J Tech Behav Sci*. 2018. <https://doi.org/10.1007/s41347-017-0038-y>.
9. Maheu M, Pulier M, Wilhelm F, et al. The mental health professional and the new technologies: a handbook for practice today. Mahwah: Erlbaum; 2004.
10. Hilty DM, Maheu M, Drude K, et al. Telebehavioral health, telemental health, e-therapy and e-health competencies: the need for an interdisciplinary framework. *J Technol Behav*. 2017;2(3–4): 171–89.
11. Hilty DM, Crawford A, Teshima J, Chan S, Sunderji N, Yellowlees PM, et al. A framework for telepsychiatric training and e-health: competency-based education, evaluation and implications. *Int Rev Psychiatry*. 2015;27:569–92.
12. Accreditation Council on Graduate Medical Education. Common program requirements. 2013. <https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/CPRs2013.pdf>. Accessed 5 July 2018.
13. Royal College of Physicians and Surgeons. CanMEDS framework. 2005. <http://www.royalcollege.ca/portal/page/portal/rc/canmeds/framework>. Accessed 5 July 2018.
14. American Psychological Association Guideline for the Practice of Telepsychology. 2013. <http://www.apapracticecentral.org/ce/guidelines/telepsychology-guidelines.pdf>. Accessed 5 July 2018.
15. American Telemedicine Association. Practice guidelines for videoconferencing-based telemental health. 2009. Retrieved from <http://www.americantelemed.org/docs/default-source/standards/practice-guidelines-for-videoconferencing-based-telemental-health.pdf?sfvrsn=6>. Accessed 5 July 2018.
16. American Telemedicine Association. Practice guidelines for video-based online mental health services. 2013. <http://www.americantelemed.org/docs/default-source/standards/practice-guidelines-for-video-based-online-mental-health-services.pdf?sfvrsn=6>. Accessed 5 July 2018.
17. American Telemedicine Association. Practice guidelines for telemental health with children and adolescents. 2017. https://higherlogicdownload.s3.amazonaws.com/AMERICANTELEMED/618da447-dee1-4ee1-b941-c5bf3db5669a/UploadedImages/Practice%20Guideline%20Covers/NEW_ATA%20Children%20&%20Adolescents%20Guidelines.pdf. Accessed 5 July 2018.
18. American Counseling Association. Code of ethics. 2014. <https://www.counseling.org/resources/aca-code-of-ethics.pdf>. Accessed 5 July 2018.
19. American Association for Marriage and Family Therapy. Standard VI technology-assisted professional services. 2015. https://www.aamft.org/iMIS15/AAMFT/Content/legal_ethics/code_of_ethics.aspx. Accessed 5 July 2018.
20. 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. <https://www.naswpress.org/publications/standards/technology.html>. Accessed 5 July 2018.
21. Hilty DM, Zalpuri I, Stubbe D, et al. Social media/networking as part of e-behavioral health and psychiatric education: competencies, teaching methods, and implications. *J Technol Behav Sci*. 2018. <https://doi.org/10.1007/s41347-018-0061-7>.
 22. Zalpuri I, Liu H, Stubbe D, et al. A competency-based framework for social media for trainees, faculty and others. *Acad Psychiatry*. In Press.
 23. Scull A. Contested jurisdictions: psychiatry, psychoanalysis, and clinical psychology in the United States, 1940–2010. *Med Hist*. 2011;55(3):401–6.
 24. Hanley B, Scott H, Priest H. The impact of organisational change on professionals working within a community mental health team (CMHT): a psychodynamic perspective. *Psychoanal Psychother*. 2017;31(2):176–94.
 25. Martínez-Rodrigo JJ, Martí-Bonmatí L. Professional competencies: from conflict to opportunity. *Australas Radiol*. 2008;50(1):5–10.
 26. Marrelli AF, Tondora J, Hoge MA. Strategies for developing competency models. *Admin Pol Ment Health*. 2005;32(5–6):533–60.
 27. Miller GE. The assessment of clinical skills/competence/performance. *Acad Med*. 1990;65:s63–7.
 28. Dreyfus SE, Dreyfus HL. A five-stage model of the mental activities involved in directed skill acquisition. Berkeley, CA: University of California, Operations Research Center, 1980. <https://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA084551>. Accessed 5 July 2018.
 29. Center for Connected Health Policy. State laws. <http://www.cchpca.org>. Accessed 5 July 2018.
 30. Federal Trade Commission. FTC substantiation rule. 2017. <https://www.ftc.gov/public-statements/1983/03/ftc-policy-statement-regarding-advertising-substantiation>. Accessed 5 July 2018.
 31. Hilty DM, Maheu M, Drude K, et al. The need to implement and evaluate telehealth competency frameworks to ensure quality care across behavioral health professions. *Acad Psychiatry*. In Press.
 32. Hilty DM, Srinivasan M, Xiong G, et al. Lessons from psychiatry and psychiatric education for medical learners and teachers. *Int Rev Psychiatry*. 2013;25:329–37.
 33. Rubin NJ, Bebeau MJ, Leigh IW, Lichtenberg JW, Nelson PD, Portnoy S, et al. The competency movement within psychology: a historical perspective. *Prof Psychol Res Pract*. 2007;38(5):452–62.
 34. Rodolfa ER, Greenberg S, Hunsley J, et al. A competency model for the practice of psychology. *Train Educ Prof Psychol*. 2013;7(2):71–83.
 35. Association of State and Provincial Psychology Boards. Maintenance of competence for licensure (MOCL) White Paper. 2014. Retrieved from http://c.ymcdn.com/sites/www.asppb.net/resource/resmgr/Guidelines/Maintenance_of_Competence_fo.pdf.
 36. Joint Commission. Measurement-based care in behavioral health. https://www.jointcommission.org/assets/1/6/bhc_Joint_Commission_measures_webinar_041117.pdf. Accessed 5 July 2018.
 37. Chen CT, Ackerly DC, Gottlieb G. (2016). Transforming healthcare delivery: why and how accountable care organizations must evolve. *J Hosp Med*. 2016;11(9):658–61.
 38. Silbers JB. The affordable care act: objectives and likely results in an imperfect world. *Ann Fam Med*. 2013;11(5):402–5.
 39. Shi L, Singh DA. Delivering health care in America: a systems approach. 6th ed. Burlington: Jones and Bartlett Learning; 2015. p. 195–245.
 40. Hilty DM, Hwang T, Turvey C. Staying abreast of information in the information age: digital continuing education and leveraging technology to stay current for clinical psychiatric practice. *Curr Psychiatry Rep*. 2018;20(3):15. <https://doi.org/10.1007/s11920-018-0878-y>.