

# **A Study of Cognitive Adaptation Training in Inpatient Forensic Environments**

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## **Background**

### ***Overview***

The proposed project will be a mixed-methods feasibility study of modified Cognitive Adaptation Training for an inpatient forensic mental health population (finCAT). Cognitive Adaptation Training (CAT) is an evidence-based compensatory cognitive intervention that focuses on improving functioning through the provision of environmental supports and cues. CAT is typically applied in outpatient care but has been successfully modified for inpatient service contexts in a Netherlands trial and at CAMH in previous pilots for both forensic and non-forensic inpatient populations.

### ***The Impacts of Schizophrenia***

Of the major mental illnesses, which are responsible for 3.8% of hospital admissions in Canada (Health Canada, 2002), schizophrenia is one of the most costly. Though only present in 1% of the general population in Canada, schizophrenia accounts for an estimated \$6.85 billion annually in healthcare costs and lost productivity (Goeree et al., 2005; estimate based upon 2004 data). The impact on the lives of persons with this illness and their social networks are profound. People with schizophrenia typically have a poor quality of life, very low rates of employment, poor social relationships, poor physical health, and extremely high rates of mortality relative to the general population (Brown & Barraclough, 2000).

### ***Cognitive Symptoms of Schizophrenia***

Cognitive deficits are present in 70-75% of patients diagnosed with schizophrenia (Harvey, 2013), and have been shown to have a greater impact on function than either positive or negative symptoms (Keefe & Fenton, 2007). Efforts to address the cognitive impacts of schizophrenia can be broadly defined as falling into either compensatory or restorative categories. Compensatory approaches aim to circumvent cognitive deficits by changing the client's natural environment to support improved functioning. These compensatory strategies serve to bypass cognitive deficits and negative symptoms by organizing belongings and creating reminders and environmental cues to support specific adaptive behaviours. An example includes the packaging of individual items of clothing to be worn by day of the week, to simplify the process of choosing what to wear, decreasing the likelihood of clients impulsively putting on too many clothes, or dressing in a manner that is not a good fit for the weather or social settings (Maples & Velligan, 2008).

### ***Cognitive Adaptation Training (CAT)***

Cognitive Adaptation Training (CAT) is a manualized, compensatory approach pioneered by Dawn Velligan and colleagues that has shown considerable promise as a means to improve treatment adherence and functional outcomes. CAT begins with a neuropsychological assessment of clients to determine the best profile of strategies to be implemented for the particular individual. For example, clients with lower executive functioning likely require greater structure and more obvious visual cues (e.g., bright signs reminding the person to take their medication). Following the assessment, the CAT clinician typically spends 1-2 hours per week with each client developing an individualized profile of strategies based on the toolkit of options outlined in the CAT manual (see Velligan et al., 2000; 2002; 2008a; 2008b; and Draper et al., 2009 for descriptions of the intervention). A well-rounded set of strategies is implemented, modified, and monitored to address key domains such as hygiene, safety, dress, and medication. In past work, the CAT intervention typically lasted for 9 months per person.

Outcomes of randomized trials of CAT have been promising. Compared to control conditions, clients receiving CAT experience lower levels of symptomatology, lower relapse rates, higher levels of adaptive functioning, improved quality of life, and improved medication adherence (Velligan et al., 2000; 2002; 2007; 2008a; 2008b). In general, CAT has been shown to be beneficial for individuals with schizophrenia who vary both in degree and type of functional impairment. It has, however, been found to be more problematic for persons with high levels of paranoia as might be expected given the intensive home-based aspect of the intervention (Maples & Velligan, 2008).

### ***Modified Cognitive Adaptation Training***

Locally, a CAMH study of a modified version of CAT in which an intensive 4-month period of CAT (applied by a CAT Clinician) with 5 months of maintenance (applied by the existing case manager) was recently tested for an outpatient schizophrenia population. This study found a comparable degree of gains in functional domains relative to Velligan's RCTs and those gains were sustained during the case manager led maintenance period (Kidd et al., 2014). This model was also recently tested for an early psychosis population at CAMH with CAT, once again, delivering similar improvements in functional outcomes (Kidd et al., 2019).

### ***Inpatient Settings and Cognitive Adaptation Training***

While the majority of evidence supporting CAT is based on outpatient settings, there is emerging evidence to suggest that CAT may be beneficial to patients with schizophrenia on an inpatient basis as well. Studies in the Netherlands have shown a potential improvement in functioning following an intensive, 1 year period of the full CAT intervention within an inpatient setting (Stiekema et al., 2015, van der Meer, 2017). Our own clinical experience at CAMH suggests that CAT is feasible with an inpatient schizophrenia population (both forensic and non-forensic) with some adjustments to the intervention process, and a greater focus on goals related to room organization and personal hygiene relative to an outpatient population of individuals with the illness. Furthermore, the whole inpatient treatment team is engaged in the intervention, which allows for increased monitoring and modification of environmental supports, and a greater potential for knowledge translation. Evaluation outcomes (not formally researched) of this initial implementation of CAT modified for inpatient units indicated improved room organization and cleanliness amongst 26 recipients. Furthermore, no risks were observed in implementation as evidenced by no increase in code white incidents with evaluation participants, no use of provided environmental supports for violence or unintended purposes, and no incidents involving the evaluation clinician.

At present, there have been no studies examining the implementation of CAT on forensic inpatient units. In Ontario, length of stay varies greatly for individuals with schizophrenia admitted to psychiatric hospitals, with a length of stay ranging between 1 and 3234 days, and an average of stay of 96.6 days (Chen et al., 2017; based on 2005-2015 data). Clients on forensic inpatient units typically demonstrate longer, more predictable lengths of stay compared to an acute population due to Ontario Review Board proceedings and risk management protocols. Our own clinical experience at CAMH suggests that the more predictable length of stay of a forensic inpatient client creates a more stable setting for the delivery of CAT. Attempts to deliver CAT on more acute general psychiatric units have routinely experienced challenges related to unanticipated discharges, clients leaving against medical advice, or transferring to other rooms, units, or hospitals on short notice. Since the CAT intervention depends heavily on engaging a client in their living space, stability in that living space is inherent to the success of the intervention.

The current worldwide body of inpatient research on CAT utilizes specially trained inpatient nursing staff as their primary CAT Clinicians. In contrast, the majority of Canadian research on CAT has utilized occupational therapists as CAT Clinicians. A Canadian study by occupational therapist Raquel Williams et al. (2017) demonstrated that occupational therapists across Canada view CAT as relevant to their practice and scope. At present, there have been no studies examining the implementation of CAT by occupational therapists. Given the relevance of the CAT intervention to the scope and practice of mental health occupational therapists, and the presence of occupational therapists on all inpatient mental health units at CAMH, this staff population would be our primary target to be trained as CAT Unit Champions to support and maintain the delivery of CAT.

### ***The Proposed Project***

The proposed project will expand our knowledge of the role of compensatory cognitive interventions for forensic inpatient populations with schizophrenia. Over the course of 6 months, we will conduct a feasibility study of the delivery of a modified forensic inpatient version of Cognitive Adaptation Training. The objective of this single group study with pre-post and follow up assessments is to determine if preliminary outcomes and follow up findings support the feasibility of a modified version CAT within a forensic inpatient setting. Feasibility data will be used to inform (i) any necessary adjustments to the intervention, (ii) any necessary adjustments to the optimal time of study for outcomes to be observed, and (iii) to inform future trials with respect to anticipated recruitment and drop-out rates and optimal powering.

This study would be among the few examinations of CAT as an inpatient intervention to date, as well as the first to examine a modified cognitive adaptation training approach in both a North American and forensic inpatient setting, and would make a substantial contribution to the evidence-based intervention literature. This intervention will be referred to as forensic inpatient CAT or finCAT.

### ***The questions for this project are:***

#### **(1) Is finCAT feasible for forensic inpatient populations with a schizophrenia spectrum diagnosis?**

Based on preliminary work we hypothesize that finCAT will prove acceptable to patients and inpatient staff and will demonstrate positive outcomes with respect to functioning and inpatient room organization.

**And**

## **(2) What are the attitudes of inpatient forensic occupational therapists and clinical teams towards implementing finCAT on their units?**

### **Methods**

#### ***Study Design Overview***

This study will expand on our preliminary work at CAMH. The study will be implemented on four CAMH general security forensic inpatient units. There will be four weeks of CAT Clinician--delivered treatment focusing on two goal areas – room organization and personal hygiene, followed by two months of maintenance by CAT Unit Champions with pre, post, and two-month follow-up, as well as project-end evaluations. In the first four weeks, we will conduct a trial of finCAT for two of the four inpatient general forensic units, followed by two months of finCAT maintenance with Unit CAT Champions supported by the CAT Clinician. This process would then be repeated on the remaining two general units at CAMH. Previous implementation of CAT has demonstrated gains within one-month; however, follow-up assessments were not conducted to determine if gains were maintained over time. While brief, this time period (i) reflects the intent of this study as a pilot test of feasibility and, (ii) aligns with this circumscribed version of CAT (as compared to the more comprehensive community version with broader outcome domains). Data will be collected from both primary participants (inpatients) and the clinical team.

#### ***Participants***

Participants will be enrolled from four CAMH forensic inpatient units (medium security excluded). A total of 6 participants will be recruited from each unit for a total of 24 participants. Attrition is expected to be minimal given the inpatient context and previous delivery of CAT with this population. While previous data are not available for formal power analysis, this sample size is anticipated to prove adequate for the detection of medium-large effects though must be considered underpowered and will inform future power analysis.

Specific criteria include:

##### *Inclusion:*

1. A chart diagnosis of a schizophrenia spectrum illness.
2. Capacity to consent or availability of a substitute decision-maker to consent with the assent of the participant.
3. Participant residing on a CAMH inpatient forensic unit (general security)

#### ***Cognitive Adaptation Training (CAT)***

Cognitive Adaptation Training (CAT) is a standardized implementation of environmental supports for improving multiple domains of adaptive functioning including medication adherence, grooming, and activities of daily living in patients with schizophrenia. Environmental supports (signs, checklists, cueing devices) are manual-driven and grounded upon a comprehensive assessment of neurocognitive function and behaviour. Interventions for each functional deficit are based on two dimensions, (1) level of impairment in executive functions (as determined by scores on a set of neurocognitive tests) and; (2) whether the overt behaviour of the individual is characterized more by apathy (poverty of speech, movement, and the inability to initiate and

follow through on behavioural sequences), disinhibition (distractibility and behaviour which is highly cue-driven) or a combination of these styles (based upon scores from the Frontal Lobe Personality Scale (FLOPS)).

According to the CAT model, individuals with poor executive functioning need high levels of structure and more obviously placed environmental cues, while those with somewhat better executive functioning need less structure and more subtle cues. Individuals with apathetic behaviour benefit from environmental supports that cue and sequence behaviour, those with disinhibition benefit most from the removal of distracting stimuli and those with mixed behaviour benefit from a combination of these strategies. Assessment results yield one of six CAT classifications for which interventions can be targeted. These classifications appear in Table 1 below.

**Table 1:** CAT interventions fall into one of the six classifications below.

	<b>Apathy</b>	<b>Disinhibition</b>	<b>Mixed</b>
<b>Poor Executive Functioning</b>	Apathy/Poor	Disinhibited/Poor	Mixed/Poor
<b>Fair Executive Functioning</b>	Apathy/Fair	Disinhibited/Fair	Mixed/Fair

While the full-CAT program targets many areas of adaptive functioning (e.g. shopping, medication management, leisure skills), there is a subset of interventions designed specifically to improve organization and self-care. These goal areas will be the focus of the finCAT approach, modifying the intervention to be more relevant and feasible for an inpatient setting. Problems with dressing/grooming and housekeeping are described and examples of CAT interventions for each of these problems are presented in Table 2 below.

**Table 2:** Problems in adaptive function and examples of CAT interventions

<b>General Problem</b>	<b>Specific Behaviour</b>	<b>CAT Interventions</b>
<b>Laundry</b>	Washes clothing infrequently, runs out of clean clothing.	<ul style="list-style-type: none"> <li>- Add “do laundry” to weekly activity schedule.</li> <li>- Place signs at the bottom of underwear and sock drawers saying, “If this is the last one, I need to do laundry.”</li> </ul>
<b>Grooming</b>	Unkempt appearance, shirt not tucked in, hair not combed, etc.	<ul style="list-style-type: none"> <li>- Place a full-length mirror in an obvious location.</li> <li>- Attach a comb to the mirror with a string and a sign, “Is my hair combed? Is my shirt tucked in?”</li> </ul>

<b>Cleaning</b>	Throws trash (e.g. wrappers) on floor. Will over fill trash can.	<ul style="list-style-type: none"> <li>- Place trashcans in plain sight in open areas (particularly in places where wrappers are opened, etc., and trash accumulates on the floor).</li> <li>- Physically prompt use.</li> </ul>
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Once an individual’s CAT classification has been determined, strategies for specific functional problems (dental hygiene, laundry, housekeeping) are chosen from a series of tables. These basic strategies are then altered for strengths or weaknesses (relative to other outpatients with schizophrenia) in the areas of attention, memory, and fine motor skills. For example, for someone with poor attention, the colour of signs can be changed regularly or fluorescent colours can be used to capture attention. For someone with memory problems (particularly those with good auditory attention) audiotapes can be used to sequence behaviour.

CAT interventions are established and maintained in the client’s living space during weekly visits from a CAT therapist/trainer. CAT is a “user-friendly” intervention for both patients and therapists. Acceptance of the interventions has been very high by patients in previous studies. Supplies will be provided within unit contraband protocols.

For CAT on inpatient forensic units, CAT clinicians will (as relevant and possible) meet with unit staff/key supports of clients in the presence of clients and with their permission. They will educate the respective teams about CAT, provide team members with clear indicators of the client’s CAT goals and CAT strategies in place, and encourage them to assist with the reinforcement of the use of CAT tools and strategies.

**CAT Fidelity**

*CAT Clinicians:*

CAT will be provided by certified CAT Clinicians who have undergone intensive training, certification, and supervision in the intervention (occupational therapist CB).

*CAT Unit Champions:*

Implementation of evidence-based practices in routine mental health settings is often limited by clinician buy-in, training, and reinforcement (Torrey et al., 2001). To overcome these barriers, CAT Unit Champions will be recruited to promote, support, and maintain the implementation process. Unit Champions will be inpatient forensic allied health clinical staff, either occupational therapists, recreation therapists, behavioural therapists, or social workers. Unit Champions will be recruited voluntarily and will be provided with training on CAT hosted by the CAT Clinician described above. Training will include didactic education about CAT related constructs (i.e. cognition, executive functioning, apathy, and disinhibition), training in administering the interview and cognitive tests, on-the-spot training and supervision, designing a CAT-plan, and monitoring and modifying environmental supports. At the end of the training, all Unit Champions receive the materials and documents needed to provide CAT. Unit Champions will be supervised in their delivery of CAT, observe at least 4 CAT Clinician visits, and will subsequently be mentored doing CAT themselves on at least 4 occasions. Unit Champions will be able to contact CAT Clinicians over the study period informally for consultation and will be invited to attend a monthly community of practice for CAT. Unit Champions will also

be observed providing CAT at 4-week intervals up to the 5-month completion of the study period. Unit Champions will document their CAT-oriented contacts with clients.

### *Basic CAT Training*

To further address the barriers to implementing evidence-based practices described above, small educational group meetings will be organized for all individual inpatient teams to educate them on the basic principles of CAT. These meetings will be led by Student OTs familiar with the basics of CAT and repeated on each unit to maximize the number of staff trained. The basic CAT training is a 30-90-minute meeting in which information is provided about the rationale behind CAT and the steps involved. The educational meeting is provided on-site and includes an interactive component by training the team members in administering the Frontal Systems Behaviour Scale (FrSBe) and an opportunity to identify and uphold the goals of CAT supports in a client space.

### **Measures**

#### *Clutter Image Rating Scale (CIRS)*

Room organization will be measured by ratings on the Clutter Image Rating Scale (CIRS; Frost et al., 2008). The CIRS is a 9-picture visual analogue scale used to quantify and standardize the amount of clutter in 3 different living spaces (kitchen, living room, and bedroom). For this project, only the bedroom rating scale will be utilized. The CIRS is used to measure the severity of clutter in compulsive hoarding. It has been shown to be less affected by an over-reporting bias and to have strong inter-observer reliability with a strong participant/experimenter correlation. Before and after photos will be taken of each participant's room. These photos will be rated by 2 blinded student investigators with the mean rating taken.

#### *Life Skills Profile (LSP)*

Personal hygiene will be measured by scores on the Life Skills Profile (LSP; Rosen, Hadzi-Pavlovic, & Parker, 1989). The LSP consists of 39 clinician-rated questions on a four-point scale and measures various aspects related to daily life activities: self-care; non-turbulence; social contact; communication; responsibility. For this project, only the self-care ratings from the full LSP-39 will be completed by service providers. Current inpatient research on the use of CAT also uses this scale as a primary measure of the effectiveness of CAT. Scores will be obtained from the nursing staff not directly involved in the delivery of the finCAT intervention.

#### *Goal Attainment Scaling (GAS)*

Goal Attainment Scaling (GAS) will be employed as a sensitive measure of progress on individually defined goals. GAS has demonstrated good reliability and validity with severe mental illness populations (Hurn et al., 2006). Goal attainment scaling involves the setting of 3-5 goals, each operationalized on a 3-point scale. Goals are individualized to the client and assessment of progress is determined through consensus of the clinician and case manager.

#### *Evidence-Based Practice Attitude Scale (EBPAS)*

The attitudes of the team members towards finCAT will be measured using the Evidence-Based Practice Attitude Scale (EBPAS; Aarons, 2004) adapted to specifically target attitudes towards CAT. The EPBAS is a self-report questionnaire consisting of 15 items measured on a 5-point Likert scale ranging from 0 ('Not at

all’) to 4 (‘To a very great extent’) and consists of four subscales: (1) appeal, (2) requirements, (3) openness and (4) divergence.

*Essen Climate Evaluation Schema (Essen CES)*

The therapeutic alliance on the unit will be measured by clinician and client ratings on the Essen Climate Evaluation Schema (Essen CES; Schalast et al., 2008). The Essen CES is a 15-item questionnaire measured on a 5-point Likert scale ranging from ‘Not at all’ to ‘Very Much’ and consists of three subscales: (1) Patient’s Cohesion, (2) Experienced Safety, and (3) Therapeutic Hold. For this study, client and clinician ratings on the Therapeutic Hold subscale will be collected.

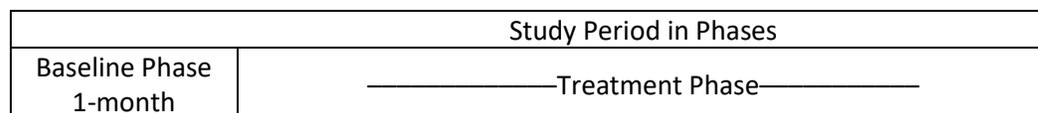
*Qualitative Care Provider & Participant Attitudes*

The attitudes of the team members and participants towards finCAT will also be measured using a qualitative feedback form created for this study. Questions will target attitudes towards finCAT, perceptions of the impact of finCAT, and perceptions of team tension or conflict arising or abating during the implementation of finCAT. Small focus groups with healthcare providers and individual interviews with interested clients will be facilitated by student investigators. Interviews will be audio-recorded and transcribed verbatim.

**Assessments**

The assessment timelines are described in Table 3.

**Table 3:** Study design and assessments



Assessment	Baseline	Pre-CAT	finCAT	Post-CAT	Follow-Up
Demographics	X				
CIRS	X	X		X	X
GAS		X		X	X
LSP	X	X		X	X
EPBAS	X				X
Essen CES	X				X
Attitudes					X

**Study Model**

**Study Overview** (finCAT = Forensic Inpatient Cognitive Adaptation Training)

WEEK	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
LGUC (n=6)	Base	Pre	finCAT				Post	Champion Follow-Up							Follow-Up									Provider Focus Group & Client Interview	
LGUA (n=6)	Base	Pre	finCAT				Post	Champion Follow-Up							Follow-Up										Provider Focus Group & Client Interview
LGUB (n=6)	Base					Pre	finCAT			Post	Champion Follow-Up						Follow-Up							Provider Focus Group & Client Interview	
LGUD (n=6)	Base					Pre	finCAT			Post	Champion Follow-Up						Follow-Up								Provider Focus Group & Client Interview

**Data Analysis**

For this analysis, primary variables are CIRS, GAS, and LPS scores. Secondary variables are the EBPAS and additional qualitative measures of care provider attitudes.

The data analysis is as follows: (1) A descriptive profile of demographic and baseline data will be developed; (2) We will develop a descriptive profile of session attendance; (3) We will compare pre/post/follow-up measures within treatment groups using ANOVA with posthoc analyses to determine change between time points. Cohen’s d will be used to assess effect size. For all analyses  $p < .05$  will be used as the level of significance.

Transcripts from focus groups and individual interviews will be thematically analyzed using a content analysis strategy as articulated by Hsieh & Shannon, 2005. The analysis will be validated through the use of 2 independent coders and full team reviews of code summaries.

**Recruitment**

All participants will be recruited through CAMH Complex Care & Recovery inpatient forensic services. Following orientation to the study for clinical teams, clinical staff will (i) first clear involvement with the individual’s MRP and then (ii) approach potential participants who they consider appropriate using the script provided in Appendix I. Participants will then be screened by research personnel via a referral form (Appendix II) to identify any potential exclusion factors (high paranoia, primary issue of hoarding, etc.).

Potential participants who indicate further interest in hearing more about the study and provide assent to be contacted by a member of the research team will then be contacted by a member of the research team who will engage them in a written informed consent process. At that meeting, participants will be provided with a clear explanation of the objectives, procedures, rights as a research subject, risks and benefits of the study and all questions will be answered prior to obtaining their signature on the informed consent document. If a participant is incapable of providing written informed consent, a member of the research team will meet with them and their Substitute Decision Maker (SDM) and provide the same briefing as described above prior to obtaining the SDM's signature on the SDM informed consent form. If the participant has the capacity to understand the significant of the research, an assent form will also be completed with the participant. If they are not interested in participating (dissent/do not assent), these prospective participants will not be included in the study, but will be informed they will be eligible to receive CAT at a later date. A member of the research team will connect with the participant at 1-month into the study to confirm their continued assent to participate. Should the participant want to withdraw at this time they will be removed from the study and a member of the research team will ask the participant if the previously collected data may or may not be used in data analysis. Consent for audio recording during the focus group will be obtained at both consent timepoints (entry and 1-month). If a participant does not consent to have their responses audio recorded during the focus group they may choose to have an individual interview that is not recorded.

All forensic inpatients identified by their treatment team as potential CAT recipients will be given the option to participate in the research study. Participation in the study is voluntary. The decision to participate will not affect patients' receipt of usual treatment or clinical services. Participants will be informed that they have the option of terminating their participation in the study and the intervention at any time, without consequence.

A delegated Research Coordinator will access personal health information (PHI) in I-CARE to determine eligibility of clients to participate in the research study. No PHI will be collected. PHI will not be accessed until informed consent or assent is obtained. .

For participating in the 30 individual interviews following participation in the finCAT intervention, clients will receive \$10 value in gift cards from Gifts of Light or Stamp Store stamps depending on preference. Care providers will not be reimbursed for their time as focus groups will occur during work hours.

### ***Confidentiality***

Assessments will be conducted in a private space on the unit to protect any sensitive information during data collection. All participant data will be de-identified using a consecutive numeric code/study identifier (e.g. first participant enrolled, is participant 1) as soon as possible after the participant has consented into the study. A master log will be kept in a password protected file on a secure server that links participants to their numeric identifier. All study specific documents will use a participant study identifier when it is required (e.g. assessment package). The minimum PHI necessary will be collected. No participant names will be used in the dissemination of study findings.

Electronic assessment data will be stored on a secure server that is password protected and only accessible by study personnel. Hard copies of assessment data and consent forms will be stored in separate

locked filing cabinets in a locked office at CAMH. Only the Principal Investigator and CAT Clinician will have keys to the filing cabinet. A master hard copy list indicating participant names and linking numbers will be kept in a separate file from the data and stored as noted above. A backup copy of the study data will be stored on an encrypted memory stick and kept in the locked filing cabinet in the locked office. Referral forms, consent forms and assessment hard copies will all be kept in separate locked filing cabinets.

Client-specific research data gathered as part of this study may be shared and provided to the participant's unit treatment team for client care. All client data gathered will be kept confidential within the participant's treatment team and the research project team. All other gathered data (i.e. staff data) will be kept de-identified, confidential, and anonymous.

With regards to the focus group, while the study team will take precautions to protect each participant's confidentiality we cannot guarantee that other members of the focus group will respect their privacy or keep the discussions of the group confidential.

All data will continue to be securely stored and protected for the required retention period of 10 years beginning at the study's closing date. Hard copies of original study documents will be in the study binder stored in a locked filing cabinet in a locked room at CAMH. Electronic data will be reviewed at the 5 year time point to ensure integrity as required. Destruction will occur at the end of the 10 year retainment period. The research coordinator will be responsible for the storage and destruction of participant data.

### ***Staff Procedures***

Allied health staff will be recruited from their respective units. If they verbally consent to participate in the research project, allied staff will complete the staff consent form with the research assistant. Allied staff will be invited to participate in an interactive workshop to facilitate their use of CAT strategies with clients participating in the research project, pre and post measures, and a focus group following the end of the intervention. Following the research study, allied health staff will be supported to continue the delivery of CAT on their units through a CAT Community of Practice.

Other treatment team staff (i.e. RNs) will be invited to participate in brief education sessions to familiarize them with CAT. Interested parties will also be invited to complete the Essen CES and staff focus groups. If they agree to participate in these measures, they will complete the staff consent form with the research assistant.

### ***Safety Protocol***

A CAT Clinician will be providing direct care to inpatient forensic clients with the support of Unit Champions who are familiar with both the client and the unit milieu. All CAT Clinicians and investigators will check in with the treatment team immediately prior to each interaction with inpatient clients and wear a personal alarm according to unit protocols. Investigators will make best efforts to meet with clients with Unit Champions. Student investigators will be accompanied by study or unit staff in all interactions. CAT interventions will in no way involve taking clients off the unit, and all investigators will exercise AWOL caution at unit entry points.

All environmental support supplies provided to clients will align with individualized unit policies and procedures, including but not limited to restrictions of no metal, no glass, no sharp objects, and no long ropes/strings. All items provided will be items participants could potentially purchase independently.

Research personnel may withdraw a participant from the study early if the researchers do not think it is in the participant's best interest to continue. Research personnel will discuss the reasons for the withdrawal with the participant. The study doctor may also end a participant's involvement in the study early, without their consent, for reasons such as:

- The study intervention does not work for them
- The participant is unable to tolerate the study intervention
- The participant is unable to complete all required study procedures

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## Appendix I – Recruitment Script

The script that would be provided to clinicians would be as follows:

“There is a research project that is running at CAMH that you might be interested in. It focuses on studying a cognitive intervention that is designed to help people who have experienced psychosis have more success in reaching their goals for recovery. The intervention uses a number of cognitive strategies, and if you took part you would receive personalized environmental supports for your space on the unit. If you are interested, I’d put you **[add if required: and your substitute decision maker]** in touch with the researchers who would tell you more about it. It is completely fine to say no and take a pass on this. Saying no won’t affect the care you receive here at any time, now or in the future. Feel free to take some time to think about it as well. What do you think?”

**Appendix II – CAT Referral Form**

Cognitive Adaptation Training Referral			
Unit/Service at time of Documentation			
Referral Requested By			
Primary Nurse or Case Manager			
Date of Referral			
Who should be contacted for information or questions regarding this referral?			
Name			
Extension			
Current Psychiatric Status			
<input type="checkbox"/> At baseline	<input type="checkbox"/> Persistent negative symptoms	<input type="checkbox"/> Active substance use	
<input type="checkbox"/> Actively psychotic	<input type="checkbox"/> Persistent positive symptoms		
<input type="checkbox"/> Has insight into symptoms	<input type="checkbox"/> No persistent symptoms		
Housing Type			
<input type="checkbox"/> Inpatient	<input type="checkbox"/> With Family/Spouse	<input type="checkbox"/> Boarding Home	
<input type="checkbox"/> Independent	<input type="checkbox"/> Homeless/Shelter	<input type="checkbox"/> Meals Provided	
<input type="checkbox"/> Supported	<input type="checkbox"/> Transitional	<input type="checkbox"/> Housing at Risk	
Approx. Length of Time in Current Housing			
Approx. Time to Discharge or Transfer		<input type="checkbox"/> 1-2 months	<input type="checkbox"/> 3-6 months
		<input type="checkbox"/> 6 months +	
– NOTE TO OUTPATIENT CLINICIANS – PLEASE COMPLETE PRE-VISIT HOME SAFETY RISK ASSESSMENT POWERFORM			
Client Factors			
<input type="checkbox"/> Paranoia	<input type="checkbox"/> Engaged with Staff	<input type="checkbox"/> Independent in ADLS	<input type="checkbox"/> Involved in Work
<input type="checkbox"/> Insight into Illness	<input type="checkbox"/> Engaged with Family	<input type="checkbox"/> Hoarding	<input type="checkbox"/> Involved in School
<input type="checkbox"/> Antisocial PD	<input type="checkbox"/> Social Involvement	<input type="checkbox"/> Infestations/Bedbugs	<input type="checkbox"/> Involved in Volunteering
Clinical Goals			
<input type="checkbox"/> CAT Clean Rooms	<input type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Social Skills	<input type="checkbox"/> Diet/Weight Management
<input type="checkbox"/> Home Safety	<input type="checkbox"/> Dental Hygiene	<input type="checkbox"/> Stress Management	<input type="checkbox"/> Employment Connection
<input type="checkbox"/> Attendance	<input type="checkbox"/> Housing Keeping	<input type="checkbox"/> Budgeting	<input type="checkbox"/> Education Connection
<input type="checkbox"/> Medication Management	<input type="checkbox"/> Organization	<input type="checkbox"/> Cooking	<input type="checkbox"/> Leisure Connection
<input type="checkbox"/> Transportation	<input type="checkbox"/> Harm Reduction		
Other relevant details or goal areas:			
Is client agreeable to referral?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Has client participated in CAT before?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Reasons for Re-Referral			
Complete FORCAT Referral Order		<input type="checkbox"/> Yes	

## Appendix III – Focus Group Script

“Welcome to the focus group for the fin-CAT study. The purpose of this focus group is to gather feedback on the recent introduction of finCAT to your unit. Specifically, we are interested in your feelings about finCAT as well as your thoughts about its impact and challenges during implementation.

Before we begin, I want to remind you about a few key pieces of information:

- All the information you provide during the focus group will be kept both confidential and anonymous
- You do not need to answer any question you are uncomfortable answering
- You may withdraw from the focus group at any time without reason
- You will not be compensated for your time in the study
- From your previous individual consents, we will record this session for research purposes. If have changed your mind and no longer wish to be recorded, please inform the researcher and you will be offered alternative accommodations.

The facilitator has 7 questions to prompt discussion. We value honest input and will use your feedback to improve the finCAT program moving forward. We would like to review the following ground rules before we get started:

- Don't hold back. It is safe for you to freely express your opinions without consequence. We also ask that you respect confidentiality of the information discussed in today's group.
- Please try to avoid sidebars (separate conversations, or body-language sidebars like eye-rolling, etc.).

Please set your phones to vibrate or off. You have right to challenge, criticize and/or disagree during the decision/discussion. All opinions are valued in this setting.

Does anyone have any questions before we get started?

Provider Focus Group Questions

1. How do you feel finCAT has influenced, if at all, your clients' organization on the unit?
  - a. If positively influenced, in what areas specifically did you see improvement?
  - b. If negatively influence, in what areas specifically did you see this?
2. How do you feel finCAT has influenced, if at all, your clients' self-care on the unit?
  - a. If positively influenced, in what areas specifically did you see improvement?
  - b. If negatively influence, in what areas specifically did you see this?
3. How did your clients respond to finCAT within your sessions?
  - a. How did that evolve throughout the course of implementing the program?
  - b. How can finCAT be further adapted to meet the needs of clients within an inpatient forensic practice setting?
4. How do you feel finCAT has influenced the relationship between clinicians on the unit?
  - a. Can you describe how finCAT contributed to any potential conflict or tension on your unit?
  - b. Did any challenges arise implementing finCAT inter-professionally?
5. How was the process of incorporating finCAT into your practice setting?
  - a. What factors supported the use of finCAT?

- b. What barriers did you come across in your practice?
- 6. What are your thoughts about the training sessions on finCAT
  - a. What did you like? What didn't you like?
  - b. What did you like about the format (e.g., length of sessions, # of attendees, facilitators)?
  - c. How could the training be improved?
  - d. Was the training for finCAT sufficient for your learning?
- 7. Any additional thoughts or comments that you would like to share?

#### Individual Interview Questions for Clients

- 1. How do you feel finCAT has influenced, if at all, your room organization on the unit?
  - a. What improvements did you notice about your room?
  - b. Do you think there is more room for improvement?
- 2. How do you feel finCAT has influenced, if at all, your self-care on the unit?
  - a. What improvements related to self-care (e.g., personal hygiene) do you feel you've had?
  - b. Do you think there is more room for improvement?
- 3. How did you feel during the finCAT sessions?
  - a. What made you feel that way?
- 4. What did you enjoy about finCAT?
- 5. What did you not enjoy about finCAT?
- 6. How did you find finCAT influenced your relationships with clinicians on the unit?
- 7. Any additional thoughts or comments that you would like to share?