Development of an Accessibility Features Manual for the Apple iPad for Brain Injury

Rehabilitation Staff

by

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The procedures in this manual are meant to be used by agency staff, as part of the broader services they provide, or under supervision of agency staff.
Abstract

This thesis explores the development of a manual centring on the accessibility features of the Apple iPad. The purpose of the manual was to help staff at a local brain injury rehabilitation agency help clients in the community use the handheld technology as an electronic assistive device for activities of daily living. Literature involving different assistive and rehabilitative technologies and their uses in the field of acquired brain injury (ABI) as well as research on rehabilitative iPad use is explored. The manual was created in order of appearance by features (i.e., first time use walkthrough, accessibility menu, alphabetical order of additional information such as assistive apps and gestures). The manual was developed at staff request and was initially presented to the full staff team via PowerPoint presentation. Feedback survey data on manual structure, the usefulness of content, and the probability of implementation was collected from staff members at the agency and used to prepare the final manual. Results indicate that rehabilitation staff at the brain injury service perceive the manual to be a useful tool for integrating iPads into a rehabilitative role for programs with clients with varying severity of brain injuries. The research examined in the literature review suggests that ABI rehabilitation staff are open to integrating new technologies into existing programs, however the literature is limited in regards to the develop of technical training manuals for these technologies. This thesis highlights a need for staff training in the use of assistive technology before it can be implemented in programs with clients. Limitations of this thesis include a limited sample size for feedback on manual use in the agency. This thesis adds to the limited research on iPad efficacy as it relates to ABI rehabilitation. Continued studies to assess the depth of possibility for the iPad as an assistive technology in various areas of brain injury rehabilitation is recommended.
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Table of Contents

Abstract ........................................................................................................................................... ii
Acknowledgements ......................................................................................................................... iii
Table of Contents .............................................................................................................................. iv
List of Tables ........................................................................................................................................ v
CHAPTER I: Introduction ................................................................................................................... 6
  Rationale for Project ...................................................................................................................... 7
  Thesis Statement ......................................................................................................................... 7
  Overview of Chapters ................................................................................................................ 7
CHAPTER II: Literature Review ....................................................................................................... 8
  Key Terms ..................................................................................................................................... 8
  Electronic Assistive Devices ....................................................................................................... 8
  Rehabilitation of ABI Using Electronic Assistive Devices .................................................... 12
  Teaching Individuals With ABI ............................................................................................... 13
  Conclusion ................................................................................................................................... 14
CHAPTER III: Method .................................................................................................................... 15
  Setting ......................................................................................................................................... 15
  Participants ................................................................................................................................. 16
  Materials ..................................................................................................................................... 16
  Design of the Manual ................................................................................................................ 17
  Feedback Procedures ................................................................................................................ 18
CHAPTER IV: Results ....................................................................................................................... 19
  Creation of the Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad ................................................................................................................................. 19
  Feedback Survey Results .......................................................................................................... 20
CHAPTER V: Discussion .................................................................................................................. 21
  Summary ..................................................................................................................................... 21
  Strengths and Limitations .......................................................................................................... 21
  Ethical Issues .............................................................................................................................. 22
  Strengths and Challenges for Implementation ........................................................................ 22
  Multilevel Challenges ............................................................................................................... 22
  Implications for the Field of Behavioural Psychology ............................................................. 23
  Future Recommendations ......................................................................................................... 23
References .......................................................................................................................................... 24
Appendix A: Feedback Survey for Staff ......................................................................................... 26
Appendix B: Manual Introduction to Staff Presentation ............................................................. 28
Appendix C: Accessibility Manual for Brain Injury Rehabilitation Staff: Apple iPad ......................... 31
List of Tables
Table 1: Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad
Contents .................................................................................................................... 28
CHAPTER I: Introduction

The brain is a fascinating organ which has borne the scrutiny of human curiosity for thousands of years. Researchers in neurology are still studying the structure and executive capacity of the brain and continue to make discoveries today. However, it has long been clear that for all its power, the brain is a fragile organ. An insult to the brain can result in devastating cognitive and physical impairments in an individual (“Severe TBI Symptoms,” n.d.). Effects of brain injury can be temporary or last a lifetime and can include poor memory, perseveration, and difficulty with activities of daily living (ADL) and initiation (“Severe TBI Symptoms,” n.d.). Due to impairments of cognitive and physical functioning following a brain injury, a person with an acquired brain injury (ABI) may be unable to live independently.

Long-term care following a moderate or severe brain injury often involves rehabilitation in hospital or in the community (Khan, Baguley, & Cameron, 2003). Rehabilitation focuses on returning an individual as close to a pre-injury state as possible, or helping him or her to adjust and discover alternative strategies for everyday activities (Khan, Baguley, & Cameron, 2003). However, even after physical healing, brain injuries can have global effects on individuals and their motor and/or cognitive abilities. It is sometimes necessary that individuals with brain injuries accept support from an array of caregivers and other professionals, including personal support workers, nurses, and family members. Lack of independence for ADLs such as dressing or preparing meals can lead to perceived diminished self-efficacy, and rehabilitation often focuses on increasing the level of independence a person with a brain injury has in his or her life (Khan, Baguley, & Cameron, 2003). Service providers, such as those at Community Brain Injury Services (CBIS) in Kingston, Ontario, often promote independence in their clients. CBIS staff foster independence in their clients by using various assistive technologies (AT). AT can be small manual devices such as calendars and notepads, or larger apparatuses such as canes and wheelchairs. AT can also be powered, as in electric wheelchairs and cell phones. CBIS encourages the use of smaller manual AT to help clients overcome deficits in memory and recall.

Rationale for Project

CBIS has recently purchased sets of two Apple iPads for its offices in Kingston, Brockville, and Belleville for staff to use with clients. Staff at Kingston CBIS rarely use the iPads available in the office. It is the author’s understanding that increasing staff familiarity with the devices will see an increase in their use. There are currently many online tips and instructions for individual iPad features, however, the author was unable to find a comprehensive guide to the accessibility features or instructions in iPad use tailored to the brain injury population. The iPads have built in programs and features that function in the same way as many of the tools CBIS staff promote and it may be more beneficial to clients to learn to use one device with a calendar, alarm, day planner, and contacts list than to learn to use individual tools with the same functions. Clients may purchase or be gifted iPads or similar devices and may turn to staff for instruction in use. In addition, the world is becoming increasingly electronically connected and the use of handheld computing devices is becoming ever more prevalent in society since the first Poqet PC was released in 1989. The likelihood that clients were exposed to electronic devices like iPads before or after their brain injury is high, meaning that the use of such devices may already be in a client’s repertoire. If clients have used an iPad or similar device prior to sustaining their ABI, then they may need to relearn to use the device as well as learn how to access needed accessibility features.
**Thesis Statement**

Because there have been a few studies (e.g., Kapur, Glisky, & Wilson, 2004, Charters, Gillett, & Simpson, 2015, and Szabo & Dittelman, 2014) demonstrating the usefulness of electronic assistive devices (EAD) for people with ABI, this thesis will examine the development of a manual created to assist staff in the use of EAD at an agency that works with individuals who have acquired brain injuries.

**Overview of Each Chapter**

There are five main chapters that make up this thesis. The Introduction includes a summary of the subject, the rationale for the electronic manual project that will be discussed in this paper, and the thesis statement, as well as this chapter overviews. The Literature Review will summarize, evaluate, and compare 16 empirical articles and two book chapters. The relationship between the items examined in the literature review will also be explored. Chapter III, the Method, will describe the manual format and design, and selection of participants who completed a feedback survey. The Results will include a summary of the electronic manual and an examination of feedback given in the feedback survey. In the final Discussion chapter, strengths and limitations, recommendations for future implementation, and ethical concerns will be discussed and a summary of the thesis will be included.
CHAPTER II: Literature Review

Key Terms
For the purposes of this paper, the terms brain injury and acquired brain injury (ABI) will both refer to moderate to severe acquired brain injuries unless otherwise specified. ABI is defined by “Brain Injury Terminology” (2015) as nondegenerative brain damage sustained after birth from an insult to the head. Two categories of injury are often applied under the term ABI: traumatic brain injury and internal brain injury. Traumatic brain injury (TBI) occurs when the head is exposed to external blunt force or penetrating trauma (Rispoli, Machalicek, & Lang, 2014), such as from a car accident or a fall. Internal injuries are those sustained through oxygen or blood loss/excess, which causes parts of the brain to die (Rispoli, Machalicek, & Lang, 2014). Hypoxia, anoxia, stroke, tumor, and hemorrhage are common examples of internal brain injury. ABI does not refer to impairments present at or before birth such as cerebral palsy nor does it include progressive diseases such as dementia.

This literature review assesses if the use of electronic assistive devices for individuals with ABI is as effective as using traditional manual assistive devices introduced in post-acute rehabilitation. A range of assistive technologies (AT) are explored through various studies which use AT with individuals with mild to severe brain injury, as well as different rehabilitation and teaching methods these AT pertain to. Limited studies were found involving the Apple iPad, which provides the same or similar functions as different devices and technologies discussed in this review, and some of these functions are examined in more detail. Usability, relevance to everyday functioning, and ease of learning of different AT are examined and compared between different AT in the following paragraphs.

Electronic Assistive Devices
Multi-functional electronic devices. Many different devices have been developed to assist individuals with ABI compensate for the deficits caused by their injuries. Assistive devices can be electronic, digital, or manual. Manual AT include devices such as pocket calendars and planners, notepads, and alarms, while electronic assistive devices include pagers, personal computers, microswitches, and smart phones. Many electronic devices, such as the iPad, perform multiple functions and can serve as a multi-use rehabilitative tool for individuals with ABI.

Kapur, Glisky, and Wilson (2004) examined technological memory aids used in the rehabilitation of adults who have non-progressive memory deficits such as those caused by TBI, encephalitis, or hypoxia. One such memory aid identified by Kapur et al. (2004), was the electronic organizer, which functions as a diary, scheduler, and archive for temporary or permanent information storage. Electronic organizers are palmtop devices which receive input from built-in keyboards or voice input and which can interface with a computer to share information between devices. Electronic organizers also provide auditory and/or visual alarms which can be repeated daily, weekly, or monthly. However, electronic organizers often small in size and storage space, and require batteries, which individuals with motor impairments secondary to ABI may find difficult to replace (Kapur et al., 2004). Additionally, a greater market for more advanced palmtop devices such as Personal Digital Assistants (PDAs) and the advent of smart phones means electronic organizers are no longer commonly used or available and the computer software required to install and maintain the organizers is no longer supported by Microsoft and other companies.

Kapur et al., also examined mobile phones, pagers, and laptops as communication and information storage devices for individuals with ABI. The ability of mobile phones to store the
same types of information as the electronic organizers as well as make calls, connect to the Internet, and wirelessly activate other devices makes them especially useful to people with ABI, according to Kapur et al. With a single device, such as a cell phone, an individual with ABI could store various information, set reminders, make calls, and search information online with a single device rather than learn how to use an electronic organizer in conjunction with a portable phone and laptop. The authors conclude that multi-functional external memory aids may benefit individuals with ABI. In the six years since the article by Kapur et al. and the release of the first iPad in April 2010, Apple created a device which fulfilled five out of seven of the recommendations for a more beneficial memory aid made by the authors, including: memory related multi-functionality combining electronic organizers, mobile phones, Internet browsing capability, and reminder systems; image-to-text capability; context- and location-specific reminders; and persistent alarms.

A systematic review by Jamieson, Cullen, McGee-Lennon, Brewster, and Evans (2014) examining technology and memory performance abilities in adult individuals with ABI concluded that technology can effectively increase performance in daily life activities when functioning as a memory aid. Charters, Gillett, and Simpson (2015), conducted a systematic review and found sufficient evidence to recommend as a practice guideline that portable electronic assistive devices be used as compensatory cognitive impairment tools to support regular daily functioning in individuals between 16-65 years of age with an ABI. Additionally, Rispoli, Machalicek, and Lang (as seen in Lancioni & Singh, 2014), examined electronic and manual memory aids as used by individuals with ABI as cognitive prosthetics. Rispoli et al. (2014), reported on the efficacy of cell phones, pagers, and auditory alarms with and without accompanied text in the context of cognitive aids. According to Rispoli et al., mobile phones have been proven to function effectively as discrete compensatory tools for memory impairment. Rispoli et al., reported that the increasing prevalence of personal, portable technology in society among individuals without disabilities could help end the stigmatization of individuals who rely on AT. Indeed, Szabo and Dittelman (2014), reported that many clients at the Adler Aphasia Center in Maywood, New Jersey were reluctant to use iPads until they witnessed their friends using the devices. The marketing and sales of the newest technologies as pocket assistants, and the promotion of the accessibility features these products display, increasingly normalizes the use of AT. The latest technologies are often seen as items of status and continue to be integrated into social, home, and workplace settings. In a recent press release, Apple announced their company was teaming up with Deloitte, a management consultant company, to improve iPad and iPhone usage in businesses, further extending the reach of personal technologies to all areas of society and normalizing their use (Apple, 2016).

Assistive technology in daily living and the workplace. In relation to using AT in the workplace to compensate for impairment after ABI, Hartmann (2010) conducted a single case design study investigating the work performance of a participant who had sustained a mild traumatic brain injury. Hartmann examined the participant’s use of AT in the workplace and compared his usage and productivity levels before and after his brain injury. According to Hartmann, the participant used various AT in his premorbid work (i.e., voice recognition software, cell phone messages, and a PDA) and the study found his general work performance and use of AT was greatly impacted following his brain injury. Hartmann introduced and matched new AT (e.g., text-to-speech software, a digital pen, and a voice recorder) which successfully improved the participant’s work performance. Hartmann concluded that work analysis and matching AT to individuals following mild TBI can improve work performance.
Hartmann noted that return-to-work rehabilitation is often overlooked for individuals with mild TBI in favour of treating individuals with more severe brain injuries. Hartmann found that matching assistive technology to an individual’s level of impairment allows for greater work output and performance following ABI. While not directly examined as a cognitive aid in the context of work performance following ABI, the iPad provides the same features in one device as the two of the three AT introduced by Hartmann, and many apps exist which allow users to turn photos into text documents. Stylus use is also supported to allow individuals to write directly on the iPad. However, development of apps and features to turn handwriting into editable text is ongoing and the existing apps for photo-to-text functions are often incomplete or full of glitches.

As the participant in Hartmann’s study was familiar with several AT prior to his brain injury, Gentry, Wallace, Kvarfordt, and Bodisch Lynch (2008) conducted a study with individuals who were familiar with personal computers. Gentry et al. (2008), examined the usability of PDAs as cognitive aids in individuals who had sustained a TBI one year or more before the study and who had behavioural memory problems interfering with their ability to perform everyday tasks. Each participant was assessed before and after training with a PDA on their occupational performance and daily activities participation. Gentry et al. found statistically significant improvement on participant self-rating scores for occupational performance and satisfaction, and significant improvement in self-rated daily activity participation in participants who used a PDA over participants who utilized traditional, manual AT. The improvement in performance and satisfaction found in Gentry et al. may have be due to the presence of an auditory alarm which reminded participants of appointments and tasks as opposed to traditional aids which require the user to initiate interaction with the AT. However, Gentry et al., provide evidence to the ability of individuals with severe TBI to learn to operate electronic AT in daily life. While much more complex than a PDA, the iPad provides a multitude of accessibility features to make interfacing and navigating the device simpler and more available to users with disabilities, as well as providing the option of an auditory alarm. It would be beneficial to compare the use of an iPad to other AT alone or with multiple devices in conjunction to assess the efficacy of a multi-function device that requires greater learning capacity to multiple uni-functional devices which are simpler to use.

Regardless of the outcome, it has been proven in many studies that AT use can be beneficial to individuals with ABI. For instance, De Joode, Van Heugten, Verhey, and Van Boxtel (2010) conducted a systematic review to investigate the effective use of portable electronic aids by adults with cognitive deficits following ABI. De Joode et al. (2010) examined changes in the levels of daily life activity participation and cognitive or work-related performance by participants. De Joode et al. report that PDAs, voice recorders, and the NeuroPage™, among other technologies, positively supported retrospective and prospective memory. In addition, Larsson Lund, Nygård, and Kottorp (2014), examined the correlations between individuals’ difficulty using ordinary electronic devices and performing activities of daily living (ADL) in areas of everyday life following ABI. Larsson Lund et al. investigated 74 individuals with ABI and their use of ordinary technology at home, in society, and in the workplace. Larsson Lund et al. found that difficulty in the use to everyday devices correlated significantly with limitations in ADL ability, reporting that full- or part-time workers had greater ability to use everyday technology than those with long-term compensation. Larsson Lund et al. also found that return to work following an ABI was significantly related to the individual’s ADL performance and ability to use everyday technology. Also, Kurland, Wilkins, and Stokes
(2014) demonstrated the efficacy of using iPads in rehabilitation of individuals with aphasia. Kurland et al. (2014), found that six of eight participants with aphasia who participated in a 2-week intensive language/communication program successfully generalized and maintained treatment gains at 6-month follow-up. Of the two remaining participants, one was uninterested in using an iPad and returned the device while the second individual, who regularly used the iPad for the study, produced confounding results due to a technical error.

As well, Rispoli et al. (2014), examined different assistive tools for individuals with ABI, namely microswitches for individuals with severe mobility impairments to use to activate environmental stimuli. Rispoli et al. reported on the efficacy of microswitches in the context of interacting with and initiating leisure activities. It is worth noting that the iPad can wirelessly connect to different accessibility accessories like microswitches to enable users with severe motor impairment to interface with the device. No studies were found directly relating to the use of an iPad via microswitches in either leisure or business context. Further examination of the efficacy of iPad use for leisure or work-related practice with microswitches and other accessibility accessories for severe impairments would be beneficial to individuals with ABI and front-line clinicians in the field of brain injuries. Overall, it appears more beneficial to teach individuals with ABI how to use compensatory AT than not.

**Importance of matching client need to assistive technology.** The complexity of the AT used by any individual with ABI would depend on several factors including the severity of the individual’s impairment following brain injury, the cost of the device and the level of training available, and the intended function of the device. Devices which support leisure activities in individuals with mild to moderate impairment caused by ABI may require less complex AT than individuals with severe motor or mental impairment or who are using a device for work. As found by Hartmann (2010) and noted by Rispoli et al., (2014), it is important to match a device to an individual’s level of ability and the intended function of the aid. For example, Gillette and DePompei (2008) examined both students with intellectual disabilities and students with TBI during a study of on-time behaviour in schools. Gillette and DePompei randomly assigned students to one of three conditions: written schedules of times (list), paper planners, or personal digital assistants (PDA), of which there were two different devices and only the alarm function was utilized. Students were not required to do any scheduling tasks and were given one reminder of appointments in the morning during the first trial, while in the second they were given no reminders. Gillette and DePompei found that use of a PDA resulted in greater on-time behaviour than the list or planner. Gillette and DePompei also found that, regardless of the condition the student was in, students were twice as often on time to appointments in the first trial than they were when no reminder was given. A study evaluating the efficacy of audio, visual, or tactile (vibrating) electronic reminders given several hours in advance of an electronically scheduled appointment compared to no reminders or reminders given by another person may be beneficial to determine the best method of ensuring appointments are kept by individuals with ABI.

**Professional attitude toward rehabilitative assistive technology.** De Joode, Van Boxtel, Verhey, and Van Heugten (2012), conducted two studies on the attitudes of professionals, persons with ABI, and caregivers toward the use of AT in cognitive rehabilitation. De Joode et al. found that most respondents and interviewees felt positively toward AT, and professionals with past experiences with using AT reported more confidence toward using AT in the future. De Joode et al. reported that only a minority of all groups currently utilized any AT in treatment or at home, citing insufficient promotion of and training with AT for rehabilitation professionals as a reason for lack of use of electronic devices.
Many articles, manuals, and training videos currently exist to help individuals learn to use technologies like the iPad, however a comprehensive guide to iPad accessibility features which may be required by persons with ABI was not found.

**Rehabilitation of ABI Using Electronic Assistive Devices**

In addition to exploring existing electronic assistive technology, another aspect of the literature that needs to be examined is the use of electronic AT during immediate post-acute rehabilitation following brain injury. Only one study by De Luca et al. (2014), was found examining the efficacy of computer training in the post-acute recovery stage of ABI (3-6 months post-injury). De Luca et al., found preliminary evidence that cognitive training via computer may be beneficial to individuals with TBI.

Additionally, Szabo and Dittelman (2014), show that it is possible to successfully integrate mobile technology use into a post-acute rehabilitative program for individuals with aphasia. Beginning with assessing client interest in using mobile technologies, staff at the Adler Aphasia Center in Maywood, New Jersey created and implemented a program to increase mobile technology access for people with aphasia. The Center teaches basic iPad functioning through repeated practice and popular apps before teaching use of preloaded (and cost-free) apps as conversation, cognitive-communication, and social connection supports.

**Client motivation in ABI rehabilitation.** The importance of motivation in individuals participating in rehabilitation must be highlighted. Wilson, Herbert, and Shiel (2003), in *Behavioural Approaches to Neuropsychological Rehabilitation*, discuss the influences of client mood, insight, and motivation on cooperation during treatment and rehabilitation of ABI. According to Wilson et al., mood disorders such as altered emotional control, depression and anxiety, and post traumatic stress disorder; lack of insight and denial of impairment; apathy and low motivation; and non-attendance and non-cooperation with programmes affects treatment. Individuals in treatment cannot be forced to make improvements in their recovery. The Adler Aphasia Center’s mobile technology program (Szabo & Dittelman, 2014) also highlights the necessity of client motivation to participate. Szabo and Dittelman (2014), reported that client desire and motivation was an important factor in whether a client would respond well to the program and could learn to use an iPad successfully. Therefore, it is important that rehabilitation is tailored to the level of ability and cooperation of individuals with ABI who are participating in rehabilitation. As stated by Szabo and Dittelman (2014), incorporating activities built into the rehabilitation that focus on an area of client interest can be a useful way to generate client desire to participate.

**The role of iPads in ABI rehabilitation.** Though no studies were found examining the use of iPads in post-acute inpatient rehabilitation, it may be of some benefit to explore the use of these devices with persons with brain injuries in an inpatient setting. Wilson et al. recommend strict use of structure and repetition to minimise agitation, and reinforcement of activities and programmes to increase programme compliance. The iPad itself can provide rehabilitative exercises such as those studied in De Luca et al., (2014) and Szabo and Dittelman (2014), as well as reinforcement in the form of verbal and visual praise built in to the exercises, games, videos, and improved use of the technology. Individuals who become familiar with the iPad could use the devices outside of immediate rehabilitation and could continue use after return to home or work, thereby reducing the need for later training in the use of the device during outpatient rehabilitation.

Lastly, if, as De Luca et al., (2014), suggest, computer-guided rehabilitation of memory, executive function, and cognitive skills such as problem solving and association, is beneficial to
individuals with ABI, it may be advantageous to investigate the use of electronic devices in immediate post-acute rehabilitation which are available on a more personal level, like the iPad.

**Teaching Individuals With ABI**

Finally, it is important to examine the literature regarding teaching of novel experiences to individuals with moderate to severe ABI. Because ABI often involves impairment to memory and learning, teaching the use of complex AT like the iPad may prove difficult for clinicians. It is therefore necessary to examine different aspects of instruction and individual-device matching which facilitate learning in individuals with ABI.

First, the ability of individuals with ABI to recall learned information must be considered to facilitate best learning. Riley and Venn (2015) found that participants with mild to moderate impairment in memory and executive function due to ABI displayed fewer errors and achieved better scores on immediate and delayed recall tests following instructions which required intentional recall. Participants with more severe impairment showed a greater advantage during the delayed test following automatic recall. Therefore, it may be necessary to train individuals with severe memory impairment in the use of an assistive device to the point the individual makes rote actions. A study by Powell et al. (2012) supports that systematic instruction with minimization of errors and reduction in the need for guessing results in increased maintenance and generalization of learning than conventional “guess and check” instruction.

Second, Biancarosa and Griffiths (2012) report that technology can assist instructors in improving students’ literacy skills and education backgrounds. Biancarosa and Griffiths conducted a literature review on the different uses of various electronic reading technology (both hardware and software that allows users to interface with text) by children in different stages of reading and learning. Text-to-speech, built-in dictionaries, computer-guided tutors, and self-paced tutorials were found to increase students’ learning (Biancarosa & Griffiths, 2012). Many of the devices examined in this literature review provide the same features as those explored by Biancarosa and Griffiths. As well, the iPad is equipped with text-to-speech capabilities, has access to embedded dictionaries, and provides access to tutorials in any subject through the Internet. No studies were found which investigated the use of iPads as AT in classrooms with individuals with ABI. Future studies to assess the efficacy and acceptance by teachers and peers of the iPad in classrooms should be conducted to improve immediate learning and future opportunities of students with ABI.

It is also important to consider presentation when matching AT to an individual. McKerracher, Powell, and Oyebode (2005) compared two different designs of memory notebook to test the efficacy of each format with a participant with ABI. McKerracher et al. presented the participant with two diaries, each with a weekly timetable and daily to-do list, with the main difference being that one diary (the modified diary) had the two components on adjacent pages and the other (standard diary) had them in separate areas of the notebook. During the standard diary phase, the participant completed one of 20 assigned tasks while in the modified diary phase he completed 15 of 20 tasks. This study by McKerracher et al. emphasizes the need to match assistive tools to client needs. As well, organizing and modifying existing AT is possible to facilitate best use of the device. iPads are highly customizable and keep multiple functions available in one device, meaning the use of only one device must be taught.

Lastly, Szabo and Dittelman (2014) show that despite device complexity, clients of the Adler Aphasia Center could learn to use an iPad if they were willing to learn, were provided with a foundation of device function, and were instructed in the use of apps that not only supported and accommodated their injury but related to their interests.
Conclusion

In conclusion, many assistive devices have been thoroughly examined in the context of use by individuals with ABI as cognitive and memory aids, as well as devices which assist with work performance. Limited studies exist which investigate the efficacy of iPads in a post-acute rehabilitative role for individuals with ABI; however, iPads perform many of the same functions as other assistive devices examined in this review. Thus, the iPad may reduce the need to train individuals with ABI in the use of multiple assistive devices. Since the iPad provides multiple functions in one device and offers many accessibility features required by individuals following brain injury, it may be beneficial to clinicians and clients in the field of ABI to train recently injured individuals in the use of iPads and similar tablet devices. Further studies in all areas of brain injury rehabilitation using the iPad may prove beneficial to individuals with ABI and the clinicians who work with them. This project aims to add to the knowledge base of the use iPads in ABI rehabilitation.
CHAPTER III: Method

The thesis project was the development of a system wide electronic resource manual for inservice use by staff at Community Brain Injury Services (CBIS) to help staff assist clients with using an Apple iPad. The electronic manual will be stored on a joint server available to all staff members in each of CBIS’ three offices. The manual is designed to guide staff in using the accessibility features in version 10 of the iPhone operating system (iOS) available on the iPad. As an assistive technology, the iPad provides a great deal of support to individuals with brain injuries. The iPad can function as a communication device to allow users to connect with other people through Braille and screen reading, online services such as email, and an electronic voice box. iPads can be used as therapeutic devices through a variety of apps which can walk an individual through therapy exercises such as progressive muscle relaxation, or allow users to participate in activities they may have been unable to attend since sustaining their injuries. iPads can monitor medication schedules; provide accessible games and education; and act as a combined alarm, stopwatch, and calendar which reduces the need for multiple devices.

The manual is divided into three parts: initial setup; accessibility features for vision, motor, and hearing; and general iPad usage. Written and verbal feedback was collected from staff participants and used to improve readability, formatting, and applicability of the manual for use in providing services to clients at CBIS.

The manual was created for use by CBIS staff members to assist in client learning and usage of client-owned iPads as well as for staff consultation when using agency iPads with clients in groups. A digital copy of the manual was saved to the CBIS shared network and is available to staff in all three offices to consult at any time.

Setting

CBIS is a community based service for adults who have sustained a mild to severe brain injury at least one year prior to referral for service. CBIS offers a range of services including client outreach, advocacy services, reconnection groups, supported living, and psychology services. CBIS psychology services are offered by a neuropsychologist who provides assessment, counselling, and consultation for clients and guides clinical aspects of client service. CBIS operates in the counties of Frontenac, Lennox and Addington, Hastings, Prince Edward, Lanark, and Leeds and Grenville.

Outreach services offered by CBIS involve rehabilitation in cognitive, emotional, behavioural, physical, and vocational domains. Clients must be between the ages of 18 to 65 years with an acquired brain injury (ABI) and must be able and willing to identify roles they would like to fulfill and work towards these goals with staff. Individualized service plans are developed through collaboration between clients and staff, with emphasis on daily living and social skills, preparation for school or work, and improving self-awareness, emotional and behavioral control, and maintaining healthy relationships.

Groups are offered in each of the outreach offices located in Kingston, Belleville, and Brockville and in the community and are available for all clients to attend. In-office groups involve social, baking, games, and craft groups, and additional community outings. CBIS staff in charge of baking and social groups have opportunity to utilize the iPads to look up recipes and conversation topics, while games and crafts groups may search for social games or present craft ideas. All groups may employ iPads to play new or previously beneficial apps in instances where only a single individual shows up to a group.
The CBIS Assisted Living Program allows clients with severe ABI to live in their own home or apartment with on-going support. Clients may live independently with support or live with a roommate who is also receiving continuous support. The program runs in conjunction with other community services and allows clients to maintain stable housing and social supports, engage in community activities, and manage aspects of daily living. There are a variety of occasions for clients in the Assisted Living Program to use their own iPads or iPads brought in from the CBIS office, including personal, business, or leisure opportunities.

Community Reconnection Groups are offered in Lanark and Leeds and Grenville counties which focus on different areas of interest to clients, including outdoor or housekeeping activities, hobbies, and wellness. The Reconnection Groups are 10-week series groups that aim to give clients with brain injuries the opportunity to form connections with others in their communities and find activities they enjoy doing.

**Participants**

The participants of the thesis project were staff at CBIS’ Kingston office. Staff members at CBIS are university-trained professionals. Most staff members are graduates of the Behavioural Psychology or Behavioural Science Technology programs, although some have transferred from working in physical rehabilitation. Staff members include Community Rehabilitation Counsellors (CRC), a neuropsychologist, and supervisory staff.

CRCs are frontline workers in the CBIS offices and community who support clients in daily activities and provide advocacy services. In office, CRCs run a variety of client groups, including social, cooking, and craft groups, and organize community outings for client groups. In the community, CRCs work one-on-one with assigned clients to assist with weekly routines and ensure clients can access necessary services (e.g., putting money in the bank and making doctor appointments). CRCs may also assist clients with obtaining and learning to use new devices such as iPads and therefore would benefit most from the iPad Accessibility Manual.

The neuropsychologist at CBIS performs neuropsychological assessments on clients and regularly reviews CRC progress to ensure rehabilitation maintains an effective and behavioural approach. Requests for new apps for office iPads must be examined by the neuropsychologist who appraises the rehabilitative value of the apps for clients with brain injuries.

Supervisory staff include the program manager and the Service Coordinator and Outreach Manager. The program manager is responsible for day-to-day operations and retains control of the iPads in the CBIS offices. Passwords, Apple ID, and app purchases are controlled by the program manager and all changes to accounts and requests for new purchases must be made through that individual. The outreach and service coordinator oversees assessing referrals for compatibility with CBIS service and supervising the CRCs. While he does not have much contact with clients beyond initial meetings, he is responsible for assessing client needs and ensuring client goals are being met. The coordinator has also expressed interest in using the manual to learn how to use an iPad during initial meetings with clients.

**Materials**

The materials used in the development of the electronic manual included three Apple iPad Airs (1\textsuperscript{st} Generation). Two iPads remained at the CBIS Kingston office and were updated to run the latest iPad software, iOS 10.2.1, to give CBIS staff access to the latest Apple accessibility features. The apps on the iPads were updated and apps that were no longer supported by their developers or which cost money to continue running were deleted. The Apple ID was also updated as the program manager who had initially set up the ID has since retired. The third iPad was owned by the author and remained with the author to allow development of the manual.
through systematic testing of the accessibility features. A Belkin QODE Ultimate Keyboard Case for iPad was used as an external switch during testing of the Switch Control feature, which allows users with limited mobility to operate an iPad with minimal physical effort. Microsoft PowerPoint was used to introduce and provide an overview of the manual to CBIS staff during a standard full team meeting between the three offices as part of the schedule of updates, while Microsoft Word was used to create the manual. Adobe Photoshop CS5 was used to edit screenshots of the iPad for the manual. Screenshots were taken with the iPad and transferred to a laptop or desktop computer (where available) where the photos were then cropped or merged and indicators were added to highlight items on the photos corresponding with the topic being addressed in the manual. Feedback for the manual was collected through the written feedback in the form of a survey with rating scale answers and an open comment section (found in Appendix A) and informal discussion with the neuropsychologist.

**Design of the Manual**

The iPad Accessibility Manual is divided into three main sections. Chapter 1 focuses on the set up of the iPad during first time use or after accidental or purposeful factory reset of the device. Although a step-by-step guide for clinicians, subsections elaborate on the different settings users are asked to activate during setup and how these features may benefit or negatively impact clients, such as the Wallet app which allows users to save credit card information to the Apple device.

Chapter 2 is the larger section of the manual and centres on the accessibility features installed in the iPad software. This section is organized according the Accessibility menu found in the iPad’s Settings app. Three main subsections emphasize visual, motor, and audio accessibility features. Each aspect of each feature is explored and instructions for enabling/disabling the individual items as well as usability guides are provided. A final subsection focuses on the Guided Access and Accessibility Shortcut features, their uses and how to use them, and instructions for accessing these features.

The last chapter of the manual highlights features which increase general usability of the device as well as apps which allow the iPad to function as a cognitive aid for individuals with brain injuries. Apps for storing and retrieving information, creating alarms, and scheduling structured tasks are explored in subsections. Gestures (shortcuts for using the iPad) and device anatomy are also featured in the final subsection. The contents of the manual are featured in Table 1.

| Table 1. Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad Contents |
|---|---|---|
| Part | Section | Subsection |
| 1 | Setting Up | • Set Up  
• General Apps |
| 2 | Accessibility | • Vision  
• Motor  
• Audio  
• Guided Access and Accessibility Shortcut |
| 3 | Usability | • Specific Apps  
• Gestures  
• iPad Anatomy |
Feedback Procedures

Initial feedback. Prior to manual development, the outreach manager and service coordinator at CBIS stated that a workshop delivered to staff to teach iPad use would be beneficial to the agency; however, due to time constraints, it was agreed between the author and the service coordinator that a manual would also be useful. The initial outline for the electronic manual was presented to CBIS staff during a full-team meeting with staff from all three offices present. A Microsoft PowerPoint presentation was delivered to the staff (see Appendix B) as an overview of the proposed manual. The PowerPoint outlined the major areas covered by the manual including why and how CBIS clients may use an iPad, some major iPad accessibility features, and Siri. Informal verbal feedback collected from staff was used to improve readability, formatting, and applicability of the manual to service. Staff were encouraged to provide feedback and identify areas of concern. Staff identified areas of need such as iPad usage gestures and personalization of the iPad for potential incorporation into the manual. Feedback from a frontline staff member who worked with a client to set up an iPad prompted the inclusion of the initial setup in the manual. Further discussion with the neuropsychologist at the CBIS Kingston office narrowed down and solidified the list of apps to be included in the manual.

Follow-up feedback. To assess the utility of the manual, an unfinished draft was presented to different CBIS staff members. Staff members were asked to participate if they were unfamiliar with iPads, had difficulty using an iPad, or had limited experience with iPad accessibility features.

Due to incompatible schedules between CBIS staff and the author, no meetings occurred between the two parties to directly observe manual reception. The author sent an email, with an unfinished portion of the manual and a feedback survey attached, to the CBIS service coordinator requesting that available staff members review the manual part and complete the feedback survey. All final information was included in the unfinished manual section, but no formatting or pictures had been added. The feedback manual can be found in Appendix A.

Two CBIS staff members were able to review the manual and respond to the feedback survey. Supplementary feedback, which was integrated into the final version of the manual, was provided by both staff in addition to survey responses (see Appendix A).

When the manual was nearly complete with most sections featuring formatting and images, one hour was scheduled at the end of the work week with the CBIS neuropsychologist. The neuropsychologist was shown a copy of the formatted manual and provided verbal feedback on content and structure. The neuropsychologist stated concern at the manual’s length, but agreed that headings shortcuts provided by Microsoft Word allowed for easier navigation of the manual. Additional feedback was incorporated into the final version of the manual where possible.
CHAPTER IV: Results

The thesis project was undertaken at the request of Community Brain Injury Services (CBIS). Supervisory staff members expressed concern that clients were not benefitting from the agency’s investment of a pair of iPads per office; therefore, a manual was developed focusing on aspects of the Apple iPad that may make the device easier to use for clients with acquired brain injuries (ABI). Agency staff agreed that a manual would be likely to help increase use as a few staff members were unfamiliar with Apple products. Several staff reported to the author they had considered using an iPad in a client group but were unsure how to use the device in that setting. The author proposed the creation of a manual centring on the accessibility features provided by Apple for the iPads, as usability manuals are available on the Internet but the author could not find a comprehensive guide to the accessibility features.

The manual begins with a rationale for the project and a general citation that all images are screenshots of the iPad and belong to Apple Inc. The rationale states that individuals with ABI use a variety of assistive devices (AD), either analog or digital to compensate for deficits following brain injury. It is hypothesized by the author that one device is of more benefit to clients with ABI if it combines the functions of several commonly used AD (such as alarm clocks, reminder notes, and speech-generating devices). The Apple iPad contains apps which perform the same functions as multiple assistive devices, but remains small and lightweight for easy transportation and use by clients with ABI. As a multifunctional device, it allows for brain injury rehabilitation staff to teach skills related to one device rather than many.

The manual is written in a step-by-step format, following chronological order during the first section and order of listing in the second section. Topics in the third section are covered in alphabetical order. Pictures were added to the final copy of the manual to allow for easier understanding and following of written instructions in the manual.

Creation of the Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad

Chapter 1: Setting Up. The first section the manual guides staff through setting up the iPad during first time use or after factory restoration of the device. Apple products contain a series of prompt pages which help users set preferences and activate helpful features like iCloud, however, the set up was added to the manual following difficulties experienced by a Community Rehabilitation Counsellor (CRC) when setting up an iPad with a client in the community. The iPad Accessibility Manual addresses each page of the walkthrough in order of appearance to give additional details and explore potential benefits or risks of features to clients with brain injuries. For example, enabling Apple Pay includes adding a credit card number to the iPad to make purchases online which may greatly impact the budget of an impulsive client. Preloaded apps are also briefly outlined in the first section of the manual. After an informal observation of a staff member interacting with an iPad, the author included app organization such as creating folders and home pages in section one.

Chapter 2: Accessibility Features. The second section of the manual thoroughly examines the features found in the Accessibility menu of the Settings as they appear in version 10.0.2 of Apple’s mobile software. Each feature is covered in the order it is listed in the Accessibility menu starting at the top of the page and proceeding down to the bottom. The manual provides instructions on how to use each feature as well as how a client with an ABI may benefit from using that feature.

Chapter 3: Usability. The third section of the manual focuses on iPad apps that perform those functions found in traditional assistive devices. Each of the apps discussed comes
preloaded on the iPad and does not need to be downloaded from iTunes or the Apple App Store unless a client or staff has manually deleted them. Discussion with the CBIS neuropsychologist during the initial stages of the project resulted in the inclusion of the apps found in the Usability section of the manual. When CBIS purchased the iPads, the neuropsychologist was responsible for assessing the benefit of any app a CRC wished to download or use with a client. Only apps approved by the neuropsychologist were included in the manual. In the second subsection, gestures were included as the author explored the iPad during manual development. Apple has programmed many shortcut actions users may initiate using one or more fingers moved in a certain way across the iPad screen. Several of these gestures are learned immediately during iPad use, such as tapping to select and swiping left or right to change pages, however more complex gestures, like pinching the screen with five fingers to close an app, may not be as intuitive. While all clients with ABI may not be able to use all gestures, it is important for staff to understand how the iPad works to fix or prevent any problems that may occur during use. The final subsection, iPad Anatomy, was included after feedback was obtained by an unaffiliated editor who commented that she had been unaware of the difference between a lock screen and a home screen.

Feedback Survey Results

The Service Coordinator and Outreach Manager for the CBIS Kingston office was approached via email with a request to distribute a feedback survey and a section of the manual to staff at the office for review. Two staff members, the service coordinator and a CRC, completed the feedback survey after reading through the in-development VoiceOver subsection of manual. Additional staff members did not return the survey. Clients were not approached for feedback as the manual was developed for staff use only. The raw data for the feedback survey results, in addition to supplementary feedback, can be viewed in Appendix A.

As shown in Appendix A, both the service coordinator and CRC gave positive responses on the feedback survey. Both staff members responded to 75.0% of the feedback survey questions with “Strongly Agree,” and 25.0% of the questions with “Agree.” Both staff strongly agreed that the iPad Accessibility Manual contained language that was clear and easy to read, and they could easily follow instructions. They also strongly agreed that the manual will be useful to them in the future and is relevant to agency operations and the field of ABI. Both staff agreed that they are likely to use an iPad with clients or in CBIS groups. The CRC agreed that the content was presented in a way he understood, while the service coordinator agreed that the manual was straightforward and easy to navigate.

On question one, the CRC agreed that the content was presented in a way he understood and he noted in the additional comments section of the survey, seen in Appendix A, that he could follow along with the manual using an iPad. The CRC also left additional comments on areas of improvement to the format of the manual’s Table of Contents; the author made changes accordingly.

The iPad Accessibility Manual was developed in response to a direct statement of need by CBIS staff. The proposed model of instruction presented in the manual received positive feedback from staff which indicates that the Accessibility Manual for Brain Injury Rehabilitation Staff: Apple iPad will be useful to CBIS staff in the future and may benefit other agencies working in the field of acquired brain injuries.
CHAPTER V: Discussion

Summary
The Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad was created as an electronic resource for Community Brain Injury Services (CBIS) in Kingston, Ontario in response to a stated need. The manual is a comprehensive guide to the accessibility features supported by the Apple iPad as they appear in version 10 of the iOS software. The manual covers instructions for setting up the iPad on first use as well as providing information on usability items which may facilitate operation of an iPad by staff. Synthesis of self-taught use and online reference coupled with discussion with staff at CBIS contributed to the development and organization of the electronic manual.

The Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad is a potentially useful tool for long-term post-acute brain injury rehabilitation workers based on feedback given by staff members at CBIS’s Kingston office. Three staff members provided feedback and constructive criticism during manual development. The majority of the responses on the feedback survey completed by two staff members were “Strongly agree” and both staff answered “Agree” to two questions. Staff answers on the survey indicate the manual was easy to read and content was presented in a way the staff members understood and could follow along with. All three staff members responded in the survey or in informal discussion that the manual was relevant to agency operations and would be useful to them in the future. Staff responses on the survey also indicated they were likely to use an iPad with clients in the future. During and prior to manual development, the iPads purchased for the office saw very little use. As the manual was created for CBIS staff in response to a specified need, no clients were involved in the creation of the manual and no persons outside the agency were involved except for editing.

Strengths and Limitations
As identified in the literature review, there is little research available on iPads or similar products (such as tablets) in the role of assistive technology for post-acute ABI rehabilitation. One strength of the current project is that it highlights the lack of studies investigating the potential of these customizable hand-held multifunction electronic devices.

Based on feedback given by frontline staff at Community Brain Injury Services, the Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad is a project relevant to the agency and the field of acquired brain injury (ABI). Staff indicated the manual is a useful tool they are likely to use in the future. As examined in the literature review, there are wide possibilities for the application of iPads in the role of post-acute brain injury rehabilitation. The introduction of a manual that allows rehabilitation staff to make iPads more accessible to their clients with brain injuries can only help integrate the device further into the role of assistive technology.

One major limitation of the manual is the continued improvements made to existing technologies and the creation of newer devices. No other tablet devices were explored during manual creation, so generalizability of the manual to non-Apple products is unknown. Additionally, Apple updates the iOS often and sometimes makes global changes to the layout and features of the software. With the varying levels of the update changes, the manual may eventually lose relevance in both order and subtopics.

In addition, due to the small sample size for feedback, it is unclear how the manual will be received and how likely it is to be used by the full CBIS team at the Kingston office or staff in the other CBIS offices.
Ethical Issues

An ethics review was not required as there was no client involvement in the thesis project. No ethical issues were encountered during manual development because clients were not involved in any stage of the development of the project manual.

Strengths and Challenges for Implementation

The author did not have the opportunity to observe implementation of the manual in the field, i.e., observe a CBIS staff member employ the manual to help a client use an iPad in either group or individual practice. Therefore, no data was collected on how easily the manual can be followed in representational settings. Furthermore, because the manual was written for staff and iPads are not a mandatory or commonly used tool at CBIS, clients must be willing to use the iPads before staff can implement the manual in the agency. Staff are also somewhat limited in spontaneous iPad use as the agency does not have Wi-Fi at the office building. Visiting a public business with free Wi-Fi access before groups would allow staff to download apps and preload Web pages. Holding a client group at a quiet, public space with free Wi-Fi would also allow staff to circumvent lack of wireless Internet access at CBIS. Additionally, the manual itself is a large file (18.16 MB). There are applications that would allow staff to review the manual on the iPad, but the file would take up space that could be used by more beneficial, client-centred apps. Lastly, switching between the file and the iPad’s Settings while trying operate an accessibility feature would be clumsy and could lead to mistakes. This can be rectified with a paper copy of the manual, with the electronic file remaining in the CBIS database as a backup.

Multilevel Challenges

Client level. As previously stated, implementing a program with a client population who are not motivated to participate is difficult. Therefore, it will important for CBIS staff to integrate the iPads into group and individual client sessions in ways that promote client interest and entertainment with the overall goal of providing an assistive tool to allow for independent activity and social connection, as demonstrated by Szabo and Dittelman (2014).

Program level. Staff must also be interested in using both iPad and manual, so it is necessary to create a guide that is both easy to read and use, as well as relevant to diminishing the potential complications of introducing iPads to clients with ABI. Several staff members run weekly groups at the CBIS office and as such have routines for implementing those groups. Though staff expressed interest in using the iPads more with clients and client groups, successfully integrating the iPads into groups may prove challenging. Interruption of a set structure or routine, information overload, and failure or fear of failure may cause agitation in some clients, and the absence of a wireless Internet network may create problems for staff during initial integration of the iPads into groups.

Organization level. Community Brain Injury Services operates out of the three different offices. While each office has two iPads and a copy of the manual, how individual staff at each office chooses to implement the iPads in groups or individual sessions may not be identical. Therefore, it will be important for staff at each office to communicate about how they are using the iPads and how their clients are adjusting to and using the iPads.

Society level. Despite the increasing prevalence and popularity of devices such as iPads in society, some uses and features (e.g., VoiceOver and Switch Control) may direct attention to clients’ injuries. It will be important for staff to mediate necessity of the iPad/accessibility feature and any discomfort clients experience at the public’s attention to their iPad use.
Implications for the Field of Behavioural Psychology

The current thesis aims to add to the body of research being developed around using the Apple iPad in the context of an assistive technology for individuals with ABI. The paper also offers some evidence that staff working with individuals with ABI in post-acute rehabilitation are willing to incorporate new technology such as iPads into their existing programs.

Future Recommendations

Future research should continue to investigate the possible applications of iPads and comparable tablet devices within a rehabilitative role. It may also prove beneficial for researchers to compare iPad use to other AT alone or AT in conjunction with multiple devices to assess the efficacy of teaching a single complex multi-function device compared to multiple simpler, uni-functional devices.

Manufacturers of consumer electronics provide standard user guides with purchase of a new device. However, developers should consider accessibility-specific manuals developed for users who employ the devices as AT. While Apple has many usage guides on their website, the Web pages are often overviews of device features requiring some navigation to access simple instruction. Guidance on device use in regards to specific populations (e.g., Apple Pay for impulsive or vulnerable individuals) should be included in all manuals and guides. Developers of commercial applications should strive to include accessible use options in their apps.

Finally, it may be advantageous to study how the use of electronic AT in immediate post-acute inpatient rehabilitation affects device use in later rehabilitation. Further studies investigating the iPad as an AT may prove beneficial to clients and clinicians in all areas of brain injury rehabilitation.
References


### Appendix A
**Feedback Survey for Staff**

Please rate the following statements regarding the iPad Accessibility Manual for Brain Injury Rehabilitation Staff. Type or mark an ‘X’ in the appropriate column to indicate your rating.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The content was presented in a way I understood.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. The manual format was straightforward and easy to navigate.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The language was clear and easy to read.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I was able to follow the instructions easily.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I am likely to use an iPad with clients/in groups.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6. The manual will be useful to me in the future.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7. The manual is relevant to agency operations.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The manual is relevant to the field of acquired brain injuries.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Additional feedback:**

Table of Contents - The reader should find topics at a glance. Take out word “Subsection” from table of contents, it may seem apparent and is repetitive. I am only suggesting that titles “Setting Up”, “Accessibility Features”, “Usability” be left only as headings and each section be called a chapter in order to eliminate the alphabet system. The page numbers should allow person to find section they need. This was my only suggestion.

Your 2.1 Voice Over section is beautifully described and I was able to follow along with an ipad. Good Work.

As long as our clients are supportive of learning to use ipad, this manual should get alot of use. Thank you Bridget for working on this!!
**Feedback Survey for Staff**

Please rate the following statements regarding the iPad Accessibility Manual for Brain Injury Rehabilitation Staff. Type or mark an ‘X’ in the appropriate column to indicate your rating.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The content was presented in a way I understood.</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. The manual format was straightforward and easy to navigate.</td>
<td></td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
<td>X</td>
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</tr>
<tr>
<td>4. I was able to follow the instructions easily.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>5. I am likely to use an iPad with clients/in groups.</td>
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<td></td>
<td>X</td>
</tr>
<tr>
<td>8. The manual is relevant to the field of acquired brain injuries.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Additional feedback: Bridget’s iPad manual was well received by our team and will be a very helpful tool for our staff and clients.
Appendix B
Manual Introduction to Staff Presentation

IPADS FOR ABE:
TIPS, TRICKS, AND ACCESSIBILITY

So Your Client Has an iPad
- Virtually limitless potential
- Fun and business
- Set up - Touch ID and Pincode
- Wi-Fi
- End - The Cell Focus issue

Setting Up
- Lock Screen
- Backgrounds
- Organize - Photos and Pages
- Chat/Read
- Battery and Charging

Accessibility (1) - Vision
- Zoom vs Magnifier
- Display Accommodations
- Brightness and Bright Dial
- Text and Font
- Speech
- VoiceOver

Accessibility (2) - Hearing
- Hearing: Context/Soundbars
- Audio Output
- Subtitles and Captions
ACCESSIBILITY MANUAL DEVELOPMENT

ACCESSIBILITY (3) - MOTOR
- Gestures
- Dictation
- AssistiveTouch
- Shake to Shake
- Reach Control
- Touch Accommodations
- Guided Access

AIRPLAY - BASICS
- Quick search
- Recents, Bookmarks, and Reading List
- Word Pad
- Note 101
- AccTab
- Reader view

APPS TO THINK ABOUT
- WEBCAM
  - Clock and Reminders
  - Maps
  - Camera
  - Calendar
- AVAILABLE IN STORE
  - Microsoft Office
  - Messenger
  - G-Chat (i)

CLOCK
- Time zone and World Clock
- Area
- Bedtime
- Screen
- Time

NOTES
- Favorites
- Forecasts
- Organization - Folders
- Checklists
- Documents and Videos
- Lock notes
- Sensors
REMINDERS
- New item
- Remind items
- Alerts

CALENDAR
- Multiple calendars
- View
- Add/Manage events
- Alerts

APP STORE
- Search
- Renew and redeem gift cards
- Updates
- Youth app

*Clients who do not have Power of Attorney for someone will be able to purchase items online without the use of a parent. The parent will continue to receive emails.*
Appendix C
Accessibility Manual for Brain Injury Rehabilitation Staff: Apple iPad

Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad

By: Bridget Hudson

This manual is part of a thesis project developed for Community Brain Injury Services in partial fulfillment of the requirements for the Honours Bachelor of Behavioural Psychology program at St. Lawrence College.

The Accessibility Features Manual for Brain Injury Rehabilitation Staff: Apple iPad is an independent project and has not been authorized, sponsored, or otherwise approved by Apple Inc. Do not distribute.
## Table of Contents

### CHAPTER 1: SETTING UP

Section 1.1: Set Up
HELLO................................................................................................................................. 5

Wi-Fi NETWORK.................................................................................................................. 6

LOCATION SERVICES......................................................................................................... 7

TOUCH ID............................................................................................................................. 7

SET UP iPAD – APPS & DATA............................................................................................ 8

APPLE ID............................................................................................................................. 11

SIRI........................................................................................................................................ 12

APP ANALYTICS................................................................................................................ 13

Section 1.2: Apps and Navigation
PRELOADED APPS........................................................................................................... 14

NAVIGATING APPS............................................................................................................. 15

### CHAPTER 2: ACCESSIBILITY FEATURES

Section 2.1: Vision
DISPLAY & BRIGHTNESS................................................................................................. 18

WALLPAPER.......................................................................................................................... 21

VOICEOVER.......................................................................................................................... 23

ZOOM.................................................................................................................................... 35

MAGNIFIER............................................................................................................................. 38

DISPLAY ACCOMMODATIONS............................................................................................. 42

SPEECH................................................................................................................................. 44

TEXT, BUTTONS, CONTRAST, AND LABELS...................................................................... 48

Section 2.2: Motor
SWITCH CONTROL............................................................................................................... 52

ASSISTIVE TOUCH............................................................................................................... 79

TOUCH ACCOMMODATIONS............................................................................................... 81

KEYBOARD........................................................................................................................... 84

SHAKE TO UNDO................................................................................................................ 87

CALL AUDIO ROUTING......................................................................................................... 88

HOME BUTTON.................................................................................................................... 88

Section 2.3: Audio
HEARING DEVICES.............................................................................................................. 90

MONO AUDIO AND AUDIO BALANCE................................................................................ 92

SUBTITLES & CAPTIONING................................................................................................. 93

AUDIO DESCRIPTIONS.......................................................................................................... 98

Section 2.4
GUIDED ACCESS.................................................................................................................. 99

ACCESSIBILITY SHORTCUT................................................................................................. 102

### CHAPTER 3: USABILITY

Section 3.1: Specific Apps
CALENDAR............................................................................................................................ 104

CLOCK.................................................................................................................................. 121

NOTES................................................................................................................................... 133

REMINDERS.......................................................................................................................... 144

Section 3.2: GESTURES.......................................................................................................... 154
Purpose
This manual will not cover all iPad functions or apps and services. Instead, this manual will get you and your client started on the iPad from initial setup to features that make the iPad more accessible to the client.

CBIS recently purchased sets of two Apple iPads for its offices in Kingston, Brockville, and Belleville for you to use with clients. Staff at Kingston CBIS rarely use the iPads available in the office.

These iPads have built in programs and features including a calendar, alarm, day planner, and contacts list. Clients may purchase or be gifted iPads or similar devices and may turn to you for instruction in use.

The more you know about making the iPad more accessible to your clients, the easier it will be for you to help your client learn to use the iPad.

How to Read
For easy navigation of this document open “View” tab in Microsoft Word and select “Navigation Pane”. The layout of this manual follows the order of items found in the accessibility menu on iPads running iOS 10.2.1

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Chapter 1: Setting Up
SECTION 1.1: SET UP

The very first time you turn on the iPad, Apple will run you through the setup. This will take some time and you cannot skip the setup.

You do NOT need to connect the iPad to a computer.

Make sure the iPad is charged before you begin.

Try to have at least 30 minutes of uninterrupted time available. The exact amount of time required to complete the setup depends on the client’s level of functioning, Wi-Fi availability, and whether the client has a preexisting Apple ID.

HELLO

To turn on the iPad, click the long button on the top right corner of the device. A white screen with the Apple logo will appear. It may take a few minutes before the iPad fully wakes up and provides you with the next screen.

The message HELLO will appear in the middle of the screen, accompanied by a smaller message reading SWIPE TO START at the bottom of the screen.

The message will fade in and out periodically, each time reappearing in a different language. You do not have to select your preferred language here; the iPad will default to English.

Swipe your finger across the screen from left to right and a list of available languages will be provided. Choose your preferred language. You can change the language recognized and displayed by the iPad at any time in SETTINGS.

Next, you will be prompted to select your country or region.
**Wi-Fi Network**

Next, you will be asked to connect to Wi-Fi.

If you do not have access to Wi-Fi at the time of setup, click **Skip This Step** to proceed with the setup. You can connect to Wi-Fi later through **Settings**.

If wireless networks are available, the network names will appear onscreen. Select the network you want to connect to and enter the network password. Next, click **Join**. The iPad will try to connect to the network.

If you do not see your wireless network listed, select **Choose Another Network**.

When prompted, manually enter the network name and select the network security type*.

Tap **Security** to open another page where a list of security types is available.

Choose the correct security type and then select **Other Network** to return to the main page. Once you select a network security type, an additional type box will appear on the main page.

Type the network passcode. Click **Join** and the iPad will try to connect to the network.

If a Wi-Fi connection cannot be established for any reason, a dialogue box will appear stating “iPad can’t connect to Wi-Fi.”

Select **Cancel**, then **Skip This Step**.

 Successfully connecting to Wi-Fi will advance the setup automatically.

*If you do not know the network name, security type, or spelling of either, ask an employee (if at a public business with free Wi-Fi access, such as Starbucks or an apartment building) or a member of the household (if you are at a client’s place of residence).
LOCATION SERVICES
Once a Wi-Fi connection is established, Apple will give you the option to enable Location Services. Location Services refers to the collection of data from various systems (cellular, Bluetooth, wireless and Global Positioning System networks) which Apple uses to approximate your geographical location. Once your location is determined, the geographical information can be accessed by different apps on the iPad (Maps, Weather, etc.) which will use the data to give you more precise results and services (i.e. opening Maps will result in Maps showing Kingston, Ontario).

For example, with Location Services the Maps app will show a blue dot on the globe at the location the iPad has determined you are standing. Location Services allows for the map to update as you move to new areas so you always know where you are.

Location Services can be enabled or disabled at any time through SETTINGS.

TOUCH ID
You will next be prompted to create a Touch ID. The Touch ID is a password alternative. Rather than using a 4- or 6-digit code, Touch ID allows you to unlock the iPad or make purchases in the iTunes and Apps Stores using your fingerprint.

For clients with motor difficulties, the Touch ID may or may not be practical. It may be easier or more difficult to hold one finger over the Home button than to type in a 4- or 6-digit code.

You can skip this step by clicking SET UP TOUCH ID LATER. You can create a Touch ID at any time through SETTINGS > TOUCH ID & PASSCODE.

Touch ID will prompt you to place your finger over the Home button and requires you to lift and press repeatedly. Each time you press, the fingerprint on the screen turns more areas red to allow you to track the iPad’s progress in recording your fingerprint. After
several presses, the screen will prompt you to move your finger around. Finally, the screen will prompt you to adjust your grip or roll your finger to capture the edges. When the lines of the fingerprint on the screen are covered red, Touch ID will be set up.

Select CONTINUE.

Next, you have the option to set up a passcode. The default passcode on newer iPad software is 6-digits. If a 6-digit code is too difficult for a client to remember, selecting PASSCODE OPTIONS will allow you to create a four-digit or custom passcode and provides the option of proceeding with NO PASSCODE.

You can create a passcode for the iPad at any time in SETTINGS.

**SET UP IPAD – APPS & DATA**

If your client has previously owned an Apple device, see APPS & DATA section of this manual.

If you client has not owned a mobile Apple device before, select SET UP AS NEW IPAD to proceed with setup.

**APPS & DATA**

If your client has previously owned a mobile Apple device or an Android cell phone it is possible to transfer data from the old device to the new iPad. Select the most appropriate option from the list below and refer to the corresponding instructions.

**Restore from iCloud Backup:** Apple uploads data from the iPad when the iPad is locked and plugged in and charging. These uploads are like freeze frames of the iPad at the time they are taken, recording apps and app placement on the iPad, app data, open pages in web browsers, and enabled settings. The freeze frames can be downloaded through iCloud to return the iPad and all its data to the where it was before factory reset.

To restore from iCloud Backup your client requires an existing Apple ID. If your client does not have an Apple ID, you must finish the setup and defer uploading data from iCloud Backup until one is created and data is uploaded to iCloud. Restoring from iCloud Backup following setup will require you to erase all data on the iPad and start setup of the device again.
To reset the iPad, open **SETTINGS > GENERAL > RESET > ERASE ALL CONTENT AND SETTINGS.**

If your client already has an Apple ID, connect the old Apple device to a wireless network. Go to **SETTINGS > iCloud > BACKUP** and make sure Backup is turned on. Select **BACK UP NOW.**

On the new iPad, select **RESTORE FROM iCloud BACKUP.** Click **NEXT** and sign in to iCloud with the client’s Apple ID and password.

A dialogue box may open asking you to update iCloud. If this occurs, follow the steps in that setup to update the software.

If you are not asked to update, select **BACK > SET UP AS NEW.** Finish the set-up, update to the latest iOS software, and reset the device using the above steps. Complete the setup again until you reach the **APPS & DATA** screen.

Select **RESTORE FROM iCloud BACKUP.** Click **NEXT** and sign in to iCloud with the client’s Apple ID and password. Choose the latest back-up based on date and size, then select the file.

If iTunes or App Store content was purchased on the old device using multiple Apple IDs, you will be prompted to sign in to each account.

If your client does not remember his/her passwords, skip this step by selecting **DON’T HAVE AN APPLE ID OR FORGOT IT.**

The backup process will take several minutes. Do not turn off or unplug the device.

**Move Data from Android:** Download **MOVE TO iOS** app on the Android device. Make sure both the Android and Apple devices (iPad) are connected to Wi-Fi and are plugged in and charging.

Open **MOVE TO iOS** app to see Terms and Conditions; read carefully with your client. If he/she does **AGREE,** the next screen will prompt you to Find Your Code. Click **NEXT.**

On the iPad, select **CONTINUE** on the Move from Android page. A 6- or 10-digit code will appear within a minute.

Ignore the weak Internet connection alert on your Android device. Enter the code on the iPad screen into the Android device. Wait for Transfer Data screen. Select the content
you want to transfer. Contacts, message history, photos and videos, browser bookmarks, mail accounts, and calendars can be transferred as well as some free apps*.

Select NEXT.

A loading bar will appear on both devices. Do not touch either device until the loading bar on the iPad finishes. The loading process will take several minutes depending on the amount being transferred.

*Only free apps available on both Google Play and App Store will transfer. Free apps matched from the App Store can be downloaded once the transfer finishes. Matched paid apps will appear in iTunes Wishlist.

Restore from iTunes Backup: This step requires a laptop or desktop computer with the latest version of iTunes.

Plug the old Apple device to the computer with the device’s charge cord and open iTunes. Select the Apple device in the iTunes menu on the left side of the screen.

Select SUMMARY.

On the main portion of the screen, there is a section called Backups. You have the option to “Automatically Back Up” or “Manually Back Up and Restore” data.

“Automatically Back Up” allows you to back up data to iCloud or to the computer. This is a preference choice. Select either option.

Under the Manually Back Up and Restore page, select BACK UP NOW. This will start a sync between the computer and iPad and upload a backup from the iPad to iTunes. This may take several minutes.

Click ITUNES PREFERENCES > DEVICES. If the backup was successful, the name of the device and the date and time of creation will be listed.

Unplug the old device and plug in the new iPad to the same computer using the iPad charge cord.

On the computer, select the new iPad. Select RESTORE BACKUP and choose which backup file you would like to transfer.

Wait for the process to finish, and then complete the next setup steps.
APPLE ID
The next setup step will ask you to sign in with an Apple ID and password. An Apple ID is the account through which your client can interact with Apple. The Apple ID allows your client to make purchases from the App and iTunes Stores, create an iCloud backup, and sign in to iMessage, etc.

The personal information (i.e. name, birthday, and security questions) your client provided to Apple when creating the ID will be uploaded to the iPad when you sign in. The iPad’s name will be automatically set according to your client’s Apple ID name, (i.e. “Bridget’s iPad).

Enter your client’s email and password where indicated.

If your client does not have an Apple ID, select DON’T HAVE AN APPLE ID OR FORGOT IT. This will bring you to the next page of the setup.

If your client has multiple accounts for Apple ID, iCloud, and iTunes, select USE DIFFERENT APPLE IDS FOR ICLOUD & ITUNES? at the bottom of the screen and enter the appropriate information as prompted.

Entering an Apple ID may bring you to new pages to set up iCloud Drive, Apple Pay, and iCloud Keychain.

iCloud is a wireless backup storage which offers 5GB of free, secure storage for photos, videos, documents, music, and apps. It also keeps information updated across all devices you approve (i.e. a client’s laptop, a client’s family member’s iPhone, etc.). Service plans for greater storage are available through Apple.

iCloud Drive allows you to access iCloud documents and data from multiple devices such as iPad, iPhone, iPod Touch, and Mac or Windows computers.
Apple Pay requires you to enter credit or debit information on the iPad. This will allow your client to make purchases in iTunes, App Store, or online through any web browser. Apple Pay requires Touch ID or a passcode to authorize purchases.

You can add a card to Apple Pay at any time in Settings > Wallet & Apple Pay > Add Credit or Debit Card. If your client is already using a card for iTunes, the iPad may ask you to add that card. Enter the security code for the card when prompted. You can add up to eight cards to Apple Wallet.

Your client’s bank or card issuers will verify the card or ask for more information. You will be required to obtain the information and then return to Settings > Wallet & Apple Pay and select the card. Once the card is verified, select next to begin using Apple Pay.

iCloud Keychain stores website usernames, credit card information, Wi-Fi network information, and Mail, Contacts, Calendar, and Messages accounts for devices you approve. Creating a new account online or in any of the above apps will add the new username and password to all other approved devices.

**Siri**

Next, the setup will ask if you want to use Siri or don’t use Siri. You can enable Siri later at any time in Settings.

Siri is an intelligent virtual assistant, a hands-free program that responds to questions and commands and works with a variety of apps.

In Settings > Siri, you can allow access to Siri while on the iPad lock screen and enable the “Hey Siri” feature*. You can adjust the language Siri recognizes and responds with as well as the voice gender and accent.

Siri also allows Voice Feedback settings which allow you to adjust when or if Siri responds out loud as well as with text, and My Info.
prompts you to select a contact from the Contacts list and then uploads and remembers the information stored in Contacts such as birthdays, family members, and addresses.

Once enabled, Siri can be activated by clicking and holding the Home button or saying “Hey Siri.” You should hear a chime when Siri is ready.

Siri will not be explored in this manual.

*The “Hey Siri” feature is only available on most iPads while the iPad is plugged in. The exception is iPad Pro 9.7-inch which does not require the iPad to be plugged in.

**App Analytics**

The final screen of the setup will prompt you to choose to **AUTOMATICALLY SEND** or **DON’T SEND** software crashes, app crashes, and usage information collected on your device.

App Analytics sends information to app developers to help improve their products, and health and fitness activity collected health apps to Apple so Apple can improve their mobile and wheelchair fitness features.

Enabling **AUTOMATICALLY SEND** will share crash and app use reports with Apple to allow them to identify areas of concern to address in future updates.

**DON’T SEND** will not affect the use of the iPad.

App Analytics can be enabled at any time in **SETTINGS > PRIVACY > DIAGNOSTICS & USAGE**.

After you select **AUTOMATICALLY SEND** or **DON’T SEND**, the iPad screen will turn white. The message “Welcome to iPad” will show in the middle of the screen.

Select **GET STARTED** to finish the setup and start using the iPad.

Keep your device connected to Wi-Fi and plugged into power after setup to allow background processes like iCloud Backup to finish.
SECTION 1.2: APPS AND NAVIGATION

PRELOADED APPS

The Apple iPad has a collection of apps built-in and ready for use following setup. Which apps are useful will be determined by your client.

The following apps installed on the Home screen of the iPad will be discussed in more detail later in this manual.

**CALENDAR:** allows you to create and manage upcoming events (i.e. CBIS bowling, or a visit with family), set up alerts for appointments, share agendas, and invite others to events.

**CLOCK:** set alarms, switch or add time zones, access a stopwatch and timer, and manage your sleep cycle.

**NOTES:** allows you to write notes, create lists with check boxes, draw or attach images, and connect to calendar events. When connected to Wi-Fi, Notes also provides a dictation function.

**REMINDERS:** create and organize checklists and set time and location based alerts for each event. Reminders allows you to keep track of what you have just done and what step comes next.

**SETTINGS:** the hub of management for the iPad, SETTINGS collects controls for feature activations and permissions, app management, and accessibility functions.
Navigating Apps

The first time the iPad is set up there will be three Home pages.

You can check the number of Home screen pages on the iPad by counting the number of dots above the dock.

The iPad Dock is at the bottom of every Home screen and initially contains 4 apps: Messages, Mail, Safari, and Music. You can swap these apps later at any time.

The main page contains the preloaded apps discussed above as well as many other apps which may be useful including Maps, Camera, and the iTunes and Apps Stores. This page is quite crowded.

The second page contains fewer apps which may or may not be relevant to your client’s interests.

To edit apps on any screen, press and hold one finger on an app icon until it starts to wiggle. Some apps will have a small circle with an X inside it on the top left corner of the icon; these apps can be deleted from the iPad*.
To move an app, press and slide your finger across the screen to drag the app to where you want it on the iPad. There are invisible slots available on a page and each app will remain in a slot. This keeps the iPad orderly and cannot be turned off. If there are too many apps on a page, the iPad will automatically create another page or you can manual create a folder.

To create folders, tap and hold an app icon until it wiggles. Then drag the icon over a second app and hold it until the screen flashes twice. A large grey box will expand with the second app icon inside. Release you finger and the app icon will settle into the folder. At the top of the folder, an intuitive name will already be marked. Tap on the name to start typing, or tap outside the folder to leave the name as is.

Once you create a folder, you can edit the name or arrange the apps by pressing and holding any app until it wiggles and then selecting the folder you want to edit. Folders contain the same page system as the Home screens. You can see the number of pages in a folder by counting the small grey dots at the bottom of the expanded folder. You can arrange the apps in the folder by tapping and holding them until they wiggle, and dragging them where you want them.

To add an app to a folder, tap and drag the wiggling icon to the folder. When the folder expands, or opens, remove your finger and the app will drop into the folder. To remove an app from a folder, tap and drag the app outside the edge of the expanded folder and hold it until the folder collapses, then drop the app on the Home screen.

To manually create a new Home page or page within a folder, tap and hold an app until it wiggles, then drag the app as far to the right-side edge of the screen as you can without putting your finger on the iPad border. Hold the app at the edge of the screen until an empty page appears and a new dot shows above the dock.

To move an app to a previous page, repeat the above steps with the app on the leftmost side of the screen.

To exit edit mode, click the Home button. The apps will stop wiggling.

*To restore a preloaded app that has been deleted, open SETTINGS > GENERAL > RESET > RESET HOME SCREEN LAYOUT. This restores Home screens to default and will delete extra screens and folders that you created. Downloaded apps will remain installed and will occupy a new page on the iPad, separate from preloaded apps, and arranged in alphabetical order.
## Chapter 2: Accessibility

![Accessibility Settings](image)

<table>
<thead>
<tr>
<th>Settings</th>
<th>Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td><strong>Vision</strong></td>
</tr>
</tbody>
</table>
| Airplane Mode             | VoiceOver Off
| Wi-Fi                     | Zoom On      |
| Bluetooth                 | Magnifier On |
| Notifications             | Display Accommodations Off |
| Control Center            | Speech       |
| Do Not Disturb            | **Interaction** |
|                           | Switch Control Off |
|                           | AssistiveTouch Off |
|                           | Touch Accommodations Off |
|                           | **On/Off Labels** |
|                           | Larger Text Off |
|                           | Bold Text Off |
|                           | Button Shapes Off |
|                           | Increase Contrast |
|                           | Reduce Motion Off |
|                           | On/Off Labels Off |
|                           | **Sounds**    |
|                           | **Wallpaper** |
|                           | **Siri**      |
|                           | **Passcode**  |
|                           | **Battery**   |
|                           | **Privacy**   |
|                           | **iCloud**    |
|                           | **iTunes & App Store** |
|                           | **Contacts**  |
|                           | **Settings**  |
Section 2.1: Vision

Apple strives to create technology usable by everyone. As such, they incorporate a variety of accessibility features into their products. This chapter will explore three main areas of accessibility features relating to vision, motor, and audio disabilities. Not all features will be appropriate for your client and some features require additional, expensive accessories (hardware).

To manage software features, select SETTINGS on the Home page. Most accessibility features are found under SETTINGS > GENERAL > ACCESSIBILITY. This manual will discuss these settings and other features found outside the Accessibility page.

Practice using the following features before introducing them to your client in order to avoid client confusion or accidental learning of incorrect use.

Vision

Accessibility features for vision difficulties include reducing the motion of apps and screens on the iPad, adjusting colour, lighting, size of images and text, and enabling the Speech function to read screens aloud. Each of these features, among others, will be explored in detail in this section.

Display & Brightness

Display and Brightness settings allow you to adjust light and visual output of the iPad. To change these settings, open SETTINGS > DISPLAY & BRIGHTNESS.

A slide rule at the top right side of the screen allows you to manually adjust the brightness to the desired degree.

Underneath the slide rule is a button to enable Auto-Brightness. Auto-Brightness adjusts the light output of the iPad automatically (i.e. brighter in direct sunlight and darker in dark areas) for easier viewing.
Night Shift is also available on this page. It automatically adjusts the colour output of the iPad from blue light (daytime) to warmer yellow light (nighttime) as the sun goes down. Warmer light after dark is thought to improve sleep quality and latency, while the blue light emitted by most electronics has been reported to disrupt Circadian Rhythm and impede production of melatonin, a sleep regulation hormone.

Night Shift can be scheduled to turn on automatically or it can be manually enabled. Night Shift has no effect on battery life.

When you enable Scheduled Night Shift, the schedule defaults to turning Night Shift on at 10:00pm and off at 7:00am.

To change the schedule, tap Night Shift to open a new page. Tap anywhere on the FROM/TO button. Selecting this button will take you to another page where you can choose between two settings: SUNSET TO SUNRISE or CUSTOM SCHEDULE.

Sunset to Sunrise scheduling requires Location Services to be on and will automatically obtain data through Wi-Fi about the estimated time of sundown and sunrise. The iPad will enable or disable Night Shift accordingly.

Custom Schedule allows you to choose the exact time you want Night Shift enabled and disabled. Selecting TURN ON AT or TURN OFF AT will open a scroll menu through which you adjust the hour and minute as well as AM or PM times you want Night Shift activated or turned off.

To manually enable Night Shift, select MANUALLY ENABLE UNTIL TOMORROW. At some point during the night, the iPad will reset this function and you will be required to enable it again the next time you want Night Shift activated.
At the bottom of the Night Shift page, there is a sliding scale for COLOUR TEMPERATURE. The left side of the scale is labelled Less Warm and produces a very faint peach colour when Night Shift is activated. The right side of the scale is MORE WARM and emits light that is deeper orange.

MORE WARM is recommended for late-night reading.

Auto-Lock function allows you to choose how long the iPad will wait between the last registered touch and timeout. Timeout results in the iPad screen going dark and the iPad automatically locking (if a passcode is enabled). If your client has sensitive information on his or her iPad, or wishes to keep others from using the iPad, AUTO-LOCK is recommended.

Tap AUTO-LOCK to open a list of timeout wait times. The shortest amount of time is 2 MINUTES and the most is NEVER. The amount of time before auto-lock should be decided by the client. His or her level of mobility and frequency of use should be considered when making this choice.

Lock / Unlock determines whether the iPad will lock when the case cover is closed. If a PASSCODE is not required to enter the iPad, this function will not affect use.

Text Size opens a sliding scale of text sizes. Tap and drag the white circle on the scale towards the left side to shrink text size. Tap and drag the circle to the right to increase text size.

Text size can be increased even further in SETTINGS > GENERAL > ACCESSIBILITY > LARGER TEXT. This is discussed in greater detail in DISPLAY ACCOMMODATIONS.
**Bold Text** bolds all text on the iPad for clearer reading by making each letter thicker and darker. Tap the toggle to enable the feature.

Enabling or disabling the Bold Text feature requires the iPad to restart. A pop-up message will appear, reading “Applying this setting will restart your iPad.” Select “Cancel” if you do not want to enable the feature. Select “Continue” to automatically restart the iPad and apply bold text.

**Wallpaper**
Choosing a wallpaper can be tricky. The iPad has several backgrounds preloaded which can be accessed in this section. Saved or downloaded photos and pictures taken with the camera can also be set as wallpaper.

There are two wallpaper types that can be set as background: Dynamic and Stills.

**Dynamic Backgrounds** are active; they have slowly moving designs in a variety of colours. Dynamic backgrounds can be relaxing, but these images are also very distracting and use up a lot of battery life.

**Stills Backgrounds** are static and come in an assortment of images or flat colours. Typical preloaded images include space, nature, and multi-colour splotches. Stills backgrounds also provides the option of selecting images from the Photos app and downloaded photos.
To change the iPad background, select open **SETTINGS > WALLPAPER > CHOOSE A NEW WALLPAPER**. Select DYNAMIC or STILLS or choose from CAMERA ROLL, SCREENSHOTS, or MY PHOTO STREAM directories. Tapping on any selection will open a new page where you can scroll through every photo in the current directory.

Tap the photo you want to set as the background. A preview screen will pop up. At the bottom of the wallpaper preview, you can choose to assign the current image to the LOCK SCREEN, HOME SCREEN, or BOTH. Select a screen to set the image as wallpaper. Selecting one of the above option or tapping “Cancel” will close the preview window and take you back to the image directory.

The preview page provides the option to enable **PERSPECTIVE ZOOM**. **PERSPECTIVE ZOOM** creates a 3D effect on the lock screen of the iPad by stretching the image along the borders when you tilt the screen to generate an illusion of depth. This effect is purely aesthetic and will not affect functioning of the iPad although more battery power is used when **PERSPECTIVE ZOOM** is enabled.

When choosing a background, it is important to consider the contrast between the background image and the labels and icons of apps on the screen. The iPad is intuitive and will automatically change the labels for folders and apps to contrast with the background; dark backgrounds will have white labels while lighter backgrounds will have black labels.

It may be necessary to test several backgrounds to find the best contrast for your client.
**VoiceOver**

VoiceOver provides an opportunity for individuals with low or no vision to navigate an iPad independently. Enabling VoiceOver activates a screen reader with a programmable voice and reading speed which will read aloud selected items on the screen.

Headphones may be appropriate for use in loud, crowded areas for easier listening, or in quiet populated areas where the screen reader may disturb others.

To turn on VoiceOver, tap **Settings** > **Accessibility** > **VoiceOver** to enter the VoiceOver menu. From the VoiceOver menu, you can enable or disable the VoiceOver feature, change the speaking rate, pair an audio device for Braille reading, and modify typing settings.

To navigate the iPad when VoiceOver is active, tap anywhere on the screen and the item under your finger will be selected. VoiceOver will read the selection aloud.

Swipe left to move the selection backward or right to move the cursor forward along the page. Each button will be read out loud by the screen reader as it is selected.

To activate a selection, double-tap with one finger anywhere on the screen.

To scroll quickly through a page, tap to select any item on the section of the page you want to scroll through and then swipe up or down with three fingers. The number of lines currently displayed on screen and the total number of lines available in that section will be read aloud to help you orient how far along a section you are.

Under the **VoiceOver** toggle at the top of the screen is a short list of gestures for using the feature. These gestures including tapping once to select items, double-tapping with one finger to activate selections, and swiping with three fingers to scroll. **Voiceover Practice** is available under this list.
VoiceOver Practice opens a new page from which you can explore and practice VoiceOver gestures. The majority of the page is the practice area, so gestures that would normally take you to a new selection (i.e. swipe right) will not register as an action. The gesture name will be displayed on screen along with a descriptor sentence of the gesture's action and VoiceOver will read these aloud, (i.e. “Flick right. Move to next item.”)
To exit VoiceOver Practice, tap “Done” in the top right corner to select the button, then double-tap to activate it.

Speaking Rate is a sliding scale which controls how fast or slow the VoiceOver reads.

The slowest speech rate is on the left, marked by a tortoise, and the fastest is on the right, marked by hare. To change the speech rate, tap and hold the white circle on the scale and drag it toward either end until you reach your optimum rate of speech.

Use Pitch Change gives a subtle flare to the screen reader by speaking with a higher pitch at the beginning of a large section of text and a lower pitch to the end of a section. To enable Pitch Change, select Use Pitch Change on the VoiceOver page. Pitch changes are minor but may help keep the user focused when listening to audiobooks or large sections of text online.
VERBOSITY controls how much text is read by the screen reader for each selection. By default, the screen reader will SPEAK HINTS when you select a control or app, (i.e. “Use Pitch Change. On. Double tap to toggle setting” or “Camera. Double tap to open. Actions available.”) When VERBOSITY is disabled, the screen reader will read only the name of the button you have selected, (i.e. “Use Pitch Change.”)

SPEECH opens a new page from which to you can change the gender and accent of the screen reader’s voice and correct pronunciations.

**Voice** opens a menu of different voices separated by accents. Each voice has a name*.

Voices with a cloud must be downloaded to the iPad before they can be used. The storage space of these voices is shown below the voice (i.e. Kate, 150 MB).

Some voice options are buttons; clicking these will take you to a new page where you can select the default or Enhanced version of that voice**. Enhanced voices usually take up more storage space on the iPad than default voices but sound less robotic than the default voices.

Alex is the closest voice to sounding human and is also the largest file.

*Fun fact: Samantha is the voice of Kingston’s buses.

**Fred does not have an Enhanced version.
The Pronunciations button takes you to a new page with a default blank list. Some voices (e.g., Samantha) may require you to create substitute pronunciations for certain words (e.g., species, favour). Some voices (e.g., Alex) will have fewer, if any, need for replacement pronunciations.

To delete a pronunciation, tap the word to bring up the REPLACEMENT page. Tap “Edit” in the bottom left corner of the screen. A red circle will appear next to content that can be deleted. Tap the red circle, then tap “Delete” to delete the pronunciation.

At the top right corner of the Pronunciations page is a plus sign. Select the plus sign to open the REPLACEMENT page.

The Replacement page allows you to type in a word or Phrase that you want to change as well as a Substitution pronunciation. The iPad gives you the opportunity to type or dictate the new pronunciation.

Languages, Voices, Ignore Case, and Apply to all Apps buttons control the conditions under which the substitute pronunciation will be applied.

As you add substitute pronunciations they will be added to the list on the Replacement page.

Add New Language allows you to add another language to the VoiceOver Rotor*.

*ROTOR is explained in greater detail in the ROTOR subsection of the VoiceOver section.
**Braille** allows for a braille reader to be connected to the iPad via Bluetooth. If Bluetooth is not enabled when the Braille page is opened, a pop-up window will ask if you want to turn on Bluetooth. Tap “Yes” to turn Bluetooth on. See Switch Control for more information on wirelessly connecting an external device to the iPad.

You can change the input and output for any connected Braille device. Tap “Braille Display Output” or “Braille Display Input” to change how the Braille reader sends and receives information from the iPad.

**Braille Display Input/Output**: Depending on how your client reads Braille, tap “Uncontracted Six-dot Braille,” “Uncontracted Eight-dot Braille,” or “Contracted Braille” to enable the setting on the Braille display.

**Braille Screen Input**: Tap “Uncontracted Six-dot Braille,” “Uncontracted Eight-dot Braille,” or “Contracted Braille” to enable the setting on the Braille display.

Tap “Reverse Dot Positions” to inverse the positions of dots 1 and 3, and 4 and 6 on the Braille display.

**Status Cell**: Text attributes such as font, style, underline, etc. are displayed in Status Cells on the Braille display. The first few cells on the display are used as Status Cells, and can be set to the left or right side of the display. By default, Status Cells are not enabled. Tap “Left” or “Right” to set the position of the Status Cells on the display.
Equations use Nemeth Code: Nemeth Code is a way of displaying mathematical and technical equations using a Braille equivalent. Tap the toggle to enable Nemeth Code display.

Show Onscreen Keyboard: When typing on the iPad, a software keyboard will open on the bottom half of the screen. If a Braille display is connected, the software keyboard will not open. Tap the toggle to enable the software keyboard if it is needed.

Turn Pages when Panning: allows you to turn pages when scrolling with the Braille display. Tap the toggle to enable the feature.

Braille Translation: works with the language setting on the iPad to translate from digital text to Braille (e.g., English to English Braille or French to French Braille). Tap “Braille Translation” to open a new page of dialects available for the translation. Tap one of the listed dialects to set that item to the Braille output.
Alert Display Duration: controls the duration for which an alert or notification will be presented on the Braille display. By default, the duration is 3.00 seconds.

To shorten the duration of the alert presentation, tap the minus button on the right side of the page. The shortest alert presentation is 0.50 seconds.

To increase the duration, tap the plus button on the right side of the page. The greatest alert presentation duration is 20.00 seconds.

AUDIO controls how sounds behave while VoiceOver is enabled.

Tap “Audio” to open a new page.

Use Sound Effects: By default, this toggle will be on. While the sound effects are on, the VoiceOver cursor will click when it is moved from one item to another.

Tap the toggle at the top right side the page to disable VoiceOver sound effects.

Audio Ducking: This feature controls how VoiceOver audio acts when another audio track is active. For example, if you are listening to a video online or in the Videos app, the video’s audio will quiet when VoiceOver speaks so VoiceOver can more easily be heard.

Tap the toggle on the right side of the page to enable Audio Ducking.
ROTOR is a shortcut to enabling/disabling settings while using VoiceOver. It involves a two-finger gesture with one hand.

Hold two fingers approximately an inch apart and rotate them on the iPad screen as if turning a dial. If a client cannot use one hand to complete the gesture, two hands can mimic the gesture effectively.

If done correctly, the rotor will activate and you can cycle through different settings assigned to the rotor by using the dial-turning gesture.

Tap “Rotor” to open a new page of items that can be assigned to the rotor. To add an item, tap the label. A check mark will appear on the right side of the page to indicate the item is accessible through the VoiceOver Rotor.

Tap an item with a check mark to remove it from the rotor.

TYING STYLE changes the way the iPad keyboard receives input. The default setting is Standard Typing.

Standard Typing involves the iPad user selecting a key on the keyboard, which VoiceOver will read. To insert the selected key, you double-click anywhere on the screen.

Touch Typing removes double-clicking from the keyboard. To insert a character or punctuation, or change the keyboard from letters to numbers, touch the desired button on the keyboard once. The character will be inserted when you lift your finger.

Direct Touch Typing is functionally the same as Touch Typing with one exception. To insert a character, touch the desired button once. Holding your finger on the button for any length of time will cancel inserting the character.
PHONETIC FEEDBACK applies to keyboard input and how the screen reader reads individual characters on the keyboard. The default setting for PHONETIC FEEDBACK is Character and Phonetics.

Character and Phonetics is activated by selecting a character on the keyboard and holding your finger on the button. The screen reader will announce the character and the NATO Phonetic Alphabet equivalent. For example, “A. Alpha.”

Phonetics Only is activated by pressing and holding a button on the keyboard. This will result in the screen reader announcing the NATO Phonetic Alphabet word for the selected letter. For example, “Alpha.”

TYPING FEEDBACK opens an additional page with options for both software (on the iPad) and hardware (accessory) keyboards. This determines what is said by the screen reader when you enter a new character or word while typing. The default setting for TYPING FEEDBACK for both Software and Hardware Keyboards is Characters and Words.

Characters: while typing, the screen reader will announce each new character you enter.

Words: while typing, the screen reader will announce each word as you finish typing it.

Characters and Words: while typing, the screen reader will announce each character when you enter it and will read aloud each word as you finish typing it. Long pauses between character entry will also prompt the screen reader to read a word.
MODIFIER KEYS requires a hardware keyboard. Modifier keys are keys which change the function of other keys on a keyboard. The most common modifier keys on Apple iOS are Command, Alt, Function, and Shift.

An example of a modifier key: pressing Shift on a keyboard modifies the output of a letter by changing it from lowercase to uppercase.

ALWAYS SPEAK NOTIFICATIONS is a button that enables or disables the VoiceOver screen reader from announcing new email messages or app notifications as they appear. To use this feature, Notifications must be enabled in the app you want the screen reader to announce notifications for.

To enable Notifications in an app, open the app. If notifications are available, you will be asked to ALLOW notifications the first time you open the app. A pop-up message saying “[App] Would Like to Send You Notifications” will appear with the option to DON’T ALLOW or ALLOW.

To enable notifications in an app later, open the in-app settings menu at any time and search for ENABLE NOTIFICATIONS or a similar button*. 
To enable notifications from the iPad, open SETTINGS. Tap NOTIFICATIONS in the menu on the left-hand side. A list of apps on the iPad that can send notifications will be listed on the right-hand side.

Under the name of each app in this list is the app’s notification status. Apps that are not set to send notifications will say “Off.” Apps that have notifications enabled will specify what kinds of notifications are sent: Badges, Banners, Sounds, and/or Alerts.

To set notifications for an app, tap on the app you want to receive notifications from. Select ALLOW NOTIFICATIONS. Three or four toggle buttons are available depending on the app: Show in Notification Center**, Sounds***, Badge App Icon****, and Show on Lock Screen.

Alert Style When Unlocked changes the way notifications appear when the iPad is in use or unlocked but idle. There are three options for alerts.

None: no alerts are created.

Banners: a small window previewing the notification will slide down from the top of the iPad screen. This will slide back up and out of view after a few moments. To access this notification, open the Notification Center.
**Alerts:** a small window previewing the notification will appear at the top of the screen. This window will remain on screen until activated. To activate the notification, swipe down from the bottom of the notification. An option menu will open. Each alert will have different options depending on the app. Select the most appropriate option.

*The exact process to enable notifications within an app changes for each app.*

**To access Notification Center, swipe down from the top of the screen. All notifications from the iPad and approved apps are listed here until you select CLEAR.**

***Activates a chime when new notifications are received from approved apps. The exact sound can be changed by opening SETTINGS > NOTIFICATIONS > [APP] > SOUNDS and then selecting a tone from the list.***

****Badge App Icons are small red circles with numbers inside them on the top right corners of apps. The number in the circle represents how many unread notifications have been received from that app. To read the notifications, open the app.***

**NAVIGATE IMAGES changes how the VoiceOver screen reader announces images when you are browsing Safari.** Select NAVIGATE IMAGES to open another page with three options.

**Always** enables the screen reader to read and describe each photo in a Safari webpage when the photo is selected.

**With descriptions** enables the screen reader to read and describe each photo with an embedded description in a Safari webpage when the photo is selected.

**Never** disables the screen reader from reading images in Safari webpages.
LARGE CURSOR is a button which increases the width of the VoiceOver selection cursor when enabled. To enable LARGE CURSOR when VoiceOver is enabled, double-tap the LARGE CURSOR button with one finger. To restore the VoiceOver cursor to its original size, double-tap the LARGE CURSOR button again.

DOUBLE-TAP TIMEOUT allows you to change the length of time accepted between screen touches for the gesture to register as a double-tap. The default TIMEOUT length is 0.25 seconds. Select DOUBLE-TAP TIMEOUT to open another page. Select the plus or minus buttons to increase or decrease the TIMEOUT length.

The greatest length of accepted time between taps for the iPad to register a double-tap is 0.50 seconds; the smallest increment is 0.20 seconds.

ZOOM
ZOOM magnifies the entire iPad screen. Select SETTINGS > ACCESSIBILITY > ZOOM > ZOOM to enable this feature.
While **ZOOM** is enabled, double-tap anywhere on the iPad screen with three fingers to magnify. Double-tap with three fingers the screen to disable **ZOOM**.

When **ZOOM** is enabled, triple-tap anywhere on the screen or tap once on the little rectangle at the bottom of the **ZOOM** window to open the **ZOOM MENU**.

From the **ZOOM MENU**, choose **Resize Lens** to change the size of the **ZOOM** window. Small, opaque dots will appear at the corners and along the edges of the **ZOOM** window. Tap and drag any of these dots to resize the window. Tap once with one finger to exit **Resize Lens**.

**FOLLOW FOCUS** links the **ZOOM** window to the keyboard during typing. When **FOLLOW FOCUS** is enabled and typing is open, the **ZOOM** window will center and track on each character you input without magnifying the keyboard.

**SMART TYPING** changes the magnification type from full-screen to window **ZOOM** when typing is open. The text will be magnified but keyboard will not.
SHOW CONTROLLER allows you to open the ZOOM CONTROLLER when this feature is enabled. The ZOOM CONTROLLER provides quick access to ZOOM controls even when ZOOM is not active. Tap and drag the ZOOM CONTROLLER to reposition it anywhere on the screen.

Tap the controller to open ZOOM controls.

IDLE VISIBILITY opens a sliding scale which controls the transparency of the ZOOM CONTROLLER when it is not in use. The left side of the scale is 5% visibility or increased transparency. The right side of the scale is 100% visibility or less transparency. The ZOOM CONTROLLER will regain full visibility when activated by tapping on it.

Tap and drag the white circle on the scale to adjust the level of visibility.

ZOOM REGION controls whether enabling ZOOM will activate windowed or full screen ZOOM.

Tap to open a new page, then tap the desired ZOOM region. The default setting is Window Zoom.

ZOOM FILTER changes what filters are applied when ZOOM is active. The default setting is None, which means ZOOM magnifies the screen with no filters. Tap a filter to enable it.

Inverted will reverse colours in the ZOOM selection.
Grayscale deactivates colours and makes the zoom selection shades of black, white, and gray.

Grayscale Inverted deactivates colours and reverses the shades of black, white, and gray in the zoom selection.

Low Light darkens the zoom selection, like wearing sunglasses. This is useful for bright areas such as outside in the sun or dark areas such as at night with the light out. Low Light is also useful to those with sensitivity to light.

Maximum zoom level is a sliding scale which changes how much magnification is applied when zoom is enabled.

The left side is 1.2x or low magnification; the right side is 15.0x or increased magnification.

Tap and drag the white circle on the scale to adjust the level of magnification.

Magnifier
Magnifier turns your camera into a magnifying glass. It is a separate app from the Camera and cannot save images to Photos for later browsing. This feature was built to assist those with vision impairments with reading text in different mediums outside the iPad. In addition to greatly increasing the size of text, Magnifier allows you to take screenshots and apply filters to compensate for colour-blindness.
To enable **MAGNIFIER**, open **SETTINGS > ACCESSIBILITY > MAGNIFIER**. Select the toggle at the top of the screen.

To use **MAGNIFIER**, triple-click the Home button. If a different accessibility feature is enabled in the **ACCESSIBILITY SHORTCUT***, a menu will pop up where you will be required to select the action you want to take. Select **MAGNIFIER**.

**AUTO-BRIGHTNESS** allows the **MAGNIFIER** to adjust the brightness and contrast of the screen based on the ambient light at the time of use. To enable or disable **AUTO-BRIGHTNESS**, tap on the toggle switch on the **MAGNIFIER** page.

While active, the **MAGNIFIER** offers a variety of features similar to those found in the Camera app, including magnification control, auto-focus lock, and colour filters. These features are available in the dock at the bottom of the screen when **MAGNIFIER** is active.

**Magnification Control**: the sliding scale at the top of the **MAGNIFIER** dock controls the level of zoom on the camera. The left side of the scale is standard magnification; the right side increases the magnification.

To adjust the zoom, the Auto-Focus Lock in the bottom left corner must be disabled. Tap and drag the small yellow button on the scale to find the desired level of magnification.

Alternatively, you can swipe across the screen with one finger to increase the zoom in small increments. Swipe left to increase magnification or swipe right to decrease magnification.
Auto-Focus Lock: allows you to lock the focus of the MAGNIFIER so the camera will not readjust when you are visually scanning with the iPad. This reduces the motion of the screen and may help prevent motion sickness or loss of camera focus when taking a freeze frame. Tap to enable or disable the Lock. When the icon is yellow, the focus is locked.

Freeze Frame/Screen Capture: the round, white Capture button in the middle of the MAGNIFIER dock takes a photo of what the camera is showing. Tap the button once and hold the iPad steady for 2-3 seconds while the camera takes a photo.

This photo will not be saved to the iPad but can be accessed in MAGNIFIER even if the app is closed; the image will remain until you tap the Capture button again.

To continue using the MAGNIFIER, tap the Capture button again and dismiss the photo.

Filters: Tap the icon in the bottom right corner of the dock to open another page in the MAGNIFICATION dock. On the second page are five filters, two sliding scales, and an Invert button.

The five filters are White/Blue, Yellow/Blue, Grayscale, Yellow/Black, and Red/Black. The first label of each filter indicates what colour will replace darker areas, while the second label indicates the replacement colour of lighter areas.

For example, when Red/Black filter is active, black areas will appear bright red and white areas will appear black.

To change the filter, swipe left or right on the screen with one finger.
**Brightness:** The top sliding scale on the dock, marked by a sun icon, increases the brightness of the screen.

The left side of the scale is darker and has increased black tone; the right side is brighter and has increased white tone. Tap and drag the yellow dot along the scale to increase or decrease the brightness.

**Contrast:** The second scale, marked by a bisected circle of white and black, controls the contrast of the screen.

The left side of the scale has decreased contrast which mutes the colours of the screen by applying a grey filter; the right side increases the contrast by enhancing the vibrancy of the colours.

Too much contrast will result in increased shadows and all but the brightest colours turning black.

**Invert:** reverses the colours of the image displayed on screen when MAGNIFIER is active. Invert can be applied in all or None of the filters. Tap the Invert icon to enable or disable this feature.

*For more information on the Accessibility Shortcut, see SUBSECTION 2.4. ACCESSIBILITY SHORTCUT.*
DISPLAY ACCOMMODATIONS

The features found in this section have been designed to help those with colour-blindness or other visual impairments to better differentiate between colours when using the iPad. The colour filters discussed later in this subsection apply to two types of green-red blindness and blue-yellow blindness.

INVERT COLORS reverses the colours on the iPad, in apps, and in videos. Enabling this feature automatically disables Night Shift. To enable or disable INVERT COLORS, tap the toggle at the top right side of the screen.

COLOR FILTERS opens another page from which you can preview and apply different filters. At the top of the page is an image that will allow you to preview different filters. Swipe left or right to view two other images that will help you find the filter that works best for your client.

The colour pencils provides a rainbow of individual colours ranging from red to blue to brown from which to preview the changes applied by each filter.

The colour columns allow you to see the intensity of colours in each filter on three different levels of vibrancy.

The honeycomb gradients help you to distinguish which filter is the best fit for your client. The filter that allows your client to see the entirety of each vertical line will match the type of colour-blindness or sensitivity your client has.
To apply COLOUR FILTERS tap the toggle below the preview images. This will open the filters options and allow you to choose the filter you want to apply.

FILTER options include Grayscale, Red/Green for Protanopia, Green/Red for Deuteranopia, Blue/Yellow for Tritanopia, and Color Tint.

Tap any of the filters to apply it. When a filter is applied, a check mark will appear on the right side of the selected button.

Selecting Color Tint opens two sliding scales labelled Intensity and Hue.

**Intensity:** Tap and drag the little white circle on the scale to increase or decrease the intensity of the tint applied. The left side of the scale is less intense; the right side is more intense.

**Hue:** Tap and drag the little white circle on the scale to cycle through different tints. Both ends of the scale are red. From left to right, the colours are red, yellow, green, blue, indigo, violet, pink, and red.

**REDUCE WHITE POINT:** On the main Display Accommodations page, tap on the toggle to enable or disable this feature. REDUCE WHITE POINT allows you to adjust the intensity of bright colours shown on the iPad.

Enabling REDUCE WHITE POINT opens a sliding scale; tap and drag the little white circle on the scale to adjust the colour intensity.

The left side of the scale is more intense, or 25% reduction of intensity. The right side of the scale is less intense, or 100% reduction of colour intensity.
SPEECH
This feature is a version of the same screen reader found in VoiceOver. It is useful for those with some vision impairment but may not be as suitable for users who are blind or have severely impaired vision. Users with severely impaired vision should use VoiceOver instead.

Speech activates a screen reader which reads aloud individual words or pages of text. Speech reader reads the entire iPad screen (i.e. names of folders) but does not allow you to navigate within the iPad as VoiceOver does.

To enable the Speech feature, open SETTINGS > GENERAL > ACCESSIBILITY > SPEECH.

SPEAK SELECTION: to enable this feature, tap the toggle on the top right side of the screen. Highlighting a word* on a webpage or other document viewer such as iBooks, produces a pop up menu. With SPEAK SELECTION on, an additional button labelled Speak is added to the menu.

Tap Speak to start the screen reader reading the highlighted text. The menu will change “Speak” to “Pause” while the screen reader is working.

*To highlight a word in a text block, tap and hold your finger on the word until it is highlighted in blue. A black menu will pop up just above the highlight. There will be two markers at the ends of the highlight which you can tap and drag to expand the selection. Highlighting will not work for all documents or webpages.
**Speak Screen:** to enable Speak Screen, tap the toggle on the right side of the screen. When Speak Screen is enabled, you can swipe down with two fingers from the top of the screen to have the screen reader read aloud all text currently on the screen.

A menu will pop-up in the middle of the screen displaying controls for changing speed, skipping words, and playing/pausing the reader. The arrow button collapses the menu to a small icon at the side of the screen. The X, the last button on the right closes the menu and stops the screen reader.

Speak Screen works on webpages and in other document viewers such as iBooks, but does not work outside of select apps (i.e., Settings, iBooks, Notes, Calendar, Contacts, and Camera, the names and the number of folders in Photos, as well as the number of photos in each folder; it does not describe photo content. Speak Screen does not work with Clock or downloaded game apps).

**Highlight Content:** allows you to enable a feature which highlights text as it is spoken by the screen reader. This feature may be useful for tracking your place in long sections of text but it is not perfect. The highlighter may get stuck, jump forward, or move out of sync with the screen reader during reading and it may not be available on certain documents or web pages.

To enable Highlight Content, tap the toggle at the top right side of the page.

From the Highlight Content page, you can choose whether the screen reader will highlight individual words, sentences, or both as they are spoken.
Selecting either “Sentences” or “Words and Sentences,” opens an additional menu which allows you to choose the highlighting style. The two options are Underline and Background Colour (blue for individual words and red/pink for sentences).

**Typing Feedback**: enables the screen reader to read out letters and words during typing. Selecting this button opens another page.

**Characters**: enables the screen reader to read out individual letters as you enter them when typing.

**Character Hints**: enables the screen reader to read NATO Phonetic Alphabet equivalents for each letter you enter when typing. For example, if you type “A,” the screen reader will say, “Alpha.”

**Characters and Character Hints**: will enable the screen reader to read both the letter and the NATO Phonetic equivalent when typing. For example, if you type “a,” the screen reader will say, “A, Alpha.”

**Speak Words**: when enabled, the screen reader will announce whole words as you type them and press Enter. The screen reader will not say the word until you press Enter or end the sentence with punctuation.

**Speak Auto-text**: when enabled, the screen reader will announce auto-corrections to spelling and capitalization that the iPad makes when you are typing. Speak Auto-text will pronounce the correction rather than the misspelling, and will announce “Capital …” when it changes the capitalization of a letter.
Deleting and re-entering a misspelling twice will cause Speak Auto-text to remain silent and auto-correct to leave the word misspelled.

**Hold to Speak Predictions:** when enabled, tap and hold a word prediction listed at the top of the keyboard and screen reader will read it out loud.

To enter the selected word prediction, lift your finger from the word.

If you do not want to enter the word, keep pressure on the screen and slide your finger off the button, then lift your finger.

**VOICES:** works the same as in VoiceOver. For more information on VOICES, refer to VOICEOVER > SPEECH > VOICE section this manual.

**SPEAKING RATE** is a sliding scale which controls how fast or slow the screen reader reads. The slowest speech rate is on the left, marked by a tortoise, and the fastest is on the right, marked by a hare.

To change the speech rate, tap and hold the white circle on the scale and drag it toward either end until you reach your optimum rate of speech.

**PRONUNCIATIONS** are synced to the VoiceOver feature. Any pronunciation changes you make in VoiceOver will be available in SPEECH and vice versa. For more information on adding different pronunciations, see VOICEOVER > PRONUNCIATIONS in SUBSECTION 2.1.
TEXT, BUTTONS, CONTRAST, AND LABELS

LARGER TEXT

This feature allows you to adjust the font size of in-app text on the iPad. Some apps will accommodate for larger fonts, but some may not. NOTES, CLOCK, CONTACTS, PHOTOS, MUSIC, and APP STORE support larger fonts while iPad folders and app labels, CALENDAR, SAFARI, and most game apps downloaded to the iPad do not.

LARGER ACCESSIBILITY SIZES is a toggle which enables Dynamic Type. Dynamic Type doubles the maximum standard text size available on the iPad. Tap the toggle to enable or disable Dynamic Type.

Halfway down the screen is a sliding scale of available text sizes. The smallest text size is on the left side of the scale; the largest is on the right.

When Dynamic Type is enabled, the right side of the scale extends so that the previous largest text size becomes the middle of the scale.

Tap the white circle on the scale and drag it to your desired text size.
BOLD TEXT

This feature sets all text on the iPad and in some apps to bold, making letters thicker and easier to see. App labels and text on the iPad (including the digital clock at the top of the screen) will be bolded as well as select text in Safari (i.e. tab labels and buttons are bolded, but website content is not).

To enable **BOLD TEXT** tap the toggle on the **SETTINGS > ACCESSIBILITY** menu. Enabling or disabling the **BOLD TEXT** requires the iPad to restart. A pop-up message will appear, reading “Applying this setting will restart your iPad.” Select “Cancel” if you do not want to enable the feature. Select “Continue” to automatically restart the iPad and apply bold text.

BUTTON SHAPES

This feature adds a background to buttons on the iPad and in some apps. The most common button shape is light gray shading in a square around the button text*.

**SETTINGS**, Calendar, Clock, Notes, Photos, Safari, Music, and the App Store all support **BUTTON SHAPES**.

To enable or disable **BUTTON SHAPES** tap the toggle on the **SETTINGS > ACCESSIBILITY** menu.

*Although they do have buttons with shaded backgrounds, **SAFARI** and **MUSIC** underline certain buttons instead. For example, **MUSIC** provides a shaded button for Library at the top of the screen, but underlines the Library button at the bottom of the screen.
INCREASE CONTRAST

This feature makes it easier to distinguish different aspects of the screen for those with vision impairment. Selecting INCREASE CONTRAST from the SETTINGS > ACCESSIBILITY menu opens another page.

Reduce Transparency: improves contrast between the iPad background and folders to increase legibility. The default folders are semi-transparent to allow some colour from the background to remain visible behind the folder icon. When a folder is opened, the iPad background remains in view, blurred, on the edges.

Tap the toggle at the top of the page to enable or disable reduced transparency. Enabling Reduce Transparency turns folders and the iPad dock opaque as well as turning the iPad background completely black when folders are open.

Darken Colors: darkens the colour of some buttons, including those in the top bar of Safari (i.e. New Tab, Page Viewer) and in SETTINGS.
**Reduce Motion**

This feature eliminates the growing/shrinking animation when opening and closing apps and folders. It also disables the parallax, or 3D, effect of icons when looking at the iPad from different angles.

Tap the toggle to enable or disable Reduce Motion. Enabling Reduce Motion will change the open/close animations of apps and folders to a fade in/out effect.

![Reduce Motion toggle]

**Auto-Play Message Effects:**

When you enable Reduce Motion, a second toggle becomes available on the page. Reducing motion disables the automatic animation effects which you receive in iMessage and Facebook’s Messenger. To enable these automatic animations, tap the toggle across from Auto-Play Message Effects.

![Auto-Play Message Effects toggle]

**On/off Labels**

On/off labels can be found in Settings > General > Accessibility > On/Off Labels. Tap the toggle to enable on/off labels in toggle switches.

When a feature is disabled, the corresponding toggle will show a little white circle on the right side of the switch.

When a feature is enabled, the toggle will turn green and will show a white vertical line on the left side of the switch.
Section 2.2: MOTOR

Accessibility features for motor impairments include syncing control switches to the iPad, adjusting on-screen keyboards, and customizing how the iPad responds to touch. Each of these features, among others, will be explored in detail in this section.

**SWITCH CONTROL**

SWITCH CONTROL allows users with any motor impairment (from fine motor impairment to quadriplegia) to control the iPad. SWITCH CONTROL puts command of the iPad into an adaptive switch device so users with severe motor impairment can operate the iPad with a single activation of the device.

Many switches connect to the iPad via Bluetooth. Some newer switches connect with a cable inserted into the iPad’s charging port. If your client has yet to purchase a switch, (i.e. keyboard, joystick), it is important to know which switches can connect to each iPad generation (i.e. iPad Air 2, iPad mini 3, etc.) to avoid buying a switch that cannot connect.

To connect a device via Bluetooth, open SETTINGS > BLUETOOTH. Tap the toggle on the screen to enable Bluetooth.
When Bluetooth is enabled, the iPad becomes “discoverable” to nearby Bluetooth devices (For another device to be discoverable, Bluetooth must be enabled on that device as well). The iPad will be listed by the iPad name, (i.e. “Bridget’s iPad”), according to the name set by your client during creation of his/her Apple ID.*

Bluetooth-enabled devices will show up under the My Devices list. The status of these devices will be displayed on the right side of the screen as “Connected” or “Not Connected.”

To connect the iPad to a device, tap the name of the device under the My Devices List. The iPad will sync with the Bluetooth device. When the iPad shows “Connected” next to the device name, both devices are ready to use.

To remove a device from the My Devices list, tap the icon on the right side of the screen to open a new page. Tap “Forget This Device” and a pop-up window will appear.

***WARNING***

Do not enable SWITCH CONTROL without first setting a switch function (see Switches below). Enabling SWITCH CONTROL without a switch function will result in the iPad becoming unusable. Factory reset, which will erase all data on the iPad, is the only way to disable SWITCH CONTROL when it is turned on without a set switch function.

For information on restoring an iPad after factor reset, see Chapter 1, Section 1.1: Set Up iPad.
Switches

Before activating SWITCH CONTROL, you need to set up the new switch to serve a function on the iPad. It is necessary that you have at least one switch programmed with “Select Item.”

Select Item works the same as a single tap with your finger to the iPad screen, used to press a button, open an app, or select an item from a menu. Select Item reduces the chance of needing to Factory Reset the iPad.

Select SETTINGS > GENERAL > ACCESSIBILITY > SWITCH CONTROL > SWITCHES > ADD NEW SWITCH.

ADD NEW SWITCH: allows you to choose a switch source. You can choose an External, Screen, or Camera switch.

External Switches are hardware devices connected to the iPad via Bluetooth or connector cord. These can include, but are not limited to buttons, switches, joysticks, and keyboards.

To set a switch, the external device must be paired to the iPad via Bluetooth or connected by a cord. Then tap EXTERNAL on the iPad.

The iPad will ask you to activate your switch. Do this by pressing a single button, switch, or making a unidirectional motion on a joystick.

A pop-up window will give you the option to name the new switch or tap “Ok” to accept the default name, “Switch 1.” Type a new name (or keep “Switch 1”) and tap “Save” to accept the new name and close the pop-up window.
A new page called Actions will open. On this page, you can select which function the switch will serve when activated. For example, “Select Item” will, when a hardware switch is pressed, act like a single tap with one finger. This will select the item the SWITCH CONTROL cursor has highlighted. (See below for more on the cursor.)

**Screen** turns the entire iPad screen into a switch. In lieu of an external hardware device, the iPad screen acts as the switch and responds as such: a single tap on the screen with one finger is equivalent to pressing a switch button.

The screen tap can be set with the same functions as External Switches.

Normal iPad gestures will be disabled when SWITCH CONTROL is enabled and the screen is set as a switch.

**Camera** removes the necessity of pressing a button by turning the iPad camera into a switch. This feature allows you to tilt your head to one side to activate a programmed function. For example, tilting your head to the left can be set as the equivalent of clicking the Home button, while tilting your head to the right can be set to Select Item.

When a head movement to the left or right is set, and the iPad camera registers the corresponding side of your head, a blue line will appear on the same side of the screen, extending from top to bottom. The width of the blue lines indicates the distance between your face and the edge of the camera’s view.

If the camera does not register a face, a black notification will appear at the top of the screen reading, “Switch Control. Cannot locate your face.”
If the camera registers that you are too close to the screen to properly display a head movement, a black notification will appear at the top of the screen reading, “Switch Control. Your face is too close.”

Existing switches can be changed to perform new functions. To change the function of an existing switch open SETTINGS > GENERAL > ACCESSIBILITY > SWITCH CONTROL > SWITCHES and tap the switch you want to change. Tapping an existing switch will open the Actions page from which you can a new function for the switch.

**SWITCH CONTROL:** Once you have a switch connected and the “Select Item” function is programmed, enable **SWITCH CONTROL**. To enable **SWITCH CONTROL**, open SETTINGS > GENERAL > ACCESSIBILITY > SWITCH CONTROL and tap the toggle at the top right side of the screen.

**Item Mode:** Item Mode is the default setting for **SWITCH CONTROL**. When **SWITCH CONTROL** is enabled, the iPad will activate a cursor in the form a coloured double outline around the first button on the page. The cursor will cycle through each button on the page four (4) times on the default setting before disappearing. If the cursor times out, activate the switch or tap the screen to start the cursor cycle again. To select an item, activate your switch. See **Tap Behaviour** for more information.
**Point Mode:** If Item Mode is not suitable for your client or the activity your client is currently engaging in (e.g. playing a game or browsing a Web page with many items), Point Mode can be used instead. This changes the cursor from a cycling highlight to a set of crosshairs.

A thick vertical bar will scan across the screen 2.5-3.5* times before disappearing, unless it is selected. When selected, the thick vertical bar will freeze in place while a thin vertical line will scan between the edges of the thick line. Activate the switch again to mark the tap location. A thick horizontal scanner will appear. The horizontal scanner works in the same way as the vertical scanner. Activate the switch twice as with the vertical scanner to select an item. **SWITCH CONTROL** will give you the option to tap. Activate the switch to tap.

*Scanning is based on time, not laps of the screen, so scanning speed and landscape vs vertical alignment of the iPad affects the number of times the bars will cycle before disappearing.

Point Mode can be enabled through the Scanner Menu. For more information on the Scanner Menu, see **Scanner Menu**.
Recipes

Recipes are sets of specific actions or a series of gestures which can be assigned to switches for short periods of time. Frequently used or complex actions like turning the pages of an eBook or playing a game in an app can be programmed into a single action, e.g., pressing a switch.

Two recipes come preprogrammed on an iPad: “Tap Middle of Screen” and “Turn Pages.”

To delete a recipe, tap “Edit” in the top right corner of the screen. Tap the red circle next to the recipe you want to delete, then tap “Delete.”
To make a recipe, tap “Create New Recipe…” to open a new page. On this page, you can name the recipe, connect switches, and add a timeout between recipe activation and deactivation.

Name: Tap the bar marked “Name” to edit the name of the recipe. Type a new name or tap “Return” on the keyboard to rename the recipe. The iPad will move the typing cursor to the next editable line, found under Timeout. You do not have to edit timeout yet. Tap “Done” to close the keyboard.

Switches: To add a switch to a recipe, tap “Assign a Switch….” This will open a new page; switches connected to the iPad will be found on this page. Tap a switch name to open choose which action the switch will take when the recipe is active.

Up to two switches can be assigned to a single recipe.

Timeout: When Timeout is activated, the iPad will turn the recipe off after the specified time if no switch has been activated in the time frame. Following a timeout, switches will be reset to perform the function you originally programmed them to (See Add New Switch).

Timeout should be set according the speed at which your client can read an average page on the iPad. If your client is using a recipe such as “Turn Pages,” for reading an eBook, the timeout should be set longer to accommodate reading a full page of text.
Tap the toggle to activate this feature. The default timeout is 60 seconds. The longest timeout is 150 seconds; the shortest is 10 seconds.

To extend or shorten the length of the timeout, tap the plus or minus buttons under the Timeout toggle.

To delete switches from a recipe, tap “Edit” in the top right corner of the page. Tap the red circle next to the switch you want to delete. Finally, tap the red “Delete” button that appears.

Launch Recipe enables SWITCH CONTROL to activate a recipe as soon as SWITCH CONTROL is turned on. This means that a connected switch will automatically perform recipe gestures instead of its original gestures (i.e. pressing the switch will “Turn Pages” rather than “Select Item.”)

If a switch is not activated within the specified Timeout time then the switch will reset to perform its original gestures, so if your client needs to change apps to use the recipe, it is best to have a greater Timeout length.

To set or change the recipe that will activate when SWITCH CONTROL is turned on, tap “Launch Recipe” and select the desired recipe from the recipes list.

**Scanning Style**

Scanning Style changes how the SWITCH CONTROL cursor operates. There are three different ways the cursor can be used to select items on the iPad: Auto Scanning, Manual Scanning, and Single Switch Step Scanning.
Each of the three cursor scanning methods comes with a new menu of features listed in **Settings > General > Accessibility > Switch Control** under **Timing**. The cursor scanning features are detailed below. Some features are repeated across sections.

**Auto Scanning**

The **Switch Control** cursor moves to the item automatically after a specified amount of time. To change the Auto Scan time, see “Auto Scanning Time” on the **Switch Control** page.

**Auto Scanning Time**

Tap “Auto Scanning Time” to open a new page. The time between the **Switch Control** cursor highlighting an item and the cursor moving to the next item defaults to 1.00 second.

To decrease or increase the auto scanning time, tap the minus or plus sign on the right side of the page. The shortest scanning time is 0.05 seconds; the longest time available is 25.00 seconds.

**Pause on First Item**

To enable Pause on First Item, tap the toggle on the top right side of the screen. When Pause on First Item is enabled, a button will appear with the option to change the length of time the **Switch Control** cursor will hold on the first item in a list.

The default time is 0.50 seconds. The shortest time available is 0.03 seconds; the longest is 8.00 seconds.
Loops

The SWITCH CONTROL cursor automatically cycles through all items available on the screen, including buttons and lines of text. The Loops page allows you to choose how many times the cursor will cycle before it times out. After the cursor times out, activate the switch to start the cursor cycle again.

The default number of loops the cursor will make is 4. The fewest loops is 1; the greatest is 10. Tap the line with the number of loops you want the cursor to make. A checkmark will appear on the right side of the page to indicate how many loops the cursor is set to make.

Move Repeat

The SWITCH CONTROL cursor pauses for double the duration before moving to the next item if a switch remains pressed. Hold down the switch set to “Move to Next/Previous Item” to reset the cursor delay. You can reset the cursor delay as many times as necessary. Tap the toggle on the right side of the screen to enable this feature.

Enabling Move Repeat gives the option to adjust the Repeat length. The default amount of time is 0.50 seconds. The shortest length of time is 0.03 second; the longest is 25.00 seconds.
**Long Press**

This feature turns holding a switch down into a switch itself. Long Press adds another function to a switch which is activated if you hold the switch down for a specific amount of time. To change the length of time, enable Long Press. To enable Long Press, tap the toggle on the right side of the page.

The default amount of time for Long Press activation is 1.00 second. The shortest length of time is 0.20 seconds; the longest is 8.00 seconds.

**Manual Scanning**

This feature requires two different switches to use: one switch to move the cursor to the next item, and the next switch to activate the items.

**Auto Hide**

This feature controls how long the SWITCH CONTROL cursor remains visible on the screen without switch activation. After a specified amount of time, the cursor will become idle and will no longer appear on the screen. To wake up the cursor, activate your switch.

Tap the toggle on the right side of the screen to enable Auto Hide.

When Auto Hide is active, you have the option to change the length of time a switch can remain idle before the cursor is deactivated. The default time is 15.00 seconds. The shortest length of time is 1.00 second; the longest is 60.00 seconds.
**Move Repeat**

The **SWITCH CONTROL** cursor pauses for double the duration before moving to the next item if a switch remains pressed. Hold down the switch set to “Move to Next/Previous Item” to reset the cursor delay. You can reset the cursor delay as many times as necessary. Tap the toggle on the right side of the screen to enable this feature.

Enabling Move Repeat gives the option to adjust the Repeat length. The default amount of time is 0.50 seconds. The shortest length of time is 0.03 second; the longest is 25.00 seconds.

**Long Press**

This feature turns holding a switch down into a switch itself. Long Press adds another function to a switch which is activated if you hold the switch down for a specific amount of time. To change the length of time, enable Long Press. To enable Long Press, tap the toggle on the right side of the page.

The default amount of time for Long Press activation is 1.00 second. The shortest length of time is 0.20 seconds; the longest is 8.00 seconds.

**Single Switch Step Scanning**

This feature requires a switch to move the cursor to the next item. If the cursor is left on an item for a specific amount of time without the switch being pressed, the item will be selected.
Dwell Time

This feature determines how long the SWITCH CONTROL cursor must remain on an item before the item is automatically selected. The default time is 1.00 second. The shortest length of time is 0.20 seconds; the longest is 10.00 seconds.

Auto Hide

This feature controls how long the SWITCH CONTROL cursor remains visible on the screen without switch activation. After a specified amount of time, the cursor will become idle and will no longer appear on the screen. To wake up the cursor, activate your switch.

Tap the toggle on the right side of the screen to enable Auto Hide.

When Auto Hide is active, you have the option to change the length of time a switch can remain idle before the cursor is deactivated. The default time is 15.00 seconds. The shortest length of time is 1.00 second; the longest is 60.00 seconds.

Move Repeat

The SWITCH CONTROL cursor pauses for double the duration before moving to the next item if a switch remains pressed. Hold down the switch set to "Move to Next/Previous Item" to reset the cursor delay. You can reset the cursor delay as many times as necessary. Tap the toggle on the right side of the screen to enable this feature.

Enabling Move Repeat gives the option to adjust the Repeat length. The default amount of time is 0.50 seconds. The shortest length of time is 0.03 second; the longest is 25.00 seconds.

Long Press

This feature turns holding a switch down into a switch itself. Long Press adds another function to a switch which is activated if you hold the switch down for a specific amount of time. To change the length of time, enable Long Press. To enable Long Press, tap the toggle on the right side of the page.
The default amount of time for Long Press activation is 1.00 second. The shortest length of time is 0.20 seconds; the longest is 8.00 seconds.

**Tap Behaviour**

Tap Behaviour controls what action is taken by the iPad when an item is selected through the SWITCH CONTROL cursor.

*Default*

By default, the iPad will display the Scanner Menu when a switch is activated to select an item. The Scanner Menu is discussed later, in **Scanner Menu**.

*Auto Tap*

When the switch is activated, the item highlighted by the SWITCH CONTROL cursor will be selected. The Scanner Menu can be activated by pressing your switch twice within a given time.

The length of time between a first press and second required to activate the Scanner Menu is shown below the Tap Behavior list. The default time is 0.75 seconds. The shortest length of time is 0.20 seconds; and the longest is 20.00 seconds.

To change the length of time allowed between first and second switch activation, tap (or select) the minus or plus buttons to shorten or increase the time interval.
**Always Tap**

When the switch is activated, the item highlighted by the SWITCH CONTROL cursor will be selected. An icon will appear near the bottom of the iPad screen which will be highlighted as the SWITCH CONTROL cursor cycles. Selecting this icon will open the Scanner Menu.

Always Tap only applies to Item Mode. In Point Mode, tap behaviour will return to Default and reset to your client’s preference.

**Focused Item After Tap**

This feature controls which item is highlighted by the SWITCH CONTROL cursor when a switch is activated.

Focus can be set to “First Item” or “Current Item” by tapping on the corresponding label.

**Always Tap Keyboard Keys**

Some keyboard keys (i.e., the vowels, the letters y, s, l, z, c, n, and some punctuation) can be used to input alternate characters. Letters with accents can be accessed by holding down the letter key on software keyboards. On hardware keyboards, the standard letter is always selected.

By default, when SWITCH CONTROL is enabled, selecting one of the keys with alternate characters will open a pop-up window called the Scanner Menu. The Scanner Menu
will show two large buttons, “Tap” and “Alt Keys,” as well as a smaller button on the bottom to access more pages of the Menu.

If you want to input a letter with an accent or a different type of punctuation, select “Alt Keys.” All available alternate characters will be shown. Select the character you want to input.

When “Always Tap Keyboard Keys” is enabled, SWITCH CONTROL will always select the standard key without opening the Scanner Menu.

**Switch Stabilization**

These features allow you to control how switch input is recognized by the iPad.

*Hold Duration:*

Controls how long the switch must be pressed before the iPad recognizes the activation. This feature is useful for individuals who display tremors or have motor impairment affecting hands and fingers. Accidental activations of a switch are not recognized unless they are held longer than a specified duration.

However, if the Hold Duration is longer than the auto scanning time, the SWITCH CONTROL cursor may move to a new item before Hold Duration is up.

By default, the Hold Duration is 0.10 seconds – this is also the shortest length of time that can be set. The longest duration is 4.00 seconds if Auto Tap* is greater than 4.00 seconds.** Hold Duration must be less than Auto Tap so the iPad can recognize a double click before Auto Tap times out and the item is selected.

*Auto Tap automatically selects the item highlighted by the SWITCH CONTROL cursor unless the switch is pressed twice to activate the Scanner Menu.
**Auto Tap does not need to be active for Hold Duration to be affected. The maximum Hold Duration will always stop 0.05 seconds before the set Auto Tap duration.
**Ignore Repeat:**

Can be used as an alternative to Hold Duration for individuals who display tremors in arms or hands resulting in multiple presses of a switch in a short time frame. This feature treats multiple presses as one if more than one press is registered within a specified duration.

To enable Ignore Repeat, tap the toggle on the top right of the screen.

The default duration is 0.10 seconds - this is also the shortest length. The longest duration is 4.00 seconds if Auto Tap is greater than 4.00 seconds.

Ignore Repeat duration must be less than Auto Tap so that the iPad can recognize a double press before Auto Tap times out and the item is selected.

**Point Scanning**

*Gliding Cursor Speed* controls how fast the gliding cursor moves across the screen when Point Scanning is active. The speed settings range from 1 (slowest) to 120 (fastest).

It is recommended you connect a switch via Bluetooth, turn *Switch Control* on, and then enable Point Scanning mode. With Point Scanning mode enabled, activate the switch to start the gliding cursor, then adjust the Gliding Cursor Speed settings until you find the optimal speed in which your client can use the cursor.
Audio

Sound Effects

Tap the toggle labeled “Sound Effects” to enable or disable sound effects.

With Sound Effects enabled, a short sound is played when the SWITCH CONTROL cursor highlights an item in Item Mode or a selection is made with the gliding cursor in Point Scanning mode. The sound is also played when items are highlighted in the Scanner Menu. A different sound is played when an item is selected/tapped using a switch.

Speech

Speech opens a new page.

Tap the Speech toggle in the top right of the page to enable the feature.

When Speech is enabled, the iPad will speak the scanning mode type (e.g. “Point Mode is active”), and will name the items displayed in the Scanner Menu.

Voices controls the speaking voice when this feature is active. The SWITCH CONTROL voice will automatically be set to the same voice used in VOICEOVER, SPEECH, and all other features which rely on a spoken voice.

Tap Voice to open a menu of different voices separated by accents. Each voice has a name.

Voices with a cloud and down arrow must be downloaded to the iPad before they can be used. The storage space of these voices is shown below the voice (i.e. Kate, 150 MB).
Voice previews can be played by pressing the icon on the right side of the voice option (right facing triangle in a circle).

Available voice options are buttons; clicking these will take you to a new page.

Tap to select the default or Enhanced version of that voice*. Enhanced voices usually take up more storage space on the iPad than default voices but sound less robotic than the default voices.

Alex is the closest voice to sounding human and is also the largest file.

*Fred does not have an Enhanced version.

**Speaking Rate**

Speaking Rate is a sliding scale which controls how fast or slow the iPad speaks. The slowest speech rate is on the left, marked by a tortoise, and the fastest is on the right, marked by a hare.

To change the speech rate, tap and hold the white circle on the scale and drag it toward either end until you reach a rate of speech your client is comfortable with.

**Scanner Menu**

The Scanner Menu is a menu of alternative actions that can be taken when a switch is activated, including single- or multi-touch gestures, gesture sequences, scrolling up or down, and returning to the Home page.

The Scanner Menu shows different options depending on what app is open, what button has been pressed, and what items have been added or removed from the Menu.

Default Tap Behaviour shows the Scanner Menu when a switch is activated.
Auto Tap shows the Scanner Menu when a switch is activated twice within a specified time.

Always Tap adds an icon at the end of the scan cycle which opens the Scanner Menu when selected by a switch.

**Menu Items (Scanner Menu)**

The Scanner Menu can be customized to include actions your client frequently uses or remove frequently confused or complicated actions.

**Top Level**

Refers to the main level of the Scanner Menu.

By default, all items that can be assigned to the Top Level of the Menu are selected.

Tap an item to remove it from the Top Level of the Menu or tap “Hide All Items” at the top of the page to remove all items from the Top Level.

Once an item is removed from the Menu, “Hide All Items” becomes “Show All Items.” Tap an item to add it to the Menu or tap “Show All Items” to add all items to the Top Level.

The three parallel lines next to the item names indicate they can be moved. Tap and hold the three lines until the item is outlined in black. Then drag the item anywhere in the list to change where it appears on the Top Level of the Menu.
Show Streamlined First Page

This feature condenses the first page of the Scanner Menu to only the most important features, like “Tap.” Other items will be included on the second page of the Menu.

To switch between pages of the Menu, use the SWITCH CONTROL cursor to highlight the white dots at the bottom of the pop-up window. Select the dots to move to the next page or cycle back to the first page.

Gestures

Refers to the Gestures item found in the Scanner Menu. Selecting Gestures in the Menu opens a new page of the Menu containing available gestures.

By default, all items that can be assigned to the Gestures level of the Menu are selected.

Tap an item to remove it from the Gestures level of the Menu or tap “Hide All Items” at the top of the page to remove all items from the Gestures level.

Once an item is removed from the Menu, “Hide All Items” becomes “Show All Items.” Tap an item to add it to the Menu or tap “Show All Items” to add all items to the Gestures level.

The three parallel lines next to the item names indicate they can be moved. Tap and hold the three lines until the item is outlined in black, then drag the item anywhere in the list to change where it appears on the Gestures level of the Menu.
Device

Refers to the Device item found in the Scanner Menu. Selecting Device in the Menu opens a new page of the Menu containing hardware and some software device settings.

By default, all items that can be assigned to the Device level of the Menu are selected.

Tap an item to remove it from the Device level of the Menu or tap “Hide All Items” at the top of the page to remove all items from the Device level.

Once an item is removed from the Menu, “Hide All Items” becomes “Show All Items.” Tap an item to add it to the Menu or tap “Show All Items” to add all items to the Device level.

The three parallel lines next to the item names indicate they can be moved. Tap and hold the three lines until the item is outlined in black. Then drag the item anywhere in the list to change where it appears on the Device level of the Menu.

Settings

Refers to the Settings item found in the Scanner Menu. Selecting Settings in the Menu opens a new page of the Menu containing Settings elements, including scanning speed and items grouping for selection.

By default, all items that can be assigned to the Settings level of the Menu are selected.

Tap an item to remove it from the Settings level of the Menu or tap “Hide All Items” at the top of the page to remove all items from the Settings level.

Once an item is removed from the Menu, “Hide All Items” becomes “Show All Items.” Tap an item to add it to the Menu or tap “Show All Items” to add all items to the Settings level.
The three parallel lines next to the item names indicate they can be moved. Tap and hold the three lines until the item is outlined in black. Then drag the item anywhere in the list to change where it appears on the Settings level of the Menu.

**Group Items**

This feature allows you to change the way the SWITCH CONTROL cursor scans in Item Mode. By default, individual items are sequentially highlighted. When Group Items is enabled, the cursor will highlight rows of items, entire small lists, and parts of long lists at a time.

Tap the toggle to enable Group Items.

When the SWITCH CONTROL cursor cycles over a long list or a group of items, activate the switch. The cursor will begin to cycle through groups in the list or individual items in the group. Activate the switch again to select an item.
**Large Cursor**

Large Cursor doubles the thickness of the Switch Control cursor to make it more visible to individuals with vision impairment.

Select the toggle to enable Large Cursor.

**Cursor Color**

Changing the colour of the Switch Control cursor may be a preference or a necessity for some clients.

By default, the Switch Control cursor is green. To change the colour of the cursor, select Cursor Color on the Switch Control page. This opens a new page with a list of colour choices that can be assigned to the Switch Control cursor.

Tap a colour from the list to change the colour of the cursor.

**Saved Gestures**

If a gesture your client needs is not available in the Scanner Menu, it is possible to create a custom gesture. New gestures can be composed of a single touch or a sequence of gestures.

You can have no more than five (5) registered touches (taps, holds, or swipes) in any gesture recording. These can be counted in any sequence: one touch by five fingers, five touches by one finger, etc.
Tap “Create New Gesture…” open the gesture recording page.

On the recording page, all buttons except the word “Cancel” in the top left corner of the screen are greyed-out and cannot be pressed. These buttons will become accessible once you start recording.

*To record a new gesture*, tap or swipe the large grey section of the screen. The iPad will begin recording the gesture as soon as your finger contacts the grey section. The “Stop” button in the bottom right corner will turn blue and can be pressed to end the recording session.

The small meter under the grey section and above the words “Play” and “Stop” will fill with blue the longer your finger remains in contact with the screen. The meter fills by time, not the motion of your finger. When the meter fills, the iPad will stop recording that gesture. As soon as contact is removed, the meter restarts and you can continue adding to your custom gesture.

*To review the custom gesture*, tap “Stop” in the bottom right corner. The button “Play” in the bottom left corner will turn blue and can be pressed. Tap “Play” to view a playback of your recorded gesture.

If you are not satisfied with the gesture or made a mistake during recording, tap “Record” in the bottom right corner where “Stop” used to be. This will reset the entire recording process.

When you are satisfied with the gesture, tap “Save” in the top right corner of the screen. A pop-up window will appear titled “New Gesture” with a space to input a gesture name. Tap “Save” to save the gesture to the Scanner Menu.
To delete the custom gesture, tap “Edit” in the top right corner of the screen. The “Create New Gesture...” button will be greyed out and cannot be selected. Tap the red circle with a horizontal white line through it next to the custom gesture you want to delete. Then tap the red “Delete” button. Tap “Done” in the top right corner when you have deleted all desired items.

To use a custom gesture, open the Scanner Menu. Activate your switch on the two circles at the bottom of the Menu window to navigate to the second page of the Menu. Select “Gestures” on the second page, then “Saved.” Select the custom gesture you want to use. Activate the switch again to apply the gesture.

If you have no custom gestures, the “Saved” page of the Scanner Menu will provide the options “New Gesture” or “Add Recent.”

Select “New Gesture” to open the Create New Gesture page.

Select “Add Recent” to use a gesture you recently deleted.

*Move Between Home Pages*

To switch between Home pages on the iPad, use the SWITCH CONTROL cursor to highlight the white dots at the bottom of the page above the iPad dock. Select the dots to move to the next page or cycle back to the first page.
ASSISTIVE TOUCH

ASSISTIVE TOUCH allows users with motor impairment to use the iPad by adapting multi-touch gestures, hardware buttons, and other features to a single-touch option menu.

To enable ASSISTIVE TOUCH, open SETTINGS > GENERAL > ACCESSIBILITY > ASSISTIVE TOUCH. Tap the toggle on the top right side of the screen.

ASSISTIVE TOUCH cannot be enabled if SWITCH CONTROL is on.

Shortcut:
Enabling ASSISTIVE TOUCH turns on a shortcut to accessing the ASSISTIVE TOUCH menu. The shortcut is a black square with concentric white circles in the center.

The shortcut icon can be moved anywhere on the perimeter of the iPad screen. It can be moved at any time if it is in the way. Tap and drag the shortcut button to move it.

To access the ASSISTIVE TOUCH menu, tap the shortcut icon.

To activate a gesture or button on the ASSISTIVE TOUCH menu, tap the icon that corresponds to the function you are trying to achieve.

Multi-touch gestures can be used with one finger but require that finger to make the motion the gesture would normally involve.
Customize Top Level Menu…

The Top Level Menu refers to the first page of the ASSISTIVE TOUCH menu. The ASSISTIVE TOUCH menu can be opened by tapping the shortcut button.

Tap “Customize Top Level Menu…” to open the customize page.

A preview of the ASSISTIVE TOUCH menu will be displayed at the top of the page.

By default, the ASSISTIVE TOUCH menu six (6) icons. The least amount of icons the menu can have is one (1); the greatest is eight (8).

To add icons to the menu, tap the plus sign on the middle right of the page. An empty icon slot will appear in the preview. Tap the empty slot to open a list of features that can be assigned to the icon. An icon with a button assigned to it can be changed in the same way: by tapping the icon in the preview.

To remove icons, tap the minus (-) button in the middle right of the page.

To undo changes, tap “Reset…” at the bottom of the page. The ASSISTIVE TOUCH menu will return to default.

Create New Gesture…

If a gesture your client needs is not available on the ASSISTIVE TOUCH menu, it is possible to create a custom gesture. New gestures can be composed of a single touch or a sequence of gestures.

Tap “Create New Gesture…” open the gesture recording page.

For more information on recording a custom gesture, see SWITCH CONTROL, Saved Gestures.
TOUCH ACCOMMODATIONS

TOUCH ACCOMMODATIONS allow you to adjust how the iPad screen responds when a touch is registered.

To use TOUCH ACCOMMODATIONS, tap to open SETTINGS > GENERAL > ACCESSIBILITY > TOUCH ACCOMMODATIONS.

On the TOUCH ACCOMMODATIONS page, tap the toggle in the top right corner to enable TOUCH ACCOMMODATIONS. When enabled, TOUCH ACCOMMODATIONS are available on the ACCESSIBILITY SHORTCUT (see Section 2.4 ACCESSIBILITY SHORTCUT for more).

Hold Duration is a useful feature for individuals with motor impairment resulting in shaky hands and accidental touches to the iPad screen. Hold Duration sets the screen to only respond to touches held for a certain length.

To enable Hold Duration, tap the toggle in the right upper middle of the page.

The default duration is 1.00 second. The shortest length is 0.10 seconds; and the longest is 4.00 seconds.
When Hold Duration is enabled, touching the screen will result in a faded grey circle under the point of contact for one or multiple fingers.

A meter around the edge of the circle will fill with white to indicate the duration the contact must be held until a touch is registered. When the meter is filled, the circle will disappear and the touch will register.

Gestures must be completed the same way: tap and hold the screen with one or more fingers, wait for the meter to fill, and then complete the gesture as normal.

**Ignore Repeat** can be used as an alternative to Hold Duration for individuals who display tremors in arms or hands resulting in multiple touches to the screen in a short time frame. If the individual using the iPad cannot physically hold his or her finger steadily on the screen, try Ignore Repeat. This feature treats multiple touches as one if more than one touch is registered within a specified duration.

To enable Ignore Repeat, tap the toggle on the right lower middle screen.

The default duration is 0.25 seconds. The shortest length is 0.10 seconds; and the longest is 4.00 seconds.

**Tap Assistance** can be used by individuals who have difficulty making precise touches to the iPad screen, such as individuals who tap the screen only to have their fingers slide off the point of contact so the tap is registered elsewhere. Tap Assistance removes some possibility of making unwanted touches by allowing you to set the iPad to register initial or final touch location when tapping.
Use Initial Touch Location: When this feature is selected, the iPad will register a tap at the point of contact if the finger is removed from the screen before timeout. Once contact is made with the screen, the finger can be moved anywhere on the screen and still result in a tap at the contact point.

Touching the screen with one finger will result in a faded grey circle under the point of contact.

A meter around the edge of the circle will fill with white to indicate the duration the contact can be held before a touch is no longer registered. Remove your finger before the meter fills to tap. When the meter is filled, the circle will disappear and the touch expires.

By default, duration timeout is 0.10 seconds – this is also the shortest length of time available. The longest duration is 4.00 seconds.

Use Final Touch Location: When this feature is selected, the iPad will register a tap at the point your finger is lifted from the screen if the finger is removed before timeout. Once contact is made with the screen, the finger can be moved anywhere on the screen and still result in a tap at the point contact is ended.

Touching the screen with one finger will result in a faded grey circle under the point of contact.

A meter around the edge of the circle will fill with white to indicate the duration the contact can be held before a touch is no longer registered. Remove your finger before the meter fills to tap. When the meter is filled, the circle will disappear and the touch expires.

Default timeout duration is 0.10 seconds – this is also the shortest length of time available. The longest duration is 4.00 seconds.
KEYBOARD
The Keyboard page refers to both software (built-in) and hardware (external) keyboards. Settings on both types of keyboards can be adapted to better suit the capabilities of the individual using the iPad.

To change the settings for software and hardware keyboards, open SETTINGS > GENERAL > ACCESSIBILITY > KEYBOARD.

Software keyboards are pop-ups that activate when you select a type box like the search bar in Safari or the text screen in Notes.

Pop-up keyboards work the same as hardware keyboards in that the keys are aligned similarly and perform the same functions. However, the letters and the numbers of a software keyboard are arranged in two pages.

To switch between letters and numbers, tap “.?123,” on the bottom left corner of the keyboard or on the right side of the space bar. To open the emoji keyboard, tap the smiley face on the left of the space bar.

Tap the keyboard icon in the bottom right corner of the keyboard to hide a software keyboard.
External keyboards are hardware keyboards connected to the iPad via Bluetooth. For more information on connecting Bluetooth devices to the iPad, see Chapter 2, Section 2, SWITCH CONTROL.

**Software Keyboards**

The toggle at the top of the page controls whether software keyboards show lowercase or uppercase letters.

When “Show Lowercase Keys” is enabled, the pop-up keyboards will display lowercase letters unless the modifier key Shift is tapped or double-tapped*.

*Double-tapping Shift enables Caps Lock, so that all typing is uppercase until Caps Lock is disabled.

If “Show Lowercase Keys” is disabled, the keyboard will always display uppercase letters. Typing is not affected (i.e. typing will be lowercase unless Shift is activated). This may be confusing to some clients, as there is no visible difference on the keyboard between lowercase and uppercase letters with Shift enabled.

**Hardware Keyboards**

Key Repeat is a default feature. It allows a single key press on an external keyboard to type multiple letters if the key is held down. Some external keyboards may not allow Key Repeat. Software keyboards do not allow Key Repeat.

To change Key Repeat settings, tap Key Repeat top open a new page.
To disable Key Repeat, tap the toggle at the top right side of the screen.

**Key Repeat Interval:** determines how long it takes for each additional letter to be typed when a key is held down. The default time is 0.10 seconds. The shortest length of time is 0.03 seconds; the longest is 2.00 seconds.

**Delay Until Repeat:** determines how long a key must be pressed before Key Repeat is activated. The default time is 0.40 seconds. The shortest length of time is 0.20 seconds; the longest time is 2.00 seconds.

Key Repeat is not recommended for clients with poor fine motor control. Keyboards can be very sensitive, and allowing Key Repeat may result in unwanted letters.

**Sticky Keys** activates modifier keys* without requiring the key be held down. Modifier keys change the function of other keys when pressed. An example is the Shift key, which enables uppercase letters.

To change Stick Key settings, tap Sticky Keys to open a new page.

**Sticky Keys:** To enable Sticky Keys, tap the toggle in the top right corner of the screen. Modifier keys will always be active when this feature is enabled.

**Toggle With Shift Key:** Allows you to manually enable Sticky Keys when typing by pressing the Shift Key five (5) times. To enable this feature, tap the toggle in the middle on the right side of the page.

**Sound:** With this feature, the iPad will play a sound when a modifier key or Sticky Keys is activated. For example, a muted “tap” sound will be produced when Shift is tapped and a high-pitched “tip” will sound when Caps Lock is activated by double-tapping Shift.
**Slow Keys**

Slow Keys allows you to change how long it takes between a key press and key activation. Slow Keys applies to all keys on an external keyboard.

The default time is 0.30 seconds. The shortest length of time is 0.10 seconds; the longest is 1.00 seconds.

---

**SHAKE TO UNDO**

SHAKE TO UNDO is a default setting. It allows the user to undo or redo recent typing in any type field. Some game apps may support Shake to Undo as well.

To activate SHAKE TO UNDO, hold the iPad firmly with one hand on each side of the device. Forcefully move the iPad up and down until the “Undo Typing” pop-up window appears. Medium slow or fast movements, and large or small shakes will register.

It may take a several tries at first to produce the pop-up window. It may be easier to produce the pop-up window with the iPad in “portrait” orientation, as hands can be held closer together for greater control.

The “Undo Typing” pop-up window will always give the options “Undo” and “Cancel.” If you have erased typing and re-typed a character or sentence, the pop-up window will add the option to “Redo Typing.”
The size of the iPad brings a risk of the device being thrown when attempting to shake it. **SHAKE TO UNDO** may not be suitable for clients with tremors, poor motor coordination, or weak muscles in their arms or hands. While it is possible to activate **SHAKE TO UNDO** with one hand, the risk of dropping or throwing the iPad increases greatly.

To disable **SHAKE TO UNDO**, tap the toggle on the top right side of the screen.

**CALL AUDIO ROUTING**

**CALL AUDIO ROUTING** determines where the iPad will channel audio during a phone call or FaceTime call. The three choices are Automatic, Bluetooth Headset, or Speaker. This is a preference setting.

To connect a device via Bluetooth, see Subsection 2.2.A: **SWITCH CONTROL**.

**HOME BUTTON**

The **HOME** button is a hardware button used to turn the iPad screen on, activate the passcode to unlock the iPad, navigate from an app to the Home screen, and access the Accessibility Shortcut.
Click the HOME button once to turn the iPad screen on, access the passcode to unlock the iPad, or exit an app.

Click once and hold down the HOME button to access Siri.

Click the HOME button twice to bring up the app switcher and move between active apps.

Click the HOME button three times access the Accessibility Shortcut menu.

**Click Speed** allows you to adjust how much time can pass between clicks of the HOME button for the iPad to register double- and triple-click actions. The default speed is fast and may not be suitable for clients with fine motor impairment.

For a preview of the speed required for multi-click actions, selecting “Default,” “Slow,” or “Slowest.” The setting will change, as well as cause the selected item to ‘blink’ at the speed the iPad can now register HOME button double- or triple-clicks.

**Press and Hold to Speak** has two options.

*Siri* allows you to access Siri if the HOME button is clicked and held down for 1.00 second. Siri must be enabled on the iPad before this feature can be used. If Siri is not enabled, but “Press and Hold to Speak” is activated, Siri will open and ask you to “Turn On Siri” or “Don’t Use Siri.”

*Off* turns off all actions assigned to holding down the HOME button. If the HOME button is clicked and held, nothing will happen. If Siri is not enabled on the iPad, and your client has no desire to use Siri, this option is preferable so he/she does not accidently activate Siri.
SECTION 2.3: AUDIO AND MEDIA

The HEARING section of the Accessibility Menu focuses on providing features for individuals with hearing loss or any degree of hearing impairment. This section offers features such as connecting hearing aids to the iPad and enabling subtitles on videos and in some apps.

HEARING DEVICES

Hearing Devices allows you to connect hearing aids to the iPad to make it easier for clients to listen to music, phone calls, and other audio, such as alarms and notifications. Made for iPhone hearing aids can be paired with the iPad on the Hearing Devices page. Other iPad accessible hearing aids must be paired via Bluetooth.

If the iPad is unable to connect because settings needs to be adjusted on the hearing aids, consult with the client’s audiologist before making any changes.

Tap “Hearing Devices” to open a new page. The iPad will start a pairing process like the Bluetooth connection described in Chapter 2, Section 2: Switch Control.

Made for iPad Hearing Aids

Open SETTINGS > GENERAL > ACCESSIBILITY > HEARING DEVICES.

To pair a hearing aid to the iPad, ensure Bluetooth is on.

Open and then close the hearing aid battery doors to prompt the iPad to search for the hearing aids. When you see the hearing aid name appear under “Devices,” tap the
name. The hearing aids will have the client’s name as well as a corresponding letter indicator for the left (“L”) or right (“R”) hearing aid, or “L+R” for both.

A pop-up window will appear asking you to “Pair” or “Cancel.” Click “Pair.” If your client has two hearing aids, you will be asked twice to pair. Pairing may take a few minutes.

When the hearing aid(s) is paired, a new page will open on the iPad. This page will indicate the name and battery life of each connected hearing aid.

Stream to…: From this page, you can choose to route audio channels from the iPad to each hearing aid by tapping the toggle next to “Stream to right hearing aid,” “Stream to left hearing aid,” or “Adjust independently.”

If two hearing aids are paired to the iPad, all three toggles will be on by default.

Hearing and Volume: You can adjust the volume of audio channels being streamed to each hearing aid by tapping and dragging the white circle on the sliding scale next to “R” or “L.”

Presets: Each hearing aid you connect to the iPad can be adjusted to an individual preset which automatically adjusts the volume levels of each hearing aid to suit the preset’s environment. The presets include “Basic,” “Restaurant,” “Outdoor,” and “Party.”

To select a preset, tap the preset name under Right Presets for right hearing aid or Left Presets for left hearing aid.

Live Listen: only works with Made for iPhone hearing aids. Live Listen streams the audio picked up by the iPad’s microphone through the client’s hearing aids, essentially turning the iPad into a microphone for noisy or crowded areas.

Enable Live Listen by tapping “Start Live Listen” in the client’s hearing aids page of the Settings > Accessibility > Hearing Aids menu.

To disable Live Listen, tap “End Live Listen.”
Forget This Device: The iPad will store basic information from your hearing aids to ‘remember’ the devices. When the hearing aids are turned off, they disconnect from the iPad; and when they are turned on again, they can be reconnected by opening and closing the hearing aid battery doors.

When you tap “Forget This Device,” the iPad deletes all the stored information from the hearing aids. You will need to reconnect the aid(s) by opening Settings > Accessibility > Hearing Aids and following the steps to pair hearing aids.

Other Hearing Aids

Not all hearing aids can connect to the iPad. For a complete list of compatible hearing aids, visit https://support.apple.com/en-ca/HT201466. Hearing aids not on the list are not able to connect to Apple iOS devices, including the iPad.

Some special accessories exist which act as conduits between the iPad and hearing aids. Rather than connect the hearing aid to the iPad, the aids connect to the ‘bridging’ accessory which then connects to the iPad via Bluetooth.

For more information on audio bridging accessories, consult with the client’s audiologist.

MONO AUDIO AND AUDIO BALANCE

MONO AUDIO merges the sound channels used by the speakers when you are listening to something on the iPad. By default, the iPad will use stereo sound, meaning left channel audio plays through left side speakers and right channel audio plays through right side speakers. MONO AUDIO is important for individuals with hearing impairment in one ear since it plays left and right audio channels through both speakers.

To enable MONO AUDIO, open Settings > General > Accessibility and tap the toggle under Hearing Devices.

The sliding scale under MONO AUDIO allows you to balance the volume between the left and right audio channels. Use headphones if appropriate to find the best audio balance for your client.

To adjust the balance between left and right audio channels, tap and drag the white circle on the sliding scale to the left (L) or right (R).
**SUBTITLES AND CAPTIONING**

The iPad has several functions that may allow users with hearing impairment to enjoy movies, television, and other videos on the iPad.

Subtitles show the spoken word in a video, usually intended for audiences who do not speak the language the video was released in.

Closed captions show the spoken word as well as identifying the speaker and labeling other audio, including object noises and music.

Subtitles for the Deaf and Hard-of-Hearing (SDH) function like closed captions and are made to work on media that does not support closed captioning.

Videos bought through the iTunes Store do not always come with closed captions or subtitles. Search “subtitles,” “closed captions,” or “SDH” to show movies, television shows, and music results which offer captions. **Caution:** results may contain the search words as part of the title, not as an available feature. Tap the movie, television show, or song/album you want to buy to view more details.

Social video sharing websites may support subtitles and closed captions, but individual videos require the uploader to create subtitles and/or captions.

**Closed Captions and SDH**

Open **Settings > General > Accessibility > Subtitles and Captioning**.

To enable closed captions and SDH, tap the toggle in the top right side of the screen. Captions or subtitles will show automatically when available for iPad videos, such as those purchased in the iTunes Store.
Style

Tap "Style" to open a new page from which you can change the appearance of subtitles and captions.

A preview window is available at the top of the page. Subtitles will adjust as settings are changed.

There are three base choices: “Default,” “Large Text,” and “Classic.”

There is also the option to customize subtitles in a way that matches your client’s needs or preference.

If the iPad is being used with multiple clients, you can create and a style for each client.

Create New Style

Tap “Create New Style…” to open the style customization page.

Description: is the style name. By default, styles will be named according to order of creation, i.e., “Style 1,” “Style 2,” etc.

Tap “Description” to open the software keyboard and change the name.

Text: You can change the font style, size, and colour of the caption/subtitle text. Tap any button to open a new page to adjust styles, sizes, and colours of text.
The pages for “Font,” “Size,” and “Colour” each have a toggle at the bottom labeled “Video Override.” When enabled, the video being played will display caption/subtitle settings set by the video creator, rather than the settings you assigned. If “Video Override” is disabled, the video will use your settings for caption/subtitle styles.

**Font:** You can adjust the font of subtitles and captions to a variety of preloaded fonts.

*Set Font:* tap the font that works best for your client. Styles can be previewed in the window at the top of the page. A checkmark across from the font indicates that font has been selected.

*Add Font:* allows you to choose from a wide variety of font styles to add to the shorter list of fonts on the Font page. Tap a font to add it.

*Delete Font:* Tap “Edit” at the top of the page, then tap the red circle next to the added font’s label. Tap the red “Delete” button. “Edit” is only visible if fonts have been added.

*Advanced:* allows you to assign a font to a specific font type. When a video requires a certain type of font for captions/subtitles, the assigned font will be used. To change the font for any type, tap the font label to open a new page, then tap a desired font. This will automatically create a new style, labelled according to the number of custom styles made, i.e., “Style 1.”
**Size:** Tap “Size” to open a new page. Labels will show different sizes of fonts in a list. Tap the desired font size label to set captions/subtitles to that size. A preview of the adjusted font size will be available in the window at the top of the page.

<table>
<thead>
<tr>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
</tr>
<tr>
<td>Medium (Default)</td>
</tr>
<tr>
<td>Large</td>
</tr>
<tr>
<td>Extra Large</td>
</tr>
</tbody>
</table>

**Color:** Tap “Color” to open a new page with a list of available colours labelled with coloured circled and the corresponding named of the colours. Tap the desired colour to set captions/subtitles text to that colour. Different colours will show differently on each video. Video Override is recommended, as the video’s creator will likely have selected the easiest-to-see settings when creating the captions/subtitles.

<table>
<thead>
<tr>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>White (Default)</td>
</tr>
<tr>
<td>Cyan</td>
</tr>
<tr>
<td>Blue</td>
</tr>
<tr>
<td>Green</td>
</tr>
</tbody>
</table>

**Background:** You can change the style of background offsetting the caption/subtitle text from video by changing the colour and opacity of the background.

<table>
<thead>
<tr>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Opacity</td>
</tr>
<tr>
<td>0%</td>
</tr>
</tbody>
</table>

**Color:** Tap “Color” to open a menu of different colours which can be set as the caption/subtitle background. Black is the default setting.
Tap a colour to set it to the caption/subtitle background. The colour can be previewed in the window at the top of the screen.

<table>
<thead>
<tr>
<th>Subtitles look like this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black (Default)</td>
</tr>
<tr>
<td>White</td>
</tr>
</tbody>
</table>
**Opacity:** Tap “Opacity” to open a new page with a menu of different degrees of opaqueness that can be assigned to the caption/subtitle background.

The default opacity is 50%.

The opacity can be previewed in the window at the top of the screen.

**Advanced:** You can adjust the opacity of the caption/subtitle text, the edge style, and add a highlight to the text.

**Text Opacity:** Tap “Text Opacity” to open a menu of different degrees of opaqueness you can assign to the caption/subtitle text. The default is “Opaque.” The opacity can be previewed in the window at the top of the screen.

**Text Edge Style:** adds a subtle shadow to caption/subtitle text. Tap “Text Edge Style” to open a menu of different styles to choose from. Tap any style to set it to the caption/background. By default, there is no edge style.
Text Highlight: Tap “Text Highlight” to open a new page. From this page, you can assign a colour to a highlight and change the opacity of the highlight. Adding a highlight to the text of a caption/subtitle grants a stable contrast between the caption/subtitle and the video, ensuring you can always see the caption/subtitle text.

By default, the opacity is 0%, so changing the opacity is recommended before choosing a colour.

Tap any opacity to view the highlight in the preview at the top of the screen. The opacity will be assigned to custom captions/subtitles, so tap “0% (Default)” if no highlight is desired by the client.

Next, tap any colour to assign it to the highlight. It may be necessary to change the colour of the caption/subtitle text to find the best contrast for your client.

Audio Descriptions
Open settings > general > accessibility > audio descriptions.

To enable audio descriptions, tap the toggle in the top right side of the page. Audio descriptions will automatically display when available for iPad videos, such as those purchased in the iTunes store.
To change settings for **Audio Descriptions** while watching a video, tap the screen to show playback controls (Play, Pause, Skip, etc.). A button in the bottom right corner is present when audio descriptions/captions/subtitles are available. Tap the button to open the Audio & Subtitles menu.

In the **Audio & Subtitles** menu, you can turn captions/subtitles off, reset automatic settings, or change the language of captions/subtitles when available.

**Section 2.4 Miscellaneous Accessibility**

**Guided Access**

**Guided Access** restricts iOS devices to a single app for a specified length of time. This feature was developed to assist individuals with intellectual impairment work independently on Apple devices without accidently navigating to an area of the device they are unfamiliar with.

**Guided Access** also disables hardware buttons, such as the volume, screen orientation, and lock screen buttons. Screenshots (HOME button + lock screen button simultaneously) will also be disabled while **Guided Access** is on.

Open **Settings > General > Accessibility > Guided Access**.

To enable **Guided Access**, tap the toggle in the top right corner of the screen.
Passcode Settings:

To end a GUIDED ACCESS session, the iPad needs a passcode. If TOUCH ID has been set up, your client can use his or her fingerprint in place of a passcode to end a session.

Tap “Set Guided Access Passcode” to create a four-digit passcode. It is recommended that the same code is set for GUIDED ACCESS as the four-digit numerical passcode to unlock the iPad.

GUIDED ACCESS cannot be turned off without a passcode.

Time Limits: To change the settings of the alert given when the GUIDED ACCESS time limit is approaching or reached, tap “Time Limits.”

When the GUIDED ACCESS time limit approaches 30 seconds from end, the iPad will chime and speak “29 seconds remaining.” The iPad will use the voice set for VOICEOVER and Speech for GUIDED ACCESS.

When GUIDED ACCESS ends, the iPad will speak, “GUIDED ACCESS time has ended.” You will be prompted to triple-click the HOME button and enter the GUIDED ACCESS passcode.

To enable the sound and speech alert, tap the toggle next to “Speak” near the top right side of the screen.

To add or change the sound the alert makes, tap “Sound.” A new page will open with a list of available sounds categorized by Alert Tones and Ringtones. The last item on the list of both categories is labelled “Classic.” Tap “Classic” to open another menu with traditional iOS sound effects.

Tap any name on the list to set it as the alert sound.

To add sounds not on the lists provided, tap “Store” in the top right corner of the Sound page. This will open the iTunes Store on a search for ringtones and alert tones.
Start Session: With GUIDED ACCESS enabled, open an app, and then triple-click the Home button. If the Accessibility Shortcut has not been enabled, or if Guided Access has not been added to the Shortcut, see SECTION 2.4. ACCESSIBILITY SHORTCUT for instructions on how to do so.

Tap “GUIDED ACCESS” on the Accessibility Shortcut pop-up menu. You will then be able to configure your settings for the GUIDED ACCESS session using the buttons at the bottom of the screen.

Tap “Cancel” if you do not want to start a GUIDED ACCESS session.

Tap “Start” once you have configured your settings to begin the session.

End Session: To end a GUIDED ACCESS session, triple-click the HOME button. A pop-up window will require you to type in the passcode. Enter the passcode. The iPad will open the GUIDED ACCESS customization page. Tap “End” at the top left corner of the customization page to end the session.

To continue a session, tap “Start” or “Resume” at the top right corner of the GUIDED ACCESS customization page.

Disable Screen: To disable areas of the screen, drag one finger across the app screen in a line or in any shape. The shape will appear semi-transparent and grey, with diagonal lines running through it. To adjust the dimensions of your shape, tap and drag the white circles on the perimeter of the shape. To delete the shape, tap the circle on the perimeter with an “X” through it.

Tap the toggle in the bottom center of the screen under the label “Touch” to disable the entire screen. This is useful when a switch has been connected to the iPad as it will not allow unwanted touches to register during app use. When Touch is disabled, the app screen will turn grey.

Set Time Limit: To set a time limit for GUIDED ACCESS, tap “Options” on the bottom right side of the screen. A dialogue box will pop up. Tap the toggle on the bottom of the dialogue box to enable two vertical dials.
When the time limit runs out, a dialogue box will cover the iPad screen. It will prompt you to triple-click the HOME button to enter the GUIDED ACCESS passcode. Once the passcode is entered, the screen will return to the GUIDED ACCESS menu.

Time limits will remain in one app. You will need to set a time limit for GUIDED ACCESS in each novel app used while in GUIDED ACCESS.

A black drop down notification will alert you to the time remaining in GUIDED ACCESS. The notification will appear at each 1 minute and 30 seconds left of the set time limit.

**ACCESSIBILITY SHORTCUT**
The Accessibility Shortcut allows users to save time and effort by removing the need to open Settings to enable Accessibility features.

In **Settings > General > Accessibility > Accessibility Shortcut**, you can customize which Accessibility features to add to the Shortcut menu. Tap any feature to add it to the menu. Tap the feature again to remove it from the menu.

Some features are added to the Shortcut automatically when they are enabled, such as MAGNIFIER, GUIDED ACCESS, and TOUCH ACCOMMODATIONS. Some of these features, while enabled, cannot be removed from the Shortcut. When those features are not enabled, they cannot be added to the Shortcut.

Tap an item on the list to add the feature to the Shortcut.
Tap an item with a check mark to disable the feature.

To open the Shortcut, triple-click the HOME button at any time. A pop-up menu labelled “Accessibility Shortcut” will appear. Tap an item on the Shortcut to enable it. Some features, like Guided Access, require an app to be open before they can be enabled.
Chapter 3: Usability
SECTION 3.1 HANDY PRELOADED APPS

The iPad has a variety of apps which come preloaded to the device and many of these are useful in different ways. Tips, for instance, provides quick overviews of various iPad features and functions, such as how to take a screenshot and send a message with Siri. While they can be useful, some of these apps require a WiFi connection (e.g., Tips, Maps) or other Apple devices to work (e.g., HomeKit).

If an app is not useful to your client, you can delete the app or move it out of the way in a folder. If a preloaded app was deleted and you or your client find you have need of it, open the App Store. Search for the app by name or type “Apple Apps” in the search bar at the top right side of the screen to scroll through Apple apps. Previously owned or preloaded apps will display a cloud icon with a downfacing arrow. The cloud indicates the app is known by the iCloud and can be redownloaded for free if your client is signed in with their Apple ID.

For more information on deleting or moving apps and creating folders, see Section 1.2. Apps and Navigation.

Some preloaded apps function like non-electronic assistive technologies. Several of these assistive apps come preloaded on the iPad while other apps can be purchased or freely downloaded from the Apple App Store*. These assistive apps are discussed in more detail in this section.

*The App Store is a preloaded app. It cannot be deleted from the iPad.

CALENDAR

The Calendar allows you to create and manage upcoming events (e.g. CBIS bowling, or a visit with family), set up alerts for those events, and invite others to see the events you have created in any online calendar linked to an email service. Calendars can also be customized to accommodate different religious or geo-political setups and holidays.

As an icon, the Calendar will display the date and the day of the week.

Tap the CALENDAR icon to open the app.
**Calendar View**

To change how you view the Calendar, tap “Day,” “Week,” “Month,” or “Year” at the top of the page. “Day” and “Week” views will show the current time.

All views will show a coloured circle around the day of the month it currently is. While exploring in “Day” and “Week” views, a black circle will indicate the date you are looking at if it is not the current date.

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**Add Events to a Calendar**

To edit an existing event, press and hold on a coloured event square in any view.

To add an event to a calendar in **Day View**, tap the plus (+) button at the top right side of the page. To edit an already existing event, tap and hold your finger on the event block.
To add an event to a calendar in **Week View**, tap and hold on an empty time square until the square fills with a coloured block labelled “New Event.” Remove your finger from the iPad screen to open the New Event pop-up page.

Alternatively, tap the plus (+) button at the top right side of the page. You must specify the event date in the New Event page.

To edit an already existing event, tap and hold your finger on the event block.

To add an event to a calendar in **Month View**, tap and hold on an empty portion of a date square until you see a slim, coloured block labelled “New Event.” Remove your finger from the iPad screen to open the New Event pop-up page.

Alternatively, tap the plus (+) button at the top right side of the page. You must specify the event date in the New Event page.

To edit an already existing event, tap and hold your finger on the event block.

To add an event to a calendar in **Year View**, tap the plus (+) button at the top right side of the page.

A pop-up window will allow you to type out a **title** for the event and a **location**.

Valid locations include locations on a map or business names. If the iPad is connected to WiFi, you will be provided with location suggestions based on what you type.

If location is unknown or if the client will already be at the location at the time of the event, this space can be left blank.
**All-day:** Tap this toggle to automatically set the event start and end dates to the same day as the event.

**Starts/Ends:** Tap “Starts” or “Ends” to open a drop-down dial. Drag your finger up or down on any part of the dial to adjust the date, hour, and minute. Since the dials operate on a 12-hour clock, you can also set the start or end time of the event to AM/PM.

**Time Zone:** If your client is traveling across time zones during or for the event, you can adjust the time zone of the start and end times.
Tap “Time Zone” under the Starts/Ends dials.
Type a location* into the search bar at the top of the window. Tap a location in the search results to add the corresponding time zone.

Tap “Starts” or “Ends” to close the dial when you have adjusted the event date and time.

*Typing “Kingston, Ontario” does not produce search results, but “Toronto, Ontario” does.

**Repeat:** allows you set identical events at different times if the event is one that repeats (e.g., “Craft Group at CBIS on Fridays”).
You can set the event to Never repeat, repeat as often as Every Day, or as little as once Every Year. You can also create a Custom repeat schedule.
Custom: Tap “Custom” at the bottom of the Repeat window to further personalize the repeat schedule of an event.

You can set the Frequency of the event to “Daily,” “Weekly,” “Monthly,” or “Yearly.” All settings except “Daily” allow you to choose the day of the week, day of the month, or a specific date of the year (e.g. “Every month on the 10<sup>th</sup>” or “Yearly on the fourth Wednesday of March and June”) for a repeat event.

You can also set the event to occur Every day (1) or up to every 999 days, every week (1) or up to every 999 weeks, every month (1) or up to every 999 months, or every year up (1) up to every 999 years. Tap “Every” and swipe up or down on the dial to adjust how often the event repeats.

Travel Time: gives the iPad more information about the event so the Calendar app can provide more effective alerts based on distance, traffic, and mode of transportation.

Tap “Travel Time” to open the Travel Time page. Tap the toggle on the page to enable the feature.

If you have added a location for the event already, an option to add “Starting Location” appears on the Travel Time page. Adding a starting location lets the iPad calculate the time it would take you to get to the event location by vehicle or on foot based on traffic, route, and location*.

If you have not added a location for the event or do not otherwise see “Starting Location” on the page*, you can manually select an approximate travel time. The shortest time is 5 minutes; and the longest is 1 hour and 30 minutes.

Once you input travel time, the time will be added to the event block on the calendar.

*Location services must be enabled and the iPad must be connected to WiFi.
**Calendar:** If additional calendars have been created, event can be assigned to specific calendars. Tap “Calendar” at the bottom of the screen to open a new page. Tap a calendar label to assign the event to that calendar. For more information on creating calendars, see **Calendars.**

**Invitees:** Tap “Invitees” in Calendar to open a new window in the pop-up.

Enter the email address of the person* you want to share the list with. Or, if you have added the person to the iPad’s Contacts, type in the contact name and then tap the contact you want to add from the search results.

To share the list with more than one person, type a second email address or tap the plus sign in the circle at the right side of the pop-up window to search Contacts.

Tap “Add” in the top right corner of the pop-up window to begin sharing with all contacts.

*The email service provider must have a calendar app available (e.g., Google Calendar, iCloud, etc.) in order that the other person can access the shared calendar.

**Alert:** allows you to set an audio and visual alarm before, or at the time of, the event as a reminder. If travel time has been added to the event, you can set an alarm to accommodate the travel time as well. Alerts can be set to go off as early as one (1) week before or as late as the event start time.

Tap “Alert” to open the Alert page. A menu of different alert times is offered on this page, as well as an option for “None.” Tap any time to set an alert. Setting an alert will take you back to the New Event page.
When you add an alert, an option to add a second alert is added to the New/Edit Event page. Tap “Second Alert” and repeat the above process to add another alarm or choose “None” if a second alert is not desired.

**URL:** if there is an Internet page associated with the event (e.g., online newsletter), you can include the Internet address/URL to the event. When a URL is added to an event on the Calendar, anyone with access (via the iPad or through iCloud) can tap the URL to open the web page in the default browser (Safari, on iOS).

To add a URL, tap “URL” on the New/Edit Event page. Type the URL manually or open the web page you want to add, tap the URL once to highlight it and tap again to trigger a black pop-up window. Tap “Copy” and return to the Calendar app*, tap once on URL to bring up the keyboard, then tap again to trigger the black pop-up window. Tap “Paste” to paste in the entire URL.

*To return to the Calendar app, tap “Calendar” in the top left corner to the iPad screen, next to the WiFi indicator. Or, click the HOME button once to minimize the web browser, and tap the Calendar icon to open the app. Or, double-click the HOME button and select the Calendar app from the App Switcher.

**Notes:** allows you to add any additional information you need to about the event you are creating/editing.

Tap “Notes” to open the software keyboard and begin typing.

**Add Event:** Tap “Add” or “Cancel” at the top of the New/Edit Event window to add the event to the Calendar or dismiss your changes.

If you select “Add,” the event will become visible as a large coloured block in the Calendar. The size of the event block depends on the duration of the event and the Calendar view.
**Delete Event:** To delete an event, tap on the event block to open the Edit Event window. Tap “Delete Event” at the bottom of the window.

If the event is scheduled to repeat, a pop-up window will appear. Tap “Delete This Event Only” if you want to delete the event you tapped, or “Delete All Future Events” if you want to delete the current event and all scheduled repeats of the event. Or tap “Cancel” if you do not want to delete any events.

**Find an Event in Calendar**

To easily find an event in Calendar, tap the magnifying glass in the top right corner of the Calendar in any view (Day, Week, etc.). This will open a search bar with a drop-down menu listing existing Calendar events on the current date and upcoming.

Swipe up or down to scroll through the drop-down list and manually search for the event you are looking for.

Alternatively, tap the Search bar at the top of the screen to open the software keyboard. Start typing and the drop-down list will automatically search for events using what you have already typed. To further narrow the search results, completely type out the event you are looking for.

If you finish typing your search and the drop-down shows “No Results,” check your search for spelling errors, or adjust the spelling*.

**“Saint”** will show several Catholic feast days in various provinces while **“St”** produces one result, a Saint’s feast day celebrated in Quebec.

Tap the event you are looking for in the drop-down list to open the even in Day View.
Today

Tap “Today” in the bottom left corner of the Calendar app to automatically show the current date in any view (Day, Week, etc.). This is helpful if you or the client gets lost in any view or wants to quickly access the current date.*

*This is also helpful if you try to find how far into the future Apple’s Calendar extends (it is infinitely generated) and don’t want to scroll all the way back to the current date.

Calendars

Tap “Calendars” in the bottom middle of the screen to view existing calendars and change the colour of events (called ‘Calendar’ by default) and holidays.

Tap “Hide All Calendars” to disable all currently active calendars for events, holidays, and birthdays.

Tap “Show All Calendars” to enable all currently inactive calendars for events, holidays, or birthdays.

Tap on an active/inactive calendar (‘Calendar,’ holidays, or birthdays) to disable/enable that calendar.

**Edit:** Tap “Calendars” in the bottom middle of the screen, then tap “Edit” in the top left corner of the pop-up window to change calendar colours or add other calendars to the app.

Tap on a calendar name to open a new page to edit colour. See next section for more information.
**Add Calendar:** Tap “Add Calendar.” The name of the calendar you are creating will show near the top of the page. Tap ‘Calendar Name’ to open the software keyboard and type in a name for the new calendar.

Tap a colour in the Color list to assign a colour the new calendar. Events can be assigned to specific calendars when you create or edit an event. Assigning different colours to different calendars can help keep client- or type-specific events separate. Colours can be edited at any time.

**Change Calendar Colours:** To change the colour of the event blocks or holidays, tap the coloured ‘i’ in circle next to the calendar you want to edit. A new page will open titled “Edit Calendar.”

**Calendar Name:** The name of the calendar you are editing will show near the top of the page. Subscribed calendars, such as Canadian Holidays, are faded and cannot be edited. Other calendars, like the events, will be brightly coloured. Tap the name to edit the calendar label.
**Shared With:** If an iCloud account has been added to the Calendars app, then created calendars can be shared with other people through the iCloud.

To add an iCloud account to Calendars, open **Settings > Calendar > Add Account** and sign in with an existing iCloud account (see **Calendar Settings**).

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**Add Person...**: Tap “Add Person...” in Calendars > Edit > [Calendar Name] to open a new window in the Calendars pop-up.

Enter the email address* of the person you want to share the list with. Or, if you have added the person to the iPad’s Contacts, type in the contact name and then tap the contact you want to add from the search results.

To share the list with more than one person, tap the plus sign in the circle at the right side of the pop-up window to search Contacts.

Tap “Add” in the top right corner of the pop-up window to begin sharing with all contacts.

*The email service provider must have a calendar app available (e.g., Google Calendar, iCloud, etc.) so the other person can access the shared calendar.

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**Event Alerts:** To enable notifications (audio and/or visual alerts) for a calendar, tap the toggle at the bottom of the Edit Calendar page.

Tap “Done” in the top right corner of the Edit Calendar page to save changes, or tap “Cancel” to close the page without saving.
**Inbox**

The Inbox shows invitations to events created by other people in their calendars. New invitations will show up under the New tab. Invitations that have been replied to will show up under the Replied tab.

To accept an invitation to an event, tap “Accept.” The sender will receive a notification that your client will be attending the event. If your client is unsure if he or she can make the event, tap “Maybe” to indicate he/she plans to attend. To decline to attend, tap “Decline.”

The invitation sender will receive a notification informing them of your client's decision.

**Calendar Settings**

To change Calendar settings such as subscribing to new calendars and syncs events between email accounts, open **SETTINGS > CALENDAR**.

**Accounts:** allows you to add other email accounts to the iPad. When you add a new account, you can enable Calendars for that service to better keep track of events. Events created online in Gmail for example, can be synced to the iPad Calendar app. This means that you and your client could set an event on a computer at the office using iCloud, Gmail, Yahoo, or another email service and the client would be able to view and receive alerts for that event on his or her iPad at home.
Tap “Accounts” to open the Accounts page. A list of accounts that have already been added to the iPad (i.e., through signing in to iCloud, etc.) will be visible at the top of the page.

Tap “Add Account” to open a new page of suggested, common email services. Tap on the client’s most used service. It is recommended the client sign in with (or sign up to) iCloud in the event the iPad must be factory reset*.

*Apple uploads data from the iPad when the iPad is locked, plugged in, and charging. These uploads are like freeze frames of the iPad at the time they are taken, recording apps and app placement on the iPad, app data, open pages in web browsers, and configured settings. Factory reset (or a critical error) erases all data from the iPad as if it had just been taken out of the box. The freeze frames can be downloaded through iCloud either during set up (see Section 1.1) or any time after to restore the iPad data.

Tap iCloud or Exchange to open a pop-up window, and enter email address and password for that account. Tap “Next” in the top right corner to verify the account. When verification is complete, the account will be added to the iPad.

Tap Google, Yahoo!, or Outlook.com to open the webpage for the email service’s sign in. Sign in, then tap “Next” to finish the sign in process and add the email account to the iPad.

Tap “Other” if your client does not have an account with any of the other services or has a different CalDAV** account.

**CalDAV is an Internet extension that supports products of different companies in a way that allows them to function together. Specifically, it allows you to access virtual calendars on other servers than the one you are using. If the email service provides a calendar when you sign on through a web browser, it is a CalDAV account and you can use it on this sign in on the iPad.
Tap “Server” to enter the client’s email address, then repeat for each data entry field in the pop-up window. “Description” allows you to assign a name to the account that will show on the Accounts page.

If you try to sign in to an account that has already been added, a pop-up window will notify you of this.

If information is entered incorrectly, a pop-up window with notify you that the email service cannot verify the account. Re-enter the information to try again or tap “Cancel” to return to the Add Account page.

Fetch New Data

Tap “Fetch New Data” to open a new page.

*Push*: the iPad will be constantly linked to added email servers so messages will always be pushed to the iPad at the time they are received by the email service. Note: iPad battery will drain faster. Not all email servers will allow Push.

Tap the toggle in the top right corner to enable Push.

*Synced Accounts*: Email accounts connected to the iPad will be set to receive notifications manually by default. This means that the iPad will search for new messages from the email servers only when the app is in use.

Tap on the name of a connected email server to change how messages are received.
**Fetch:** This feature will prompt the iPad to link to an email server connected to the iPad at specified intervals to check for new messages. If new messages are found, they are downloaded to the iPad at that time. The greater the interval, the faster the battery will run out.

You can set the iPad to fetch “Every 15 Minutes” up to “Hourly.” By default, the iPad is set to fetch “Manually.”

**Time Zone Override:** allows you to set event times in an automatically updated time zone (useful for long distance travel) or in a permanent, specified time zone.

Tap the toggle on the top right side of the page to enable the Time Zone Override. This allows you to access the Time Zone button below. Tap “Time Zone” to manually input the time zone. The iPad will record event times in this time zone regardless of your location.

**Alternate Calendars:** allows the Calendar app to display alternate calendars within the app. Days of religious obligation or observation (e.g., Christian Lent, Muslim month of Ramadan) and other holidays are marked in the Calendar app.

Only one calendar can be displayed at a time.

“Off” is the default setting and displays Christian holidays. Tap “Chinese,” “Hebrew,” or “Islamic” to display that calendar in the Calendar app.
**Week Numbers**: displays what week of the year it is on the calendar. The number appears as a small, faded number in the top left corner of the first day of the week.

Tap the toggle to enable/disable Week Numbers.

**Show Invitee Declines**: will allow you to receive notifications on the Calendar app when invitees decline your invitations to events. For more information on inviting others to events, see **Inbox**.

**Sync**: allows you to choose how far back calendars will sync past events between each other.

Tap “Sync” to open a new page.

Tap any option on the list to choose how far back you want Calendar to look to add past events.

**Default Alert Times**: allows you to enable alerts to automatically set at specific times for certain event types.

Tap “Default Alert Times” to open a new page. From this page, you can choose to assign default times for alerts for Birthdays, created Events, and All-Day Events. Tap “Birthdays,” “Events,” or “All-Day Events” for a list of possible alert times, then tap the time you want from the list to assign it as the default for that event type.
**Time to Leave:** Tap the toggle to enable “Time to Leave.”

This feature enables the Travel Time function in the Calendar app. Travel Time allows the Calendar app to estimate how long it will take you to get to an event based on starting and end locations, traffic conditions, and travel method. This feature requires a WiFi connection and Location services to be on.

**Start Week On:** allows you to change how the Calendar app arranges the week. By default, the calendar begins on Sunday.

Tap “Start Week On” to open a new page. Tap any day of the week to set that day to the beginning of the week.

**Default Calendar:** allows you to choose which calendar new events are saved to when new events are created in a calendar linked to the iPad (e.g., the Calendar app, iCloud.com, Google Calendar, etc.). Available calendars are listed by email account on the Default Calendar page.

Tap a calendar to set it as the default calendar for newly created events.
Location Suggestions: When you add a location to an event, recently added or searched locations, contacts and locations containing input letters*, and auto-complete suggestions** are listed under the search bar. Tap a Recent location or an auto-complete suggestion to add the address to the event you are creating/editing.

*Contacts can be created in the Contacts app, Calendar via Invitees > tap contact name or email address > tap "Create New Contact", or added to the iPad through linked email accounts. To allow the iPad to add contacts found in apps (such as Mail), open SETTINGS > CONTACTS and tap the toggle for CONTACTS FOUND IN APPS.

**Auto-complete requires WiFi to work.

Events Found in Apps: enables the option to add an event to Calendar through another app (e.g., Messages, Mail, etc.). If a time, date, or location is recognized by the iPad in a message, it becomes a hyperlink. Tapping the hyperlink gives you the option to turn the time, date, or location into an event in the Calendar. The Add/Edit New Event pop-up window will show to allow you to add other event information such as time, date, or location, travel time, and invitees.

Tap the toggle to enable this feature.

CLOCK
The iPad Clock provides iPad users with a multi-functional timekeeping tool which can be programmed to accommodate different time zones, help regulate sleep schedules, and give users a digital alarm clock and stopwatch. CLOCK is five useful tools in one preloaded app.

As an icon, CLOCK will display a working real-time analog clock.

Tap the CLOCK icon to open the app.
World Clock

To access World Clock, open CLOCK > WORLD CLOCK at the bottom of the screen.

The World Clock allows you to add any number of clocks displaying times in other parts of the world. This can be helpful if a client is travelling or has relatives or friends living/travelling around the world that he or she wishes to keep in contact with. World Clock allows you to see what time it is in any major city in the world and so know the best time to contact someone.

To accompany the AM/PM designations of a 12-hour clock, day and night are illustrated on the world map and on any clocks you add. The map displays a real-time boundary line between geographical areas in daylight (light shade) and areas on the other side of the world (darker shade). The clock faces are white in areas of daylight and black in areas after sunset.

Add Clocks

Tap the plus (+) sign in the top right corner of the World Clock screen to add new clocks. A pop-up window will display an alphabetically ordered list of major cities around the world.

You can search for a clock using the search bar at the top of the pop-up window. Tap the magnifying glass to open the software keyboard. You can search by city name or country. The list will automatically display all entries containing the letters you type.
To through scroll the list, swipe up or down within the pop-up window. To quickly access a section of the list, tap the corresponding letter in the orange vertical alphabet on the right side of the pop-up.

Tap the name of a major city to add it to the map. The city will no longer be listed once it is added in the World Clock. A coloured dot will mark the city on the world map and display the city’s name and the current time in that area.

An analog clock will also be added to the bottom of the screen; this will display the city name, the current time in that area, the time difference between the city and the iPad’s location*, and the times of sunrise and sunset in that area.

As many as 24 clocks can be added to the World Clock. Clocks will be displayed in the order they were added to the World Clock.

*If Location Services are on, the iPad will automatically update the time zone if the iPad is travelling with the client. If Location Services are disabled, the iPad will default to the time zone selected during device setup.

**Remove Clocks**

Tap “Edit” in the top left corner of the World Clock page. This will show a small red circle with a white horizontal line in the top left corner next to each clock at the bottom of the page. Tap the red circle to remove a clock. The city name will become accessible on the world list again.

Tap “Done” in the top left corner of the World Clock page to end Edit mode.

**Alarm**

To access Alarm, open CLOCK > ALARM at the bottom of the screen.

The Alarm section of the CLOCK app functions like an alarm clock. You can program dozens of alarms and customize them in several ways to better suit your client’s needs.
When an alarm is created and turned on, a small clock icon will show at the top of the iPad screen next to the battery charge icon.

**Alarm Appearance**

Alarms set in CLOCK always have a visual component and, by default, an audio track when the alarm goes off.

Visual alarms are full screen when the iPad is locked. Tap “Snooze” to delay the alarm for **nine** minutes, or tap “Stop” at the bottom of the screen to turn the alarm off until the next day.

Visual alarms are displayed as drop-down notifications when the iPad is open or in use. Swipe down on the drop-down notification to access the “Snooze” and “Stop” buttons, or tap the notification window to dismiss the alarm.

**Add Alarms**

Tap the plus sign (+) in the top right corner of the Alarm page to add a new alarm. A pop-up window will expand from the plus button. On this window is a scroll dial.

Swipe up or down on the first and second dials to choose the hour and minute you want the alarm to go off. Since the dial operates as a 12-hour clock, you can also set the alarm time to AM/PM by scrolling up or down on the last dial.
Repeat: allows you to choose the frequency that the alarm will sound during the week. The alarm will go off once a day at the time you specified but you can set the alarm to go off once a week or up to every day of the week.

Tap “Repeat” on the pop-up window to open a new page. This page will have a list of weekdays.

Tap any day to set the alarm to go off every week on that day. A coloured check indicates the alarm is set to go off on that day. Tap the day again to remove it from the alarm.

You can program the alarm to go off on any number of days on the list up to seven days a week. The days you set will be displayed beneath added alarms.

Label: allows you to name the alarms you set to keep track of why the alarm is sounding.

Tap “Label” to open the software keyboard. Type in a name for the alarm. Tap “Done” on the main page of the pop-up to save the name to the alarm.

Sound: allows you to program different ringtones for each alarm to further distinguish which alarm is going off.

Tap “Sound” to open a list of ringtones you can assign to an alarm.

Tap “But More Tones” to open the iTunes Store. If an iTunes card has been purchased, the amount can be redeemed through the Store and used to purchase additional tones and songs.
Tap “Pick a song” to open a pop-up window connected to the Music app. If songs have been purchased through iTunes Store or uploaded from a computer, these can be set as an alarm. Tap a song label to assign it to an alarm.

Tap a tone label (e.g., Radar) to assign it to an alarm.

At the bottom of the Sound list is the option for “None.” If no sound is assigned to an alarm, the iPad will use visual notifications as the standard alarm. Tap “None” to create a soundless alarm.

**Snooze:** is a toggle. When Snooze is enabled, the iPad will give you the option to delay an alarm for nine minutes after an alarm goes off. When Snooze is disabled, alarm notifications will not display the “Snooze” button.

Tap the toggle next to “Snooze” to enable or disable the Snooze option.

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**Turn Alarms On/Off**

To turn an existing alarm on or off, tap the toggle at the bottom of the alarm box. The toggle will turn black and the writing in the alarm box will fade to indicate it is turned off.

To turn an existing alarm on, tap the toggle at the bottom of the alarm box. The toggle will turn green, indicating the alarm will go off at the scheduled time every scheduled day until the alarm is turned off or deleted.
**Edit Alarms – Remove Alarms**

To change the settings of any alarm, tap "Edit" in the top left corner of the iPad screen. A red circle with a white horizontal line through it will appear on left side of each programmed alarm. Tap the red circle to delete an alarm.

Tap the alarm box to open a pop-up window identical to the one that appears when you create a new alarm. To change alarm settings, follow the instructions in Add Alarms that correspond to the changes you want make.

Edit mode is exited after any one change is made. Tap "Edit" each time you need to make a change to an alarm.

**Bedtime**

To access Bedtime, open CLOCK > BEDTIME at the bottom of the screen.

Bedtime provides the opportunity for iOS users to regulate their sleep/wake schedules. Bedtime automatically creates a reminder at a specified time of night and an alarm at a specified time in the morning based on the number of hours you want (or need) to sleep at night.

**Bedtime**

To enable Bedtime, tap the toggle in the center of the iPad near the top of the screen. When Bedtime is off, the clock on the page is faded, grey, and cannot be edited.

The Bedtime toggle also shows which days the Bedtime reminders/alarms are programmed to sound.
**Set Bedtime and Wake Times**

To adjust Bedtime, tap and drag the sleeping moon icon on the clock wheel to the time you want to go to sleep.

Tap and drag the either icon in a full circle past the other icon to access AM/PM times for Bedtime/Wake.

The number of hours you will spend sleeping if you fall asleep and wake up at the exact set times is displayed in the center of the clock face.

**Options**

To set the days Bedtime will function, the amount of time before bed the reminder will go off, and the alarm sound and volume for wake up, tap “Options” in the top left corner of the screen. A pop-up window will open.

*Days of the Week:* A series of circles at the top of the pop-up corresponds the days of the week. Highlighted/coloured circles indicate that Bedtime will run on those days. Grey circles mean Bedtime will not function on that day.

Tap a circle to highlight/unhighlight it.
**Bedtime Reminder:** To help you get to bed on time, the Bedtime feature provides Bedtime Reminders. At a specified time before your set bedtime, the iPad will prompt you with a visual and, by default, audible notification.

The Reminder notification will remind of the Bedtime you set as well as how many hours of sleep you will get if you go to bed at the set time.

Bedtime Reminders can be set as late as “At bedtime” or up to “1 hour before” bedtime.

Tap “Bedtime Reminders” to open a pop-up list of Reminder times. Tap any time on the list to set a Reminder.

**Wake Up Sound:** allows you to choose the ringtone for the Wake alarm. Tap “Wake Up Sound” to open a list of ringtones you can assign to an alarm. Swipe up or down to browse possible ringtones. Tap the name of a ringtone to play a preview of the tone.

At the bottom of the Wake Up Sound list is the option for “None.” If no ringtone is assigned to an alarm, the iPad will use a visual notification as the alarm. Tap “None” to create a soundless alarm.

**Wake Up Sound Volume:** is a sliding scale for the volume of the Wake alarm.

Tap and drag the white circle on the scale to adjust the alarm volume. The alarm ringtone will play as you adjust the volume so you can find the volume that is most appropriate.

A pop-up box displaying the iPad volume will briefly appear as well – while this pop-up is displayed, the hardware volume buttons on the side of the iPad can be used to change the volume of the Wake alarm.
**Wake Up Alarm**

Before or at bedtime, the iPad will provide a visual and audible alarm.

Drag the notification away from the top of the screen to access two options; tap one to choose it. The options are “Remind in 10 Min” to delay Bedtime, or “Going to Bed Now” to turn the alarm off. Tap the notification to open BEDTIME in the Clock app.

**Stopwatch**

The Stopwatch can be accessed by opening CLOCK > STOPWATCH at the bottom of the page.

The Stopwatch functions as a normal stopwatch, recording the hours, minutes, seconds, and milliseconds since the watch is started.

**View**

The Stopwatch has two views. The first view is digital; the second view is analog.

**Start/Stop**

To begin recording with the stopwatch, tap the coloured “Start” button on the bottom half of the right side of the page.

When the stopwatch is running, the green “Start” button will become a red “Stop” button. Tap “Stop” to pause the stopwatch.

Tapping “Start” again without pressing “Reset” (see Lap) will cause the stopwatch to continue recording where it left off.
**Lap/Reset**

With the stopwatch running, tap “Lap” to split the time between the timer start and end of the activity you are recording, without ending the recording session.

Green lap records mark the best (shortest) recorded time. The Stopwatch assumes you are trying to record the shortest amount of time it takes to do something (e.g., complete a puzzle) and marks the shortest time in green, a colour often associated with “good” or “complete.”

In contrast, the Stopwatch marks the longest recorded time in red, a colour often used to convey “bad” or “failed.” This means that using the Stopwatch to record activities that should have a longer duration (e.g., brushing teeth, exercising a nondominant limb) requires you to look for the red time displayed in Lap records.

Laps are useful if, for example, your client is walking five laps of his or her apartment as daily exercise and wants to see if he/she is getting faster. Tap “Lap” to divide the individual times it takes to walk around the apartment without manually recording the times and resetting the stopwatch each walk around.

**Lap No.:** Laps are recorded automatically so they can be compared later. Each lap is numbered in the order it is recorded.

**Split:** records the time between each lap as well as the time between the last lap and the current time when the stopwatch is running.

**Total:** shows the overall time the Stopwatch has been running. *Total* adds each lap and the current time being recorded to show much time has passed since the Stopwatch was first activated. It also records the overall time since Stopwatch was activated each time “Lap” is pressed.
Reset: When the Stopwatch is paused, “Lap” becomes “Reset.” Tap “Reset” to erase all recorded laps and total times and reset the Stopwatch to the start point (00:00.00, or 60, depending on view).

Timer

To access the Timer, open Clocks > Timer at the bottom of the screen.

Timer functions like a kitchen timer: program a time, a countdown will begin, and an alarm will sound when the timer reaches zero. The alarm is accompanied by a drop-down notification from the top of the screen.

Tap the notification to open Clock > Timer, or drag the notification toward the bottom of the screen to access the “Stop” button to end the alarm.

Set Timer

The Timer consists of two scroll dials, one for hours and one for minutes. Swipe up or down to change the hours and minutes the Timer will count down.

The greatest time you can set a timer for is 23 hours and 59 minutes. Timer will not let you set a timer for “0 hours, 0 min.” It will default to “0 hours, 1 min.”

Start/Pause/Resume

Timer will not start a countdown automatically. Tap “Start” in the bottom right corner of the page to begin countdown.

When the Timer is running, “Start” becomes “Pause.” Tap “Pause” to stop the timer without resetting it.

When the Timer is paused, “Pause” becomes “Resume.” Tap “Resume” to start the timer countdown after pausing it.
Done

When the Timer has been activated, the “Done” button in the bottom left corner of the page becomes highlighted and can be used.

Tap “Done” to reset the Timer and return to the scroll dials used to program the Timer.

“Radar”

“Radar is the default ringtone for the Timer end alarm. The name of the programmed ringtone will be displayed in the bottom middle of the page next to a little music note in a grey circle.

To change the ringtone, tap “Radar” to access a pop-up list of ringtones labelled ‘When Timer Ends.’ Swipe up or down to browse the list of possible ringtones. Tap a ringtone to hear a preview.

Tap “Classic” for an additional list of older iOS ringtones.

At the bottom of the When Timer Ends list is the option for “None.” If no ringtone is assigned to the Timer, the iPad will use a visual notification only.

Tap “Set” to assign a ringtone to the Timer and close the pop-up list.

Tap “Cancel” to close the list without saving changes.

NOTES

The Notes app allows users to write notes, create checklists, draw sketches, and share notes with others. There is limited formatting available on Notes.

Tap the NOTES icon to open the app.
Create New Notes

By default, when the Notes app is opened for the first time, a new note will already be set up.

To create additional notes, tap the paper and pen icon in the top right corner of the screen. The new note will be added to the Notes menu visible on the left side of the screen when the iPad is landscape orientated.

By default, the new note will be labeled “New Note.” The first few words typed in the note will become the note’s title.

Edit

There are two ways to edit on a note.

The first is to hold one finger to a portion of typed text in the note until a small magnifying lens pops up. After the magnifying lens appears, remove your finger. The second way is to double-tap the text you want to select.

Both ways will highlight text and produce a pop-up menu.

The menu will provide the option to Select text. Tap Select or Select All to open a slightly different menu. The second menu will provide options to cut, copy, paste, bold, italicize, and underline selected text, among others.

Edit Select: To add to or remove text from the selection, tap and drag the lollypop shaped marker at the edge of the text selection.

Create Checklists

To create a checklist in Notes, tap the icon shaped like checkmark in a circle found on the left side top row of the software keyboard. To mark a point in the list as complete, tap the empty circle in front of the point.
**Formatting**

To add titles, headings, or organized lists, tap the “Aa” icon on the left side top row of the software keyboard. A pop-up window will appear above the icon. Tap an item in the window to apply the formatting to the note.

**Add Image**

To add an image to the note, tap the camera icon on the right side top row of the software keyboard. There are two options:

*Take a new photo or video:* Tap “Take Photo or Video” to open the camera app.

*Add a photo from Photo Library:* Tap “Photo Library” to open a pop-up window of the folders available in the Photos app. Tap to select a folder, swipe up or down to browse photos, and tap the photo you want to add to the note.

**Draw**

To draw freehand on a note, tap the squiggle on the right side of the top row of the software keyboard. The keyboard will close. At the bottom of the screen will be several drawing tools and colours.

*Drawing Tools:* each tool has a different thickness and texture. Tap the pen, marker, or pencil icon to select a drawing tool, or tap the pencil eraser icon.
**Ruler:** Tap the ruler icon to enable the ruler. With the ruler on, tap on the ruler with one finger and drag your finger to move it. To change the ruler orientation, hold two fingers at least 1 cm apart on the screen, and turn your fingers like you are turning a dial. Tap the ruler a second time to disable it.

**Colours:** Tap on a colour to select it. Swipe left or right on the colour menu to access additional colour palettes.

**Undo/Redo:** To undo actions such as erasing drawings, tap the left-facing arrow at the top left side of the screen. Tap the right-facing arrow at the top left side of the screen to redo actions.

**Erase All:** To erase large amounts of drawing, tap “Erase All” at the top left side of the screen.

**New Pages:** To create multiple pages of drawings within one note tap the icon of a plus sign in the square at the top right side of the screen. To move between pages, swipe left or right on the iPad screen.

**Page Orientation:** To change the orientation of a page when drawing without changing the orientation of the iPad, tap the icon in the top right corner of the screen of a square with an arrow curving over it.

**Delete Notes**

To delete notes, tap the trash can icon in the top right side of the screen. Deleted notes will be moved to the Recently Deleted folder and will remain on the iPad for 30 days following deletion.
To recover a note in the Recently Deleted folder, tap the note title to open the note, then tap the type field to edit the note. A pop-up window will notify you that you cannot edit until the note has been recovered.

Tap “Recover” to restore the note to its previous folder and continue editing.

**Share**

The Share button allows you to: send notes over email and instant messaging services; invite others to edit; and print, lock, and save notes as images.

Additional messaging services purchased or downloaded from the App Store will be added to the Share list.

*AirDrop:* allows you to move files from the iPad to compatible iOS or macOS devices without using mail or mass storage transfers (e.g., USB or memory chips). AirDrop requires Bluetooth and Wi-Fi connections.

*Save Image:* will download drawings in Notes to the Photos app. See **Notes Settings** for more information.

*Assign to Contact:* becomes available on notes with drawings. Assign to Contact allows you to set an image or part of an image as the profile picture for contacts in the Contacts app.

**Add People**

Notes in the iCloud folder can be viewed and edited by people the note has been shared with. Locked notes cannot be shared.

*To add people:* Tap the silhouette with a plus sign icon in the top right side of the iPad screen.
Notes can be shared via email, messaging, or social networking apps. Tap the icon corresponding to the service your client would like to use to send the invitation.

The exact process for sharing will depend on the app used to send the invitation. Type or select the name of the contact the note will be shared with.

Notes that have been shared with others will display a small silhouette in a circle icon next to the title in the list column. The Add People icon will change to display a check mark in place of the plus sign.

To stop sharing: Tap the Add People icon. A drop-down window will show your client’s iPad as the owner and will display people who have been invited to the note. Tap “Stop Sharing” to remove access to the note from everyone the note has been shared with.

To remove individuals from sharing: Tap the name of a contact who has been added to the note. A new page will open showing the person’s contact information. Tap “Remove access” to stop sharing with that individual.

Lock Note

Private notes and notes containing passwords, login, or other confidential information can be secured behind an electronic lock. A password or fingerprint login can be set to lock and unlock notes.
Set Password

To create a password, open Share in the Notes app and tap Lock Notes. A pop-up window will ask you to create a password and will recommend you provide a hint. Passwords can contain letters, numbers, and symbols.

Touch ID can also be enabled on the window. Tap the toggle to enable the feature. If a fingerprint has not already been saved to the iPad, you will be taken to the setup and your client will be required to add his or her fingerprint to Touch ID.

Passwords can also be created in SETTINGS > NOTES > PASSWORD. See Notes Settings for more information.

Lock and Unlock Notes

To put a lock on a note, open Share and tap Lock Note. A short pop-up animation will state that a lock has been added. An unlocked padlock icon will appear at the top right side of the page.

To lock the note, tap the padlock icon. The note contents will be replaced with a locked padlock and the words “This note is locked.”

Tap “View Note” under the lock to open a pop-up window. If Touch ID has been enabled for Notes, the pop-up will give you the option to use Touch ID, or tap “Enter Password” to input the password manually.

Locked notes will show a padlock next to the title in the Notes list (see Notes List and Folders for more information).

Remove Lock

To remove a lock from a note, open Share. A Remove Lock button will have replaced the Lock Note icon. Tap this button to play a short pop-up animation stating the lock has been removed.
Notes List and Folders

List

By default, the iPad will display a list of notes in a column on the left side of the screen when the iPad is in landscape orientation.

Tap <Notes to open the list in portrait orientation.

To close the notes list, tap the double arrow icon on the top left corner of the type field.

All notes in the current folder will be displayed in the list in order of last edit*. The date or time a note is created is listed under the title along with the first few words in the note.

Tap a note label/title to open the note.

*Order of listing can be changed. See Notes Settings for more information.

The number of notes in a folder will be displayed at the bottom of the screen. If too many notes are in a folder, the search bar can be used to search for individual words in any note. Swipe down from the top of the list to access the search bar.

Attachments and drawings in notes stored in any folder can be accessed by tapping the four-square icon in the bottom left corner of the list column.

Edit: To edit notes in the list, tap “Edit” in the top right corner of the list column. An empty circle will appear next to the names of notes in the list. Tap the name once to select it.
To move the note, tap “Move To…” in the bottom left corner of the list column. Tap the folder you would like to move the note to, or tap “New Folder” to create a new folder and move the note there.

To delete the note, tap “Delete” in the bottom right corner of the list column.

**Folders**

Tap < to open the folders list.

Folders are segregated according to where they are stored (e.g., iCloud, On My iPad, and added email services). When multiple folders are in a storage, an additional folder designated “All [storage name]” is created. All notes in all folders stored in that storage area can be viewed.

**Create New Folder:** To create a new folder, tap New Folder in the bottom right corner of the list column. A pop-up window will ask what storage area you would like to create the folder in. Tap the desired storage area.

A second pop-up will ask you to name the folder. Type in the name, then tap save to create the folder.

**Edit:** To edit folder names or delete folders, tap “Edit” in the top right corner of the list column. Folders that can be edited will have an empty circle next to the folder name. Tap the circle to select it.

To delete the folder, tap “Delete” in the bottom right corner of the list column.

To rename a folder, tap the folder name, type in a new name for the folder, then tap “Save.”

Tap “Done” in the top right corner of the list column to save edits.
Notes Settings

To change Notes settings such as sorting notes within folders and changing Lock passwords, open SETTINGS > NOTES.

<table>
<thead>
<tr>
<th>Settings</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes</td>
<td>Accounts iCloud, Gmail</td>
</tr>
<tr>
<td>Reminders</td>
<td></td>
</tr>
</tbody>
</table>

**Accounts:** For more information on Accounts, see Calendar Settings > Accounts.

**Sort Notes By:** Tap to open a new page. A short catalogue of possible sorting options is listed. Tap any option to change how notes will be ordered in the list column of the Notes app.

**New Notes Start With:** Tap to open a new page. A short catalogue of note formatting options is listed. Tap any option to change the starting format of new notes created in the Notes app.

**Default Account:** Tap to open a new page and choose which folder will show if the Notes widget is added to Today View*.

Tap any option to change the folder that notes will appear from in Today View.

*Today View is a premade Home screen and cannot be deleted. To access Today View, swipe toward the right on the Home screen until you reach the last page.
**Password**: Tap to open a new page.

**Change Password…**: Tap to open a pop-up window. To change the password, you will be required to enter the old Notes password. Enter the old password, then type the new one in the type field under it. Verify the password. It is recommended your client provide a password hint to help with recall.

**Reset Password**: Tap to create a new password for future notes. Notes that have already been created will still require the original password they were locked with.

If your client forgets the Lock Notes password, “Reset Password” will **not** help in recovering old locked notes.

**Save Media to Photos**: automatically saves photos and videos taken through the Notes app to the Photos app. Tap the toggle to enable the feature.

**“On My iPad” Account**: allows you to keep notes in the iPad storage rather than in iCloud or on another remote-access service. Tap the toggle to enable the feature.

To move notes and folders to “On My iPad” storage, see **Notes List and Folders > List > Edit.**
REMINDERS

The iPad functions much like a notebook with a built-in alarm clock. You can create and customize to-do lists, and set timed or location-based alarms for items on the list. Multi-step activities such as buying groceries, cleaning a kitchen, or even making a meal can be written and each item checked off as you go along.

Tap the REMINDERS icon to open the app.

Create New List

A blank list is available to edit the first time the Reminders app is opened. You can add items to the list and change the colour of the title.

Tap “Add List” in the bottom left corner of the iPad screen to make a new list at any point.

*List Title:* Tap the current title to enter a new one or edit the existing title. A blinking cursor will indicate you can enter text. If a hardware keyboard is not connected to the iPad, the software keyboard will open. The longer the title, the smaller the text. Eventually, the text will be replaced with an ellipsis (“…”) and cannot displayed.

*Change List Colour:* A row of colour circles is available under the title. Tap a colour to assign it to the title, items number, and completed item indicators.

Tap “Done” in the top right corner above the row of colours to create the new list.
**Add Items to List:** Tap the faded gray plus sign on the left side of the list space to add new items to an existing list*. You can add as many items as you need in a list. The number of items in the list will be displayed across from the list title in any view.

Consider point form or short sentences to avoid clutter.

Tap “Done” under the items number to save changes and close editing.

*To continue adding new items quickly, tap the “Return” key on the keyboard to automatically add the current item and move to the next text field.

**Remove Items from List:** Tap “Edit” at the top of the screen under the items number to delete items from an existing list.

Tap the red circle with a horizontal white line through it next to the item you want to delete. Then tap the red “Delete” button. Tap “Done” in the top right corner when you have deleted all desired items.

**Edit List**

**Edit Title:** Tap the title to edit the name of the list. A blue cursor will start blinking in the title text field to indicate you can enter text. If a hardware keyboard is not connected to the iPad, the software keyboard will open.

Type a title for the new list.
**Change List Colour:** A button labelled “Colour” will open a list of colours you can assign to the list. The title, item number, and completed items will display the assigned colour. Tap a colour name on the list to select that colour. The list will close when a colour has been selected.

**Sharing:** When Reminders sync is enabled in iCloud (see On My iPad/iCloud), you can share the lists you create with other devices. Tap “Sharing” to open a pop-up window.

Share With…: Tap “Add Person…” to open a new window in the pop-up. A blue cursor will blink next to the word “To:” to indicate you can enter text. If a hardware keyboard is not connected to the iPad, the software keyboard will open.

Enter the email address of the person* you want to share the list with. Or, if you have added the person to the iPad’s Contacts, type in the contact name and then tap the contact you want to add from the search results.

To share the list with more than one person, type a second email address or tap the plus sign in the circle at the right side of the pop-up window to search Contacts.

Tap “Add” in the top right corner of the pop-up window to begin sharing with all contacts.

*You can only share lists with people who have access to an iDevice or iCloud account. The person must have Reminders installed on the device or have access to iCloud.com.

Pending…: The iPad will attempt to connect with the added contacts and share the list with them. The iPad will display the status of connection beneath the contacts’ name.
**Edit:** Tap “Edit” to remove people from the list share. Tap the red circle with a horizontal white line through it next to the contact you want to remove. Then tap the red “Stop Sharing” button.

Tap “Done” in the top right corner when you have removed all desired contacts. Then tap “Done” to close the pop-up window.

**Change Item Order:** Tap the three horizontal gray lines to the right of an item and drag the item up or down the list without removing your finger. This will change the order in which items appear on the list so you do not have to delete and retype items if they are entered out of sequence.

Tap “Done” under the items number to close the editor.

**Show/Hide Completed**

When an objective in the list has been met, you can mark the item as complete. When an item is marked complete, the circle next to the item will fill with colour (the same colour assigned to the title) and the item text will fade.

Tap the empty circle next to a list item to mark the item complete. Completed items will be moved to the bottom of the list.

Tap the filled circle next to a list item to mark the item incomplete.

Hide Completed is enabled by default. Moving from one list to another reset Hide Completed each time.

When Hide Completed is enabled, completed items will be removed from the list to avoid clutter until Hide Completed is disabled.
To disable Hide Completed, tap “Show Completed” at the bottom right half of the screen. Until you close the app or move to a new list, Show Completed will remain enabled.

**Search**

To quickly find a list, tap the Search bar at the top left of the Reminders app. The iPad’s smart search will show all lists containing the letters you type as you type them. The search results will be coded using the colour assigned list.

Tap the list you are looking for from the search results listed under the search bar.

If no lists contain the characters or character order you have typed, the search will display “No results found.”

Tap “Cancel” to exit a search.

**On My iPad/iCloud**

Under the search bar at the top left corner of the app screen is a catalogue of the lists you have created. The name of the catalogue will depend on where the lists were created and if iCloud Sharing is enabled*.

*To enable iCloud Sharing, open SETTINGS > iCloud. Tap the toggle next to REMINDERS to sync the Reminders app to the iCloud account associated with the iPad.

**Edit Lists Catalogue:** Tap “Edit” in the bottom middle right of the Reminders app to edit the existing catalogue of lists on the device/in the iCloud.
Delete Lists: Tap the red circle with a horizontal white line through it next to the item you want to delete. Then tap the red “Delete” button. Tap “Done” in the top right corner when you have deleted all desired items.

Edit List Order: Tap the three horizontal gray lines to the right of an item and drag the item up or down the catalogue without removing your finger. This will change the order in which items appear on the list.

Tap “Done” in the bottom middle right of the Reminders app to close the editor.

Scheduled

You can schedule an audio and visual alarm to remind you when it is time to complete a list objective. Alerts can be scheduled based on time or location*.

Scheduled alerts will be displayed on the left side of the page under the catalogue of existing Reminders lists. The number of items due or overdue are marked here.

*Location-based alerts require Location Services, WiFi, and Cellular data to be enabled. To enable Location Services, open SETTINGS > PRIVACY > LOCATION SERVICES. Tap the toggle at the top of the page.

Set New Alert

To set up an alert, tap an item in an existing list, then tap the “i” icon in a circle on the right side of the screen. This will open a pop-up window labelled “Details.”

Time-Based Reminder: Tap the toggle next to “Remind me on a day” to set up a date and time for the item alert.
Alarm: Tap “Alarm” to open a scroll dial. Swipe up or down on the first dial choose the date. Then scroll up or down on the second and third dials to choose the hour and minute you want the alarm to go off. Since the dial operates as a 12-hour clock, you can also set the alert time to AM/PM by scrolling up or down on the last dial.

Tap the blue date and time under the “Remind me…” toggle to close the scroll dial.

Repeat: If an item in the list will take more than one attempt to complete, you can set the alert to repeat. Items programmed to repeat will display the repeat date in the list under the item text.

Tap “Repeat” to open a schedule of times. The alert can be repeated as often as “Every Day” or as little as “Every Year.”

You can also create custom schedules. Tap “Custom” at the bottom of the Repeat list to open a new page.

On the Custom page, you can set the Frequency of the alert to “Daily,” “Weekly,” “Monthly,” or “Yearly.” All settings except “Daily” allow you to choose the day of the week, day of the month, or a specific date of the year (e.g. “Every month on the 10th” or “Yearly on the fourth Wednesday of March and June”) for a repeat alert.

You can also set the event to occur Every day (1) or up to every 999 days, every week (1) or up to every 999 weeks, every month (1) or up to every 999 months, or every year up (1) up to every 999 years. Tap “Every” and swipe up or down on the dial to adjust how often the alert repeats.

End Repeat: To cancel the reoccurring alert, tap “End Repeat.” A new page will open. By default, “Repeat Forever” is selected.
Tap “End Repeat Date” to set an end date for the alert. A scroll dial will open.

Swipe up or down on the first dial choose the month, the second dial to set the date, and the third dial to set the year.

Tap “Done” to return to the Details window.

**Location-Based Reminder:** Tap the toggle next to “Remind me at a location” to set up location-based alerts.

When “Remind me at a location” is enabled, a new button labelled “Location” will appear. Tap “Location” to open a new page.

If Reminders has not been connected to the iPad’s Location Services previously, a pop-up window will ask you to allow or deny the Reminders app to access the Location Services.

Tap “Allow” to connect Reminders to the iPad’s Location Services and continue with alert set-up.

Or tap “Don’t Allow” to close the window. You will not be able to set up location-based alerts if Reminders does not have access to Location Services.

**Add Location:** The option to add the iPad’s current location to the reminder will be listed, along with the iPad owner’s home address if the address has been added to the Contacts app.

To add a new location, you can use the search bar at the top of the pop-up window.

Tap the magnifying glass to open the type field; if a hardware keyboard is not connected, the software keyboard will open. You can search by business name, address, or contact*. The list will auto-complete suggestions based on the letters you type**.

To browse the list, swipe up or down within the page to scroll.

Tap the name of a business or address to add it to the alert.

When you add a location to an alert, recently added or searched locations are listed under the search bar. Tap a Recent location to add the address to the alert you are creating/editing.
*Auto-complete requires WiFi to make suggestions and link locations to the Reminders app.

**Contacts must have the address field completed to be included in the locations auto-complete suggestions.

When I arrive…/When I leave…: This option will program the iPad to sound an alert as a location is approached or travelled away from.

Tap “When I arrive…” if your client would like to be reminded to complete an item in the Reminder list as he/she travels to the added location. This may be used to remind your client to purchase items from the grocery list in the Reminders app as she/he travels to the grocery store.

Tap “When I leave…” if your client would like to be reminded to complete an item as he/she travels away from added location. This may be helpful in reminding your client to visit the pharmacy on the way home as she/he leaves an appointment, for example.

Remind Me Within (Distance): When a location is added to the reminder, an interactive map is displayed at the bottom of the page. The added location will be indicated by a red pin on the map surrounded by a blue circle with a black radius marker. The blue circle is a default distance of 320 ft. within which the iPad will sound an alert for a reminder item.

To adjust the distance between the location the reminder alert, tap and drag the black radius marker closer or farther away from the location pin.

The distance in feet will be displayed until your finger is removed.

The map will automatically zoom out if the radius marker is moved beyond the original map border.

Priority: Items of importance can be marked for easy distinction. By default, “None” is selected.

Tap “!”, “!!”, or “!!!” to set different levels of priority to an item. The priority icon will be displayed before the item text in the list.
Priority is a **visual reminder** only. No further action is taken by the iPad for Priority items in the Reminders app.

**List:** To move an item from the list you are editing to another list, tap “List.” A new page labelled “Change List” will open. Existing lists will be displayed on this page.

Tap a list on the “Change List” page to move the item you are editing to a new list. The changes you made in the editor and the original item will be moved to the new list.

**Notes:** Tap “Notes” to add additional information to items in the lists.

Information such as the location corresponding to the item in the list or objects required to complete the activity the item relates to can be added to the Notes section.

Tap “Done” in the top right corner of the pop-up window to close the window.
SECTION 3.2 USABILITY
Because portable technologies usually lack an attached mouse, stylus pens and users’ fingers are often employed for device navigation. The flexibility and presumed availability of fingers has lead developers of palmtop and laptop devices to create varieties of physical shortcuts called gestures to aid in navigation and use of sometimes hidden features.

GESTURES
Gestures in this section will be listed by the number of fingers it takes to complete an action.

One Finger Gestures

*Tap:* Used to select an item. Place one finger on iPad screen and remove within one second.

*Double-tap:* Used to select items in VoiceOver, activate Caps Lock on the software keyboard, and highlight editable text. Can be used in some apps to move a short way down a page.

*Press:* Used to activate an item. Includes but not limited to moving app icons on Home screen, highlighting text, choosing how links behave, opening formatting menus for highlighted text.

Place one finger on iPad screen and hold for minimum three seconds.

*Click:* Used on Home button. Double-click to open App Switcher and browse or close open apps. For more on Home button, see HOME BUTTON in Section 2.2.

*Swipe:* Used to move to new pages (left/right) or scroll through text (up/down). Place one finger on iPad screen and move finger in the direction you want to scroll (e.g., place finger at the top of screen and drag down as if you were pulling the top of a page toward you). Speed affects the how swipe works. Fast swipes scroll quickly and may keep momentum on the page after finger is removed.
Tap Top of…: Tap near top of some menus or web pages to quickly scroll to the top. Works in Notes, Contacts, and Safari.

Swipe Down from Top: Swipe down from top of iPad screen to open recent notifications.

Swipe Down: Swipe down anywhere on the Home screen to open Spotlight search. Siri Suggestions will show recently or commonly opened apps.

Swipe Up from Bottom: Swipe up from bottom of iPad screen to open Control Panel.

Two Finger Gestures

Swipe Down from Top: Used to start Screen Reader when SPEAK SCREEN is enabled.

Swipe Right: In some open apps, can be used as a Back button to return to a previous page. Place fingers at left side of iPad screen, drag toward right side.

Twist: Used to switch items in ROTOR and change orientation of ruler in Notes. Hold two fingers approximately an inch apart and rotate them on the iPad screen as if turning a dial. Can use two hands.

Pinch In: Used to zoom out on web pages, Notes, Photos, and some other apps. Start with fingers spread at least one inch apart, drag fingers closer together.

Pinch Out: Used to zoom in on web pages, Notes, Photos, and some other apps. Start with finger spread at least one inch apart, drag fingers farther apart.

Three Finger Gestures

Double-tap: Opens the Magnifier.
Four Finger Gestures (Requires Multitasking)

To enable Four finger gestures, open SETTINGS > GENERAL > MULTITASKING and tap the Gestures toggle at the bottom of the page.

*Swipe Left/Right:* Opens the last app opened as long as the app has not been closed. If the app was minimized by clicking Home button, it is still running. If the app was swiped up in App Switcher, it has been closed and gesture will not work.

Swipe fingers from left/right edge of iPad toward other side to switch to other open apps.

*Swipe Up:* Opens App Switcher.

*Pinch In:* Alternate method to open App Switcher.

Five Finger Gestures (Requires Multitasking)

To enable Five finger gestures, open SETTINGS > GENERAL > MULTITASKING and tap the Gestures toggle at the bottom of the page.

*Pinch In:* Minimizes apps. Does not close them.