Alliance for Healthier Communities
Alliance pour des communautés en santé

Evaluation of the Implementation of OCEAN Online Appointment Booking, Reminders and Messaging

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Contents

Background

In July 2021, the Ministry of Health offered one-time funding to Ontario Health Teams (OHTs), 'In Development Teams' and other health care organizations to implement, enhance and scale virtual care programs and services. The funding was intended to support the recovery of the health system from Covid-19 by increasing access to services, changing how care is delivered and building digital capacity.

The Alliance for Healthier Communities, on behalf of its members, secured funding to implement the PS Suite Virtual Visit application, along with the CognisantMD OCEAN platform. The OCEAN platform provides online appointment booking and reminders, as well as asynchronous provider messaging. Both platforms are integrated into PS Suite, the electronic medical record (EMR) system. Appointment scheduling is managed through the OCEAN platform and integrates with the EMR. OCEAN also allows for secure messaging with clients, and when a client completes a form sent via messaging, the data are added to the client's record.

Alliance members are funded by Ontario Health and their base budgets are intended to cover the costs of new technology. This opportunity presented an opportunity to fund digital expansion in the sector, especially since base budgets have not increased in over a decade. This funding also furthered the implementation of the Alliance's Digital Equity Strategy focused on removing barriers to digital inclusion, including for Francophone, Black, Indigenous, rural/remote, street-involved and senior communities receiving primary and social care.

This report addresses the following objectives and outlines the experiences of, and the impact on, organizations implementing the OCEAN platform, with online appointment booking, reminders and messaging.

1. *Describe the implementation of messaging, reminders and online appointment booking at Alliance member centres*
2. *Identify effective implementation strategies for, and challenges in, implementing messaging, reminders and online appointment booking, as well as areas for improvement*
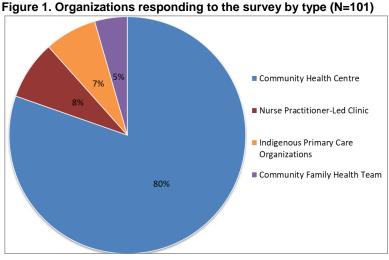3. *Provide a preliminary description of impact on organizations and clients*

Methods

This evaluation of the implementation of OCEAN online appointment booking, reminders and messaging is based on the evaluation framework in Appendix A. The framework was developed based on a literature review, Ontario Health requirements, and input from Alliance staff.

The evaluation methods included gathering information from:
➢ A literature and document review
➢ Administrative data from the Alliance
➢ A questionnaire completed by the Alliance
➢ An organizational survey
➢ Six case studies
➢ Client surveys

The organizational survey was developed based on the evaluation framework, Ontario Health questions and the technology acceptance model (TAM).[1] There were 101 responses to the organizational survey, with 80% of respondents based at Community Health Centres (Figure 1, Appendix 2). Among

Figure 1. Organizations responding to the survey by type (N=101)

Legend:
- Community Health Centre
- Nurse Practitioner-Led Clinic
- Indigenous Primary Care Organizations
- Community Family Health Team

(80%, 8%, 7%, 5%)

respondents, 47% were management and administration, 21% were IT/data management and 32% were health care providers. (Health care providers completed a shortened version of the survey).

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[1] Davis F D. Perceived usefulness, perceived ease of use, and user acceptance of information technology. Manage Inf Syst Q. 1989;13:319–340; Yousafzai S Y, Foxall G R, Pallister J G. Technology acceptance: a meta-analysis of the TAM: part 1. J Model Manag. 2007;2(03):251–280.

The methodology included six case studies with participating organizations across Ontario. The case studies entailed a focus group with staff at each organization and a survey of 56 clients who had used the online booking platform. The age of client survey respondents was distributed between 20 and 79 years, and three-quarters identified as female (Table 1). Almost all (94%) reported that they were comfortable speaking English, 56% were born in Canada and 35% reported that they were from a minority racial or ethnic group.

Table 1. Client respondents by age and sex (N=56)

Age group	Percentage	Gender	Percentage
Under 20	0%	Female	75%
20-29	13%	Male	25%
30-39	13%		
40-49	19%		
50-59	25%		
60-69	21%		
70-79	10%		
80+	0%		

Preparation and Start Up

Alliance Planning and Support Activities

In October 2021, the Alliance was notified that it had received 1,000 OCEAN licenses for it members and launched the initiative in November. Member centres were emailed to express interest in the project, and those who were interested were asked to submit the number of licenses they required. The number requested was greater than 1,000, so licenses were allocated based on human resource budgets. Notably, deploying individual licences required significantly more administrative work than would site-wide licenses. To date, 53 sites registered to participate for a total of 809 licenses. Thirteen sites have chosen not to move forward at this time and others do not require all the licenses provided. The Alliance has thus reallocated these licenses and other product licenses (i.e., tablets and SMS text messages).

The Alliance provided the following resources to support implementation:
➢ CIO and Program Lead for contract negotiation with vendors such as CognisantMD and TELUS Health
➢ Performance Management/Information Management Secretariat to manage participating members and collect data for reporting
➢ Provincial Data Management Coordinator who:
  o Worked with the organizations centres to determine which wanted to participate, assign licenses and act as a first line of support for questions on the process
  o Organized and facilitated training sessions (webinars) with OCEAN trainer on set up and use
  o Organized and facilitated community of practice webinars where organizations could ask questions and share best practices
  o Provided direct technical and other support to participating organizations
  o Distributed credits to online appointment booking access
  o Communicated with participating sites about the program reporting requirements and timelines
  o Oversaw data capture and reporting required for the funding agreement
➢ Information Management Strategy Secretariat who provided administrative support in sending emails to participating organizations, setting up webinars, supporting data collection and collation, etc.
➢ Resource documents created by OCEAN and the Alliance
➢ A centralized Sharepoint with resources documents, "how to" videos, recordings of webinar sessions, frequently asked questions, presentation slides and client marketing materials.

In addition, an email group was created. Weekly update emails were sent through November and December, then biweekly in January, and monthly in February and March. After each online session, follow-up emails were sent to the email group, with the materials from the webinar and information on next steps. Links to the webinar recording and a Q&A document were included, along with links to the Sharepoint and OCEAN technical site. As the implementation proceeded, more people were added to the email group to ensure the requisite people were receiving the information.

The following is a list of the implementation activities undertaken by the Alliance (Table 2).

Table 2. Implementation activities

Month	Activities
August	August 3 – Started first draft of proposal August 3 – Initial communication to members about the potential opportunity August 13 – Met with OH to review high level information August 31 – Initiated high level discussion with CognisantMD regarding the opportunity
September	Sep 1-22 – Worked with vendor on costing model for different options (enterprise vs. user licenses) Sept 9 – Communicated status of the potential opportunity for OAB funding to the members Sep 23 – Proposal submitted September 27 – Funding approved for
October	October 4-15 – Developed implementation model with vendor October 12 – Email to all Executive Directors asking for interested and estimated number of users October 19 – Informed the members the Alliance received 1,000 licences October 19 – Member-wide webinar, introducing the program and high level logistics for implementation. Requested validation from centres that wished to participate (including number of licenses required) October 27 – Alliance receives initial training on how OCEAN distributes licenses October 28 – Met with Ontario Health October 29 – Validation of centres participation and license requirements due from members
November	November 4 – Training: Alliance hosted overview webinar November 9 – Training: OCEAN kick-off webinar November 18 – Training: Online booking webinar for sites already setup with OCEAN messaging and reminders November 16 – Developed client-facing materials for sites to inform clients about online booking November 24 – Training: Reminders and messaging setup webinar for sites new to OCEAN November 29 – Agreement signed with Vendor November 30 – Training: Online booking setup webinar for sites new to OCEAN
December	December 7 – Support session December 16 – Support session December 16 – Presentation to Ontario Health on implementation process Throughout December – 25 individual support sessions with sites
January	January 13 – Support session January 27 – Support session January 28 – TPA received by Alliance and returned about a week later Throughout January – 12 individual support sessions with sites Documentation for collecting data created and shared with sites
February	February 17 – Support session Throughout February – 12 individual support sessions with sites Data collected from sites and collated
March	March 3 – Support session Individual support sessions as needed
April (Planned)	Individual support sessions as needed Inclusion of new sites that were un able to join in past fiscal year; training and support to be provided

Support and Training

During implementation, participating organizations were offered training webinars with OCEAN staff hosted by the Alliance, online support sessions, one-on-one support from the Alliance or a third party and OCEAN technical support. Table 3 summarizes the webinars hosted by the Alliance.

Table 3. Training sessions

Date	Type of session/session content	Number of attendees
November 4	Training – Alliance-hosted overview webinar	90
November 9	Training - Cognisant/OCEAN kick-off webinar	104
November 18	Training - Online booking setup webinar for organizations already using OCEAN messaging and/or reminders	13
November 24	Training - Reminders and messaging setup webinar for new organizations	124
November 30	Training - Online booking setup webinar for new organizations	106
December 7	Support session	79
December 16	Support session	47
January 13	Support session	22
January 27	Support session	24
February 17	Support session	17
March 3	Support session	22

Participating organizations appreciated the group and individual support, but were less likely to access information from the Sharepoint site or respond to emails and surveys. Individualized support was offered in the group emails and during the online sessions. Meetings were scheduled as quickly as possible after the Alliance was contacted with questions. As well, the implementation status of each organization was tracked and the Alliance followed with individual organizations that were falling behind. Many were reported to have required one-on-one support, in addition to the online sessions and other materials, in order to set up the platform.

Based on the organizational survey, more than three-quarters of respondents were to *some or a great extent* satisfied with the support they received. Two-thirds reported that their organization had to *some or a great extent* received one-on-one support implementing OCEAN, and had provided education and training to support their staff in the implementation of OCEAN (Figure 2).
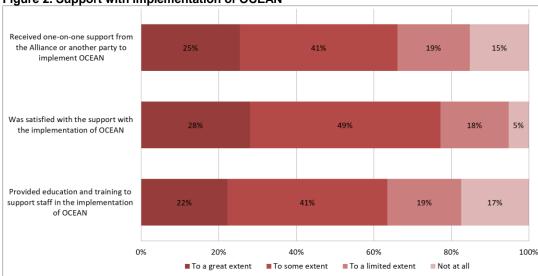
Figure 2. Support with implementation of OCEAN

Based on the qualitative responses in the survey and case studies, organizations were very appreciative of the support provided by the Alliance. According to one respondent, the support was "*was truly exceptional, patient, knowledgeable, accessible and essential to moving this along for us,*" and another said "*without that help we would not be using it today.*" While the Alliance could answer many questions, some had to be referred to OCEAN, where organizations had to submit a ticket through the technical support website. Some reported prompt response times from OCEAN, but others reported delays. One respondent reported that "*I find their support is quick and thorough and their tools are well thought out and robust.*" But another said "*the person responsible for OCEAN she did not know the nuances – even she did not know.*"

Several organizations reported that the training webinars hosted by the Alliance and presented by OCEAN were informative, advanced their understanding and prepared them to use OCEAN. However, some found them fragmented and complex. "*Some items oscillated back and forth between being clear and ambiguous*." Some found training "*piecemeal*" and "*quite confusing; it was hard to watch webinar and materials and relate how to use them in real time*."

Many of those who participated in the additional support sessions found them helpful in working through challenges they were experiencing and for learning something new and relevant about the platform. More time for questions and discussion was desired. Some said that they learned a lot from other organizations' experiences and would have liked more opportunities for sharing learnings among sites. One person suggested that sites could be paired to support each other.

Based on polls administered during the webinar sessions, most participants reported that *to some or a great extent* the information presented was clear and concise. Approximately half had *to some or a great extent* been able to review the materials prior to the training webinars. Only 13% reported that they were *to a great extent* able to apply the learning from the last webinar and 20% reported *not at all*. In the earlier webinars, 24% reported that to a *great extent* they felt confident that they could apply the information presented. In later support sessions, 32% reported that to a *great extent* information provided had increased their confidence to implement OCEAN (Note that the response rate to these polls was relatively low) (Figure 3).
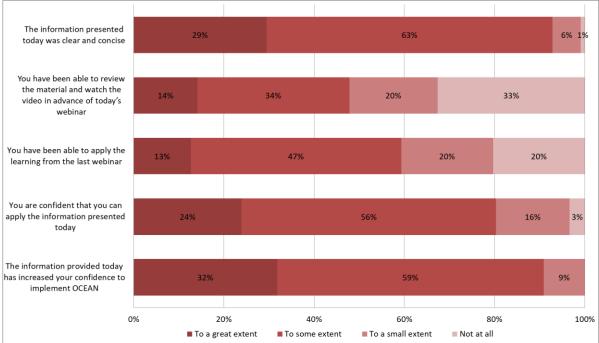
Figure 3. Experience with training and support webinars

While some participants found the videos helpful, others did not. Several found them "*overwhelming*" and difficult to follow and apply. Users reported challenges finding time to set aside to watch them and having to watch them several times. They were frustrated when they wanted to go back and find a particular section or topic within the video and could not easily find the information. Some individuals said they do not learn easily from videos and often "*tuned out*" or were "*easily distracted*." Some reported that the individual support calls were more helpful. Many would have preferred a manual format that included pictures and screen shots they could easily refer to, search the table of contents/index and take less of their time (e.g., the PS Suites manual). Some described the set up as "*trial and error*" and wanted "*step by step instructions*" or "*blueprint on what to do*."

Several individuals reported challenges with staff training and the time required. They indicated that for other platforms they had more hands-on, dedicated in-house support during implementation. One reported that "*self-training is very inefficient and time consuming*" and that they "*don't have dedicated staff to spend the time*." Administrative staff learned the platform themselves and then trained their team either as a group or one-on-one. Some experienced challenges coordinating training sessions given the administrative burden generated by the

pandemic. Some reported they could not implement online appointment booking fully as their administrative team was not able to do the full training. In other sites, staff did not receive training for reminders and messaging. Several reported that the videos were not helpful for many of their staff. One receptionist reported that while she found the video somewhat helpful, but it was better when the IT staff led them through it.

> *I think the OCEAN folks believe that the software is plug-and-play, but it's not. Our varied skill sets and comfort with new software is massive across the team, so added support will almost definitely be needed when we finally implement OAB.*
>
> Once all features are understood and leveraged it will be extremely beneficial, but until then it is a lot of work.

Several sites suggested they would have benefited from additional one-on-one support. Some wanted more technical support from OCEAN; a few purchased external support. Building schedules and creating e-forms were two areas in particular where sites felt they needed more support. One individual suggested that they would have benefited from having access to videos that guided clients through the steps to online appointment booking.

The Learning Curve

Several staff from participating organizations reported in the survey and case studies that implementing OCEAN was a "*big learning curve*" and that it was "*a challenge to deploy.*" These organizations' challenges were also observed by Alliance staff. Nonetheless, 60% of survey respondents reported that their organization had to *some or a great extent* a straightforward implementation. Nonetheless, about half (56%) reported that they to *some or a great extent* had sufficient on-site technical resources to implement OCEAN. However, approximately half reported experiencing some or great technical challenges and administrative burdens implementing OCEAN, with 9% and 19% respectively reporting a *great* burden (Figure 4).
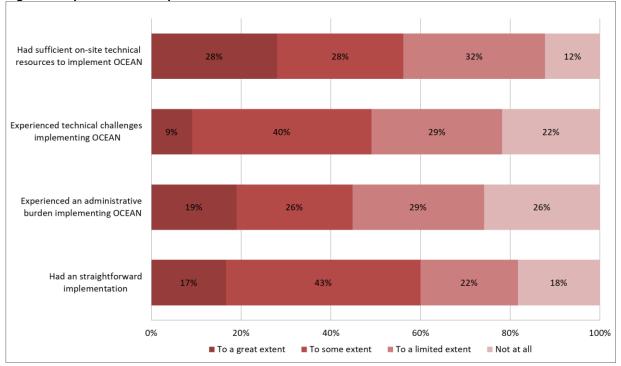
Figure 4. Experience with implementation

> *Despite the great efforts of the Alliance to provide training, implementing multiple OCEAN products simultaneously has been a challenge given this is extra work on the side of our desks.*
>
> *It was just a lot of information to digest, read, watch, and I am a team of one.*

The following are some of the challenges or technical glitches reported while deploying OCEAN, some of which have caused delays, including:

➢ Incompatibility between OCEAN and the Accuro EMR
➢ Incompatibility between OCEAN and Citrix
➢ Duplicate or indiscernible names/IDs (provider and clients) in Telus PS Suites
➢ Loss of configured booking sites
➢ Loss of programmed filters
➢ Providing access to individuals who are not clients or do not have an OHIP number
➢ Lack of knowledge of the full functionality of the platform

Regarding the usability of the OCEAN, approximately 60% of survey respondents reported they either *agreed or strongly agreed* that they easily learned how to use the OCEAN platform and found it to be a flexible technology to interact with. Half *agreed or strongly agreed* that the OCEAN was platform clear and easy to understand. About 5% of respondents *disagreed* with these statements. Approximately seven in ten respondents reported that they *agreed or strongly agreed* that they intend to use the OCEAN platform to its full potential and would recommend it to other providers (Figure 5). Based on the polls administered during the training webinars, three-quarters of respondents reported that the implementation of OCEAN on *to some or a great extent* gone smoothly.
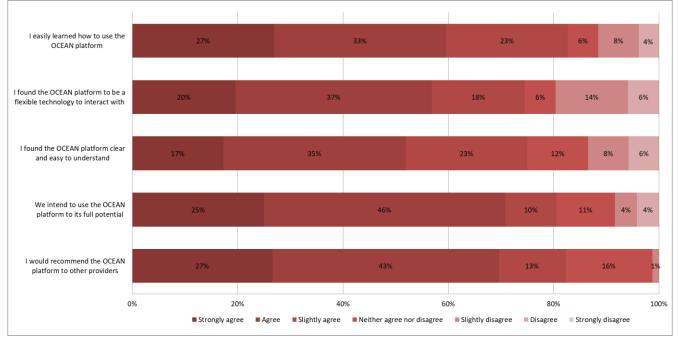
Figure 5. Experience with the OCEAN platform

Timing

Alliance staff observed willingness by many organizations to implement and use OCEAN and designated staff to work on it. However, setup is intensive and requires dedicated staff time. The five-month implementation and utilization timeframe was tight and put pressure on the sites. For many the timing of the rollout of OCEAN presented a number of challenges. "*The aggressive timeline to have things up and running put a lot of stress on the organizations.*" Participating organizations had faced capacity challenges throughout the Covid-19 pandemic. "*It was time consuming to familiarize ourselves with OCEAN. It requires time, that we quite frankly haven't had enough of in the past year.*" In addition, the OCEAN rollout commenced just before the holidays and the Covid-19 Omicron surge, both of which impacted client demand and organizational priorities and decreased capacity due to staff absenteeism. By March 2022, many sites had started using the platform and were working towards increasing use of its functions.

Change Management

Organizations experienced different levels of buy-in and acceptance of the introduction of the OCEAN platform among staff. Those who had used similar online tools in the past were more accepting. As organizations worked to set up the platform, several experienced provider resistance and their implementation was delayed or introduced on a pilot basis with a few providers, using a "*basic approach*." The greatest concerns among providers were whether they could maintain control over their schedules, clients would use the online system to book appropriate appointments, and other providers' clients would book with them. Many did not want their full schedule open to online booking.

Some participants have suggested that the implementation support should have included guidance and support with change management. Some administrative staff described the challenge and stress of promoting OCEAN to other staff members without sufficient support and backing. This was especially challenging in sites with limited human resource capacity, including those without dedicate IT support. Some worked with their providers to develop an incremental approach. Some started with particular types of appointments or with limited time periods for which online booking was available.

Those who took a concerted change management approach with their administrative staff and providers appeared to have done better. As an example, one organization spent the first month developing a rollout plan that included an implementation working group. A physician, nurse practitioner, dietitian and counselling lead was identified among early adopters who implemented online booking first. It "*took a while*," but the platform was launched in early February. The implementation working group will meet again to assess and improve the approach, and then other providers will be included. One organization reported that the "*key to success was to listen to providers and their concerns*." A few organizations that have struggled with staff resistance have sought outside change management support.
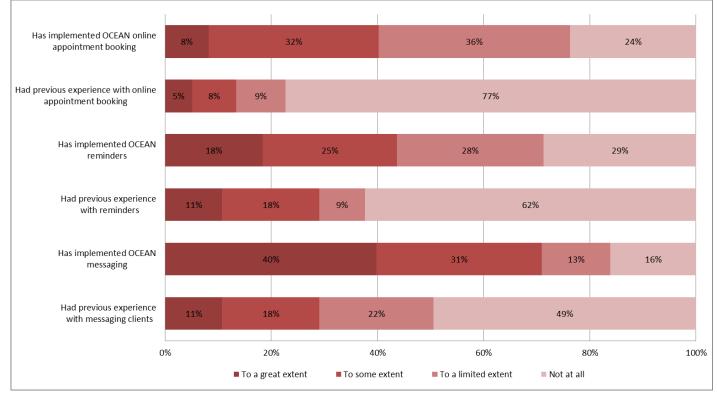
Deploying Online Appointment Booking, Reminders and Messaging

Features Implemented

Approximately three in ten survey respondents were in organizations that had previously used reminders and messaging to *some or a great extent;* 13% had used online appointment booking to *some or a great extent*. While about 70% had implemented messaging to *some or a great extent*, about 40% implemented online booking and/or reminders. Some organizations were more interested in messaging and reminders than online appointment booking. Approximately, one-quarter had not yet implemented online booking or reminders at all (Figure 6). As well, only 37% of respondents reported that their organization had set up online appointment booking schedules for all the licenses they held.

Figure 6. Extent of implementation of the OCEAN platform

	To a great extent	To some extent	To a limited extent	Not at all
Has implemented OCEAN online appointment booking	8%	32%	36%	24%
Had previous experience with online appointment booking	5%	8%	9%	77%
Has implemented OCEAN reminders	18%	25%	28%	29%
Had previous experience with reminders	11%	18%	9%	62%
Has implemented OCEAN messaging	40%	31%	13%	16%
Had previous experience with messaging clients	11%	18%	22%	49%

Functionality of Online Appointment Booking

The organizations that have implemented online appointment booking have applied the functionality and designed it in various ways. Approximately three-quarters of respondents reported that their organization offers online booking for in-person and virtual (video and/or telephone) appointments. However, only 55% indicated their organization offers online booking for both; 27% only offer virtual appointments only and 18% only offer in-person appointments. Most respondents reported that their organizations restrict how far in advance appointments can be made (Figure 7).

About seven in ten respondents reported that their organization allow clients to cancel and rebook appointments online or offers same day booking online; 56% allow clients without health cards to book appointments online. About three-quarters of these respondents reported that their organization provides reminders for all appointments booked online, half provide reminders for all appointments.

Figure 7. Functionality applied for online appointment booking

Functionality	Percentage
Restricts how far in advance appointments can be made	91%
Offers booking for virtual (video and/or telephone) appointments	78%
Allows clients to cancel and rebook appointments online	74%
Provides reminders for all appointments booked online	72%
Offers booking for in-person appointments	71%
Allows clients without health cards to book appointments	56%
Offers same day booking online	51%
Provides reminders for all appointments	50%
Set up online appointment booking schedules for all licenses	37%

Restrictions

One of the greatest learning curves and work intensity reported by participants was applying restrictions to the appointment schedules. Creating restrictions is complex and time consuming. They can restrict appointments by type of provider, type of service, and time and day of service. Part of the process was educating providers about restrictions and describing the ways in which they can limit client activity and ensure providers continued to have input on their schedule. In this way, administrative staff addressed providers concerns and scheduling preferences, and developed a system suited their organizations' needs. Restrictions have been applied in a number of different ways, as shown be the following examples.

Identified the most frequent reasons for appointments, coded many of these into the schedule and arranged booking around the reason for the visit. Clients were also encourages to provide additional information in the text box. Appointments were open for online booking based on provider availability and not blocked based on a day or time or type of appointment (phone and in person). These appointments were restricted to physicians and nurse practitioners linked to clients in the EMR. A limited number of virtual same day appointments were also offered. Appointments for allied health professionals in high demand were limited in frequency.

Used restrictions to allow online appointment booking for specific types of appointment types and during certain days and times.

Allowed only virtual and phone appointments to be booked online. Every provider made half their schedule available and identified when that would be. There was a lot of communication with providers to establish these parameters. Clients cannot book 48 hours in advance and can only book 30 days in advance. Appointments must be cancelled 24 hours in advance. There are currently no plans to open the system up to in-person visits. But, more timeslots are being considered.

Schedules for vaccine clinics were restricted by time, age and type of vaccine. There were not enough schedules for the unique types of clinics and their locations, and there were some challenges with similarities in clinic names.

Respondents reported that it was predominantly nurse practitioner appointments that could be booked online (84%). Over half reported that physician and registered nurse appointments can be booked online at their organization. Forty-eight percent indicated that online booking was used for vaccine clinics (Figure 8).
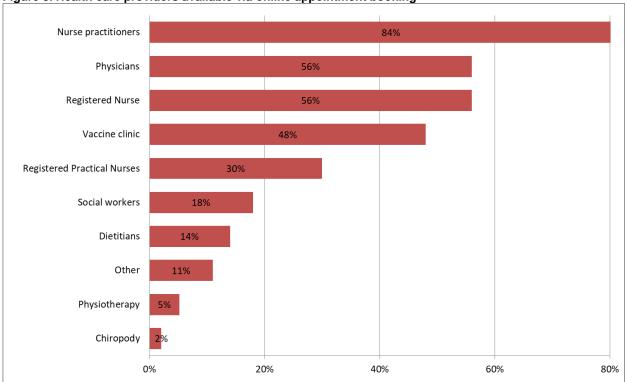
Figure 8. Health care providers available via online appointment booking

Provider	Percentage
Nurse practitioners	84%
Physicians	56%
Registered Nurse	56%
Vaccine clinic	48%
Registered Practical Nurses	30%
Social workers	18%
Dietitians	14%
Other	11%
Physiotherapy	5%
Chiropody	2%

Several organizations are "*still adapting the scheduling system to our clinic flow and scheduling process.*" Some outstanding challenges include developing schedules for allied health care providers versus physicians and nurse practitioners who have a field within the EMR that can be used as a restrictor and clients can be directed to book with their own primary care providers. However, the system cannot be programmed only for those clients who have been referred to book with an allied health professional. Some organizations reported challenges when they want to book differing lengths of appointments. As well, organizations that book clients with consecutive in-person appointments – e.g., with a nurse and then a nurse practitioner or physician – are experiencing challenges booking appropriately into both schedules and sending the appropriate reminder. One organization reported that they have not yet opened online appointment booking to their clients as there have been challenges fitting it into their current Covid-19 workflow. They intend to do so later.

Reminders

Reminders are working well in most organizations that are using them. Many are using them for all appointments, not just those booked online, for clients who have email or texting capabilities. Most are sent a day in advance, some two days.
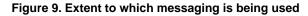
Staff like the function that allows clients to send a confirmation from the reminder, and that it is marked in the chart. Although, they would prefer that it was visible in OCEAN as well. However, many clients are not sending confirmations. One potential reason for this is that they need to enter their date of birth to confirm, an additional step that might deter responses. In addition, some organizations also allow clients to cancel and reschedule their appointment from a link in the reminder. Others require them to call to rebook the appointment.

There have been some challenges with the reminders. There were a few reports of reminders giving clients the wrong appointment time. "*On several occasions we have had clients call the office stating that the appointment time* [in the reminder] *did not match the appointment time written on their appointment card.*" As well, some organizations want reminder messages to be customized by provider, service type and appointment types (i.e., a distinction between video, phone, in-person). Some staff explained that when clients receive generic reminders some have showed up in-person for virtual appointment. One organization reported that it has experienced reduced use of reminders and messaging among staff when the site-wide license was exchanged for a more limited number of individual licences.

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Messaging

Messaging has had the greatest uptake to date. Several sites are currently only using messaging. Among organizations using it, approximately seven in ten respondents reported that it is being used to *some* or *a great extent* by participating providers (Figure 9).

Among those who use messaging, it is used for a variety of tasks, including sharing documents, sending lab requisitions, providers and receptionists communicating with clients, sending general information and notifications, sending custom forms for completion and providing referral information (Figure 10).
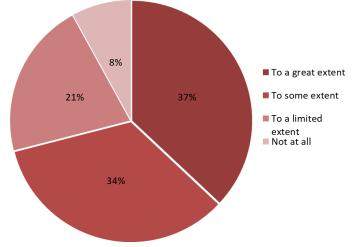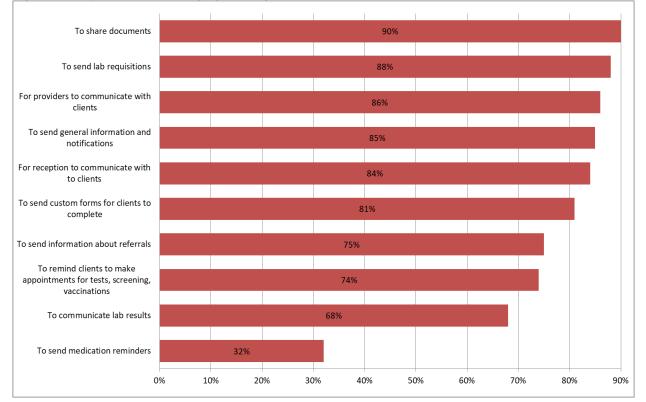
Figure 9. Extent to which messaging is being used

- To a great extent — 37%
- To some extent — 34%
- To a limited extent — 21%
- Not at all — 8%

Figure 10. Ways in which messaging is being applied

Way messaging is applied	Percentage
To share documents	90%
To send lab requisitions	88%
For providers to communicate with clients	86%
To send general information and notifications	85%
For reception to communicate with to clients	84%
To send custom forms for clients to complete	81%
To send information about referrals	75%
To remind clients to make appointments for tests, screening, vaccinations	74%
To communicate lab results	68%
To send medication reminders	32%

Based on the case studies, messaging is a welcome addition to the organization, and those using it appreciate that it is secure and saves time. Some prefer it to the less secure system in PS Suites. Staff also like getting notification when message is received by the client. They reported use similar to that show in Figure 10. There has been positive feedback from clients and more staff want access to use it.

> *This is the missing piece of the puzzle.*
>
> *We use it more than OAB.*
>
> *There is high demand for providers using it. They love it.*
>
> *We have used OCEAN messaging to connect with an ample amount of our patient population, it is effective and efficient.*
>
> *The clinicians were excited about the online messaging/sending forms, etc. and those that used the service liked it.*

Some limitations with messaging were discussed. The main limitation is that messaging does not allow for a dialogue with the client. The provider can allow the client to respond to the outbound message, but needs to create another message to reply. As well, clients cannot initiate messages. Some providers also reported a delay in the messaging being received when sent during a virtual appointment to discuss together. They would also like the body of the message to be logged in the clients' chart.

Some organizations also reported that they like (or would like) to use messaging to send out bulk messaging. However, the number of messages sent out at one time is limited to 100, which is a challenge for sites with over 1,000 clients. Also, some are experiencing challenges sending messages to a specific group of clients and are finding clients not selected are being included.

Many of the organizations employing reminders and messaging discussed the labour intensive work required to clean up client contact information, get consent to contact the client, ensure their email and consent are on file, differentiate between the landline and mobile phone in the chart, identify and remove duplicates, and create charts with details for non-clients (e.g., vaccine clinics). They also identified cost as a limitation if they use texts rather than emails for reminders and messaging.

Most organizations using messaging use it to send clients forms to complete and find this a useful process, especially when the information is automatically populated into the chart. However, they have experienced a number of limitations with this activity. They find it challenging that clients can only respond to the message in text and cannot respond and attach the completed attachment. They either have to fax or mail it back. "*It would really help if OCEAN allowed the client to forward us documents when responding to a secure message. Right now, we are only able to send a secure attachment/document for the client's completion but are unable to receive it back from them through OCEAN.*"

Some have started to use the OCEAN application where clients can use the website to attach the completed forms. Some are experiencing challenges with this and find it "a little clunky." Organizations can also build OCEAN e-forms online. But they reported that it takes a lot of time to build on the forms and some have experienced challenges with the functionality when creating forms. While the forms can be loaded into the client's chart, there is no "select all", they need to be imported individually. This created a challenge for the vaccine clinic appointments. Additionally, clients who are not in the system (e.g., vaccine clinic consent forms, no OHIP number) cannot complete forms.

Implementation Approach

Stepped Implementation

Most participating organizations are still in early stages of implementation. Given the timelines and change management requirements, most took a stepped and "*cautious*" approach whereby they introduced one component of the functionality first and/or introduced only select appointment or provider types. Many initially introduced online appointment booking only for Covid-19 vaccine clinics, walk-in clinics, a limited number of providers, or certain services, conditions and procedures. Some sites have limited online booking only to virtual visits as they want to continue to triage in-person visits due to Covid-19 requirements and the complexity of their clients. Several commenced mainly with messaging or reminders.

We are doing a slow rollout of online appointment booking. We started with our COVID vaccine appointments and shortly will offer the option to book online for phone appointments with primary care providers.

Took a cautious approach to implementing online booking. We slowly integrated online booking in a soft launch approach and continue to increase the marketing of the service.

Online appointment booking feature for only a few departments of our clinic as a pilot phase, and then expand it to all our providers.

We started initiating OCEAN through phases. We managed to implement the messaging and reminders functionalities individually and train our staff on them.

Based on the case studies, Table 4 provides some examples of how sites rolled out OCEAN.

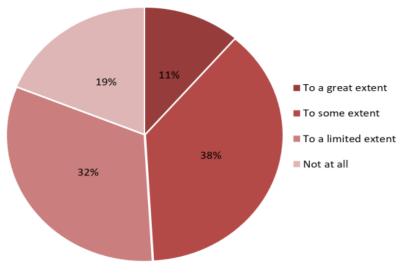**Table 4. Examples of application of the OCEAN platform**

Online appointment booking	Reminders	Messaging
a) Started with online booking for vaccine clinics, and then offered appointments for same day appointments and laboratory tests	Offered reminders for appointments booked for providers with licences whether booked online or not	Used extensively by reception and as many providers as the licence allows, including to send lab requisitions, test results, provider communication to clients
b) First offered appointments for physicians and nurse practitioners and progressively added other providers	Offered reminders for all visits types whether booked online or not	Used for clients in the system, including to send forms for completion
c) Started with online booking for vaccine clinics, and then offered appointments for laboratory tests and other procedures. Plan to introduce for some allied providers	Reminders are sent two days in advance for the vaccine clinic. Clients were called a day in advance if they did not confirm they were received. They are also sent for lab work and procedures	Not currently used
d) Started with online booking for vaccine clinics, and then offered appointments for nurse practitioner outreach services	First tested reminders for certain providers and appointment types. Offered reminders for clinical appointments whether booked online or not. Reminders are sent the morning before the day of the appointment	Used extensively by reception and providers, including for form completion, cancer screening and vaccination reminders, consent, lab requisitions and results, sending Zoom links
e) Started offering telephone and virtual appointments with seven providers/ schedules, then added four allied professionals. Plan to include another two providers.	Not using them yet. Will introduce later	Used extensively by reception and providers to communicate with clients and send requisitions and letters, information about referrals and appointments, often with instructions and forms to complete
f) Started with nine providers half a day a week for telephone and virtual appointments only. Then added a nursing clinic one day a week and breastfeeding clinic twice a week	Not using them. Plan to introduce for nursing clinic.	Used by reception and providers, including for communicating with clients, and sending lab requisitions and requests for clients to make an appointment or complete a form

Communication Strategies

Half of the organization survey respondents reported that their site had to *some or a great extent* planned or implemented a communication strategy to inform clients about the implementation of OCEAN (Figure 11).

The way in which online booking was promoted to clients differed by organization. Some developed comprehensive communication plans with extensive coverage, while others undertook a more limited communication strategy. The following are some examples:

Figure 11. Extent to which organizations have implemented a communication strategy

- 11% To a great extent
- 38% To some extent
- 32% To a limited extent
- 19% Not at all

- ➤ Advertised on the website and TV screen in reception
- ➤ Reception and providers promoted it during in-person visits or over the phone
- ➤ Planning an email campaign
- ➤ Developed a communication plan
- ➤ Section on the webpage regarding types of visits available via online booking; need to login with client information
- ➤ Media release
- ➤ TV screen in reception for a month
- ➤ Postcard
- ➤ Link to online booking on the website
- ➤ Email sent to clinical clients
- ➤ Link to online booking on the website
- ➤ Sent OCEAN message/email with link to online booking
- ➤ Advertised via social media
- ➤ Targeted email to those with a physician or nurse practitioner identified in the EMR
- ➤ Link to online booking on the website
- ➤ Email with link to online booking sent to clients with an email on file
- ➤ Advised of the service during telephone calls

Online Appointment Booking Utilization

The number of providers offering online appointment booking rose from 33 in December 2012 to 203 in March 2022. A total of 3,325 appointments were booked online during that time period, with a high volume of the early appointments being for vaccine clinics. Between 3% and 8% of clients with access to online appointments booked in those four months, with an average of 1.5 appointments per client.

Table 5. Providers offering online appointment booking services and clients served

	Metric	December 2021	January 2022	February 2022	March 2022
Availability and access	Total # of providers offering online appointment booking (OAB) (cumulative)[2]	33	52	90	203
	Total # of unique clients with access to book appointments online (cumulative)[3]	17,570	25,366	42,682	68,309
Clients served	Total # of unique clients who have booked an appointment (cumulative)	16,076	29,155	34,948	48,190
	Total # of unique clients served who have booked an appointment online (cumulative)	1,156	1,916	2,027	2,262
Booked appointments	Total # of appointments booked (monthly)	33,883	41,162	39,319	57,995
	Total # of appointments booked online (monthly)	1,365	855	226	879
No-shows	Total # of no-shows (monthly)	1,382	1,572	1,460	2,077
	Total # of no-shows where the appointment was booked online (monthly)	70	17	11	7

Nearly two-thirds of the staff respondents reported that clients at their organization were to *some or a great extent* selecting appropriate appointment types and 44% reported that to *some or a great extent* the appointments made available online were being booked by clients. Over two-thirds of respondents reported that, where offered, clients were to *some or a great extent* cancelling and rebooking appointments online (Figure 12).

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[2] Count the number of schedules that were set up and offering online booking each month, numbers for January should include those set up in December and January, February would include those set up in Dec, Jan and Feb.

[3] This should be the best estimate of clients who have access to online booking, if only 1 or 2 schedules are created it would be the clients that would be expected to book into those schedules (e.g. the number of clients in the EMR for those providers), if all clinical schedules are open for online booking then it would be all active clinical clients etc. The number should be increased each month if/when new schedules are opened up for online booking.
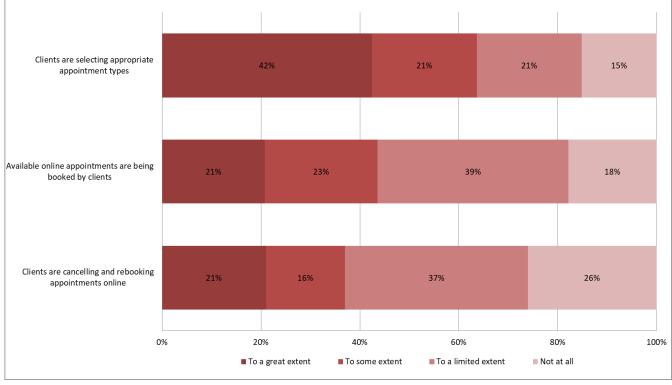
Figure 12. Extent of client utilization of online appointment booking functions

Several staff participating in the case studies reported that they are observing increased uptake of online booking. Clients were generally reported to be booking appointments appropriately. Many early booking errors related to the way in which the restrictions were set up and limitations or glitches in the OCEAN program. One site reported that they had a few instances where clients called after booking to make sure the appointments had in fact been booked. As well, several sites initially opened online booking only for physicians or nurse practitioners – providers with a dedicated field as primary care provider in the EMR – and clients booking online can be directed to their schedule. Managing bookings for allied health providers is more challenging because they are not linked to clients in the same way in the EMR. More restrictions are required to ensure only eligible clients book appointments and at the stipulated frequency. There are few cases reported of clients booking inappropriately. Some sites have included screening questions or explanations for what types of appointments can be booked. One challenge experienced by providers is that the reason for the visit indicated by clients while booking online does not show up in the schedule in the way it does when booked through reception. It only shows up once the chart is opened. Clients also complain that there is not enough space online to fully articulate the reason for the visit.
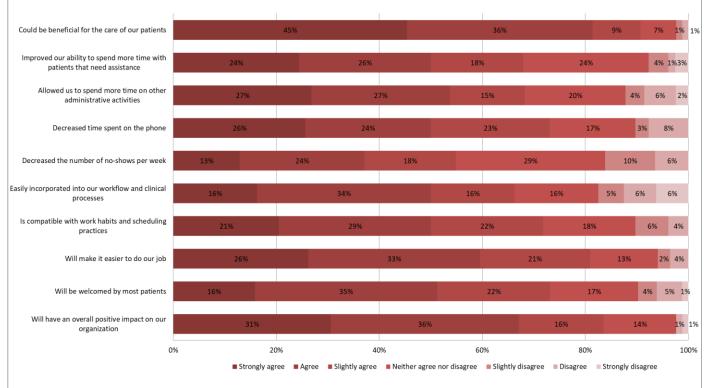
Organizational Impact

> *I do want to give this application some time as I do believe it will be beneficial to our clients, as well as our staff.*

Eight in ten respondents *agreed or strongly agreed* that using the OCEAN online appointment booking, reminders and messaging system could be beneficial for the care of their clients, and half *agreed or strongly agreed* that it will be welcomed by most.

Two-thirds *agreed or strongly agreed* that the OCEAN platform will have an overall positive impact on their organization, and 60% that it will make it easier to do their job. Approximately half *agreed or strongly agreed* that it has decreased time spent on the phone; allowed them to spend more time on other administrative activities; is compatible with work habits and scheduling practices; was easily incorporated into workflow and clinical processes; and improved their ability to spend more time with clients who need assistance (Figure 13).
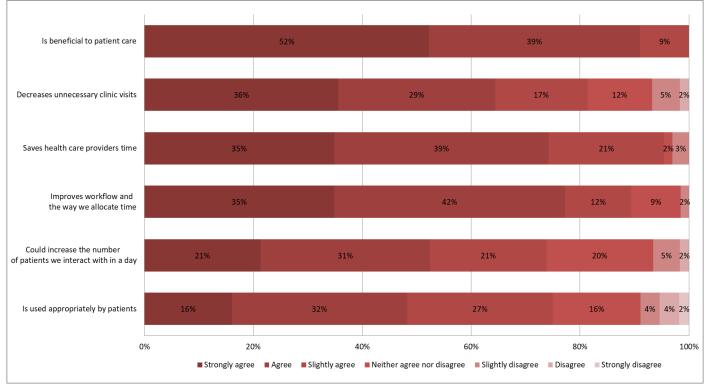
Figure 13. Impact of the OCEAN platform

Most organizations reported that it was too early to determine whether reminders were reducing the no-show rate. However, 37% of survey respondents reported that they *agreed or strongly agreed* that implementing OCEAN has decreased the number of no-shows per week (Figure 13). Based on Table 5, no-show rates were lower among clients those who booked online compared to those who did not (3% versus 4%). Some of the staff in the case studies either observed fewer missed appointments when reminders were used or did not observe increases when telephone reminders were stopped. Those using online booking for Covid-19 vaccinations reported a higher rate of no-shows and cancellations. As well, some organizations have observed increased missed appointments with the reduction in Covid-19 restrictions. The methods by which clients receive reminders may also have an impact. According to one provider, "*most of the no-show appointments that I encounter are in complex patients who frequently struggle with having access to an Internet connection and…checking their email on a regular basis. They would be better served by text message reminders on their cell phone.*"

> *Our organization has utilized the OCEAN messaging function to connect with thousands of patients*

Specifically related to messaging, 91% of respondents *agreed or strongly agreed* that messaging was beneficial to client care. Approximately, three-quarters *agreed or strongly agreed* that it improved workflow and the way they allocate time, and that it saved health care providers' time. Two-thirds *agreed or strongly agreed* that messaging decreased unnecessary clinic visits. Half *agreed or strongly agreed* that messaging could increase the number of clients seen in a day and that it is used appropriately by clients (Figure 14). (Note, clients are unable to initiate messaging, and the provider has the ability to determine whether or not they can respond to a message).

17

Figure 14. Impact of messaging

Overall, 17% of survey respondents were *very satisfied* and 52% were *satisfied* with using/administering OCEAN online appointment booking, reminders and messaging. None were *very dissatisfied* (Figure 15).

Figure 15. Overall satisfaction with the OCEAN online appointment booking, reminders and messaging

Compared to online appointment booking and reminders, a greater proportion of survey respondents believe that messaging is *most* important for their organization (47%) and improving the client experience (49%). Approximately, one-third believed online booking was *most* important for their organization and improving client experience. Most reported that either messaging (43%) or reminders (40%) saved the *most* time (Figure 16).

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Figure 16. Reported importance of OCEAN functionality

Based on the case studies and qualitative survey results, staff are generally satisfied with the OCEAN online appointment booking, reminder and messaging platform. Reception especially appreciates it and some believe it is starting to save time, especially where reminders are being used extensively in place of reminder telephone calls. Online booking for Covid-19 vaccinations saved receptionists' time collecting the required information, especially from non-clients. Many of the clinical providers do not see a difference in this regard as the implementation and subsequent booking processes are not evident to them. The receptionists and providers who are using secure messaging are generally very satisfied with it and feel it allows for greater speed of client contact and efficiency, and many are using it extensively.

> *The staff who are currently using it have positive things to say.*
>
> *I would say that for OCEAN booking, reminders and messaging, the group of employees that will find the most time savings are administrative staff i.e., MOAs. I don't see this saving too much time for primary care providers, aside from being able to send a message rather than call a patient with follow up information….*
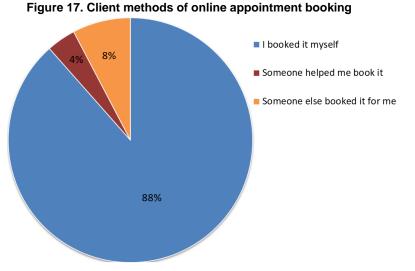>
> *OCEAN [messaging] has quickly become a reliable resource for our organization….*
>
> *The messaging piece is a time saver, but the reminders for appointments have been bit of a bumpy road.*
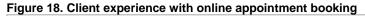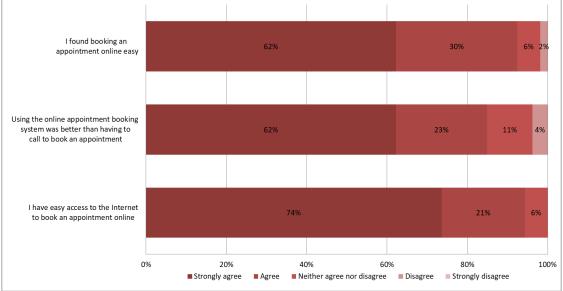
Client Experience

Among the clients who had recently used the online booking system and responded to the survey, most (88%) booked the online appointment themselves. The remainder had someone help them or book it for them (Figure 17). Similar to the respondents to the survey, case study sites reported that females were more likely than males to have used online booking. Generally, the age distribution of the client users tended to relate to that of the organization.

Most (92%) client respondents *agreed or strongly agreed* that they found booking an appointment online to be easy. As well, most (85%) *agreed or strongly agreed* that using the online booking system was better than having to call to book an appointment. However, 15% *disagreed or strongly disagreed,* potentially preferring to speak with a receptionist when making an appointment. These early users of online booking reported easy access to the Internet to book an appointment (Figure 18).

Figure 17. Client methods of online appointment booking

- I booked it myself
- Someone helped me book it
- Someone else booked it for me

Figure 18. Client experience with online appointment booking

| | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |

Most client respondents reported that the online appointment booking system allowed them to select a time that was convenient and to remember to keep their appointment(s) (82%). Just under half (45%) reported that the system allowed them to make changes to their appointments. One-quarter reported that it allowed them to have a family member or caregiver book an appointment on their behalf (Figure 19).

Figure 19. Client experience with online appointment booking

In the client surveys and case studies, clients and staff generally reported that clients appreciated online appointment booking. Some organizations reported that they have had a positive response and that many clients prefer the online opt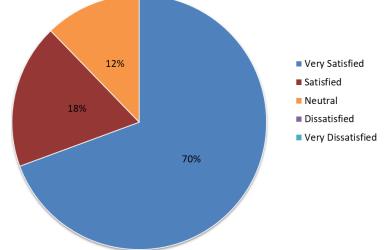ion. "*They are using it and finding it effective for them to use.*" Nonetheless, as also shown in the survey results, there are some clients who are uncomfortable with online technology and prefer to talk directly to a receptionist who they know. "*I think it is a good option for some but feel it takes away the personal connection we have with clients.*"

Figure 20. Client satisfaction with online appointment booking

Most (70%) clients were *very satisfied* with online appointment booking; 18% were *satisfied* and 12% were *neutral*. None were *dissatisfied* (Figure 20).

Many staff reported that there had been "*no complaints.*" "*All in all, more excitement than complaints.*" According to one client, it was "*over and above my expectations.*" Another reported finding the OCEAN booking site easier to navigate than others they had used. The following are their suggested improvements, although these options are available at some sites:

✓ Add reminders
✓ Add the option to add the appointment directly to their computer/online calendar
✓ Add more space in the text section to describe the reason for the appointment
✓ Offer in-person, as well as virtual appointments
✓ Offer same-day appointments
✓ Have better access to the link to the platform on the organization's website
✓ Include referral notification via email/messaging

Several organizations reported that they have not had to support many of their clients with the technology and that uptake has generally been good. "*We have a diverse population and they have booked.*" Others expressed concern that some clients have an advantage in access over others, including those who are more technically savvy. Digital inequity was identified as a barrier to access, especially in rural and peri-urban areas where many have poor or no Internet services. As well, some clients do not have a computer and can only access the Internet through a public facility, while others do not have a mobile phone and may only be accessible via email.

We will need to take some time to figure out how to allow clients to book in a way that will reach the most vulnerable of our clients and not give a further advantage to clients who are capable of advocating for themselves and accessing care. The population we serve is very marginalized and don't necessarily have the technology available to be able to do online bookings (high homeless, newcomer, refugee, substance-using, mentally-ill population).

Language barriers were also reported as OCEAN is only available in English.

Most of our clients do not speak English and difficult to maneuver with technical skills online.

For many clients in our community with language or technology barriers, online booking will need to be balanced with other access options.

Most important challenge for us was the French, we are a francophone CHC.

Lessons Learned

Overall Experience

Overall, the implementation of OCEAN at Alliance member sites went well. Several of the organizations had previously used reminders and messaging, and a few had used online appointment booking. Most staff administering and using the system are satisfied and believe that it will improve clinical processes and client care. Many sites reported a straightforward implementation and found OCEAN easy to learn and understand. Nonetheless, for most participants, implementation was a steep learning curve and many sites struggled; about half experienced technical challenges, administrative burden and insufficient one-site technical resources.

Participating organizations were also challenged by the tight timelines which, after two years of the Covid-19 pandemic, coincided with the first Omicron wave and the holiday season. Many faced higher client demand and staff shortages, concurrent with the need to dedicate staff time to OCEAN training and implementation.

Support and Training

The online training sessions were well-attended and attendees were generally satisfied with them, as well as the one-on-one support provided by the Alliance. However, some found the training webinars "unclear," "disjointed" "confusing" and "hard to follow." Many were unable to fully apply the learning from the webinars. For some, video training formats are not ideal, especially if not accompanied by a printed or electronic manual for ease of reference and review (e.g., with step-by-step instructions, screen shots, pictures and a table of contents/index). Participants also appreciated the later Q&A online support sessions provided by the Alliance and the proportion that "*to a great extent*" felt confident that they could apply the information presented increased over time. Some sites would have liked more one-on-one and group support, including opportunities for sharing learnings among sites or being paired for mutual support.

Change management

Participating organizations met with different levels of buy-in and acceptance from administrative and clinical staff, including provider concerns about maintaining control over their schedules. This resistance resulted in a slower or a more limited rollout at some sites. Those who took a concerted change management approach with their staff – or even formed implementation working groups – appeared to have had greater success. As well, some staff leading implementation would have benefited from greater support and backing from their organization and/or the sector to effectively promote the new technology to the rest of the staff, especially in sites without dedicated IT and change management human resources.

Different Approaches to Implementation

Participating organizations applied several different approaches to implementation, which reflected their needs, staff preferences and capacity. About 70% implemented messaging and 40% implemented online booking and/or reminders to at least "*some extent*." Given the timelines, change management requirements and organizational capacity, most took a stepped approach to applying OCEAN. Some introduced only one component of the functionality. Others offered online booking only for certain types of appointments (e.g., Covid-19 vaccine clinics, laboratory, specific programs); certain providers (e.g., primary care providers only) or visit method (e.g., some offer only virtual or in-person visits).

Applying restrictions to the appointment schedules was one of the greatest learning curves; it was complex and time intensive. While clients can be linked to their primary care provider to make an appointment, managing bookings for allied health providers is more challenging because they are not linked to clients in the same way. More effort and restrictions are required to ensure only eligible clients book appointments and at the stipulated frequency. Educating providers about restrictions and describing the ways in which they can limit client booking activity was an important part of the process and addressing their scheduling and workflow preferences.

Clients are generally booking the timeslots made available online and booking appropriately. Several sites have taken steps to guide clients through the booking process, including screening questions and explanations about what types of appointments can be booked. However, the functionality limits the ability of the provider to see the

reason for the visit provided by the client, and there is insufficient space online for the client to fully articulate the reason for the visit.

Use of Reminders and Messaging

Several organizations are using reminders for appointments booked online; some are using it for all appointments. As well, many allow clients to cancel and rebook appointments online, often via a link in the reminder. There have been some technical challenges with reminders, including: the need for data cleaning and collection to ensure accurate client contact information; incorrect times and dates being sent; a desire to have more tailored versus generic text in the reminders; and many clients not sending confirmations. While it may be too soon to determine whether reminders were reducing the no-show rate, the administrative data show a small decrease and four in ten survey respondents *agreed or strongly agreed* that implementing OCEAN had decreased no-show rates.

Messaging has had the greatest uptake to date. Several sites are currently only using messaging. Organizational staff appreciate messaging, and are using it extensively and in many ways. Most believe that it is beneficial to patient care and has improved the speed of client contact, workflow and efficiency. Many also believe it could decrease unnecessary clinic visits and increase the number of clients seen in a day. The main challenge with messaging is that it only allows for one message to and from the client at a time and clients cannot initiate it, limiting the ability to easily have a dialogue. Other challenges to be addressed include delayed receipt of messages, desire to log the body of the message into the clients' chart, improving the online form completion functions, and increasing capacity to send a greater volume of bulk messages.

Organizational Impact

Staff are generally satisfied with the OCEAN online appointment booking, reminder and messaging platform. Most agree that using OCEAN would be beneficial for the care of their patients. Many believe it has had a positive impact on their organization, including making it easier to do their job, improving workflow and saving time. Reception especially appreciates it and reports time saving, especially where reminders have replaced reminder telephone calls.

Compared to online appointment booking and reminders, a greater proportion of staff believe that messaging is *most* important for their organization and improving the client experience. Approximately the same proportion believe messaging and reminders save the *most* time.

Client Experience

The uptake of online booking has varied across sites. It was promoted to clients using several different methods. About half the sites planned or implemented a communication strategy. Some implemented comprehensive communication plans, while others undertook a more limited communication strategy or "soft launch."

Most clients were satisfied with the service; none were dissatisfied. Most book appointments online themselves and females were more likely than males to have used it. Most clients reported that it was easy to book an appointment online at a time convenient to them and that the system helped them remember their appointments. Many preferred it to calling to book an appointment, although some still prefer to call and speak with a receptionist.

Clients requested access to more options on the platform, including access more appointment types and greater functionality (e.g., more text space, reminders and the ability to put the appointment directly into their calendar).

While the uptake has generally been good, several organizations expressed concern about equity of access. They identified language barriers given OCEAN is only available in English, and barriers experienced by the marginalized populations they serve. Digital inequity is a barrier to clients who do not have a mobile phone or computer and for those with poor or no Internet services, especially in rural and peri-urban areas.

Appendix 1. Evaluation Framework

Evaluation Objectives

1. *Describe the implementation of messaging, reminders and online appointment booking at Alliance member centres*

2. *Identify effective implementation strategies for, and challenges in, implementing messaging, reminders and online appointment booking, as well as areas for improvement*

3. *Provide a preliminary description of impact on organizations and clients*

Potential Evaluation Questions, Indicators and Sources

Evaluation questions	Indicators	Source
The Alliance		
What was the implementation process? How was the program rolled out? What supported and what hindered implementation? What could have been done differently to achieve greater success?	-Funding and resources -Planning -Implementation timeframe -Communication strategy with member centres -# and type of implementation resources -# of training sessions held -# attending training sessions -# of support sessions held - # attending support sessions -Alliance staff experience	Alliance data Interviews and documentation from Alliance staff

How do organizations/providers perceive the technology?	-Perceived ease of use (PEOU)
	    Ease in learning how to use system
	    Ease of administration
	    Flexibility of the technology
	    Clear and easy to understand
	    Intent to use to full potential
	    Intent to recommend to other providers	

Participating Member Organizations Implementation and Uptake		
Implementation What supported and what hindered implementation? What could have been done differently to achieve greater success? What resources (i.e., technical, human resources) were required and were they sufficient? How has the technology been communicated to clients? To what extent are they aware of the services?	-Site previous experience with messaging, reminders and OAB -Extent support to the organizational -Participant experience/satisfaction with online support -Technical resources required -Technical challenges experienced -Administrative burden experienced -Education (change management process) -Type of tech challenges -Communication strategy and methods -Client awareness of the service	Administrator/provider surveys Surveys (webinars and CoP) Case studies (site administrative information; administrator and provider focus groups)

Evaluation questions	Indicators	Source
Uptake What was the uptake of OAB by Alliance members? What was the uptake of offering: i) messaging, ii) reminders and iii) online booking? How are appointments made? What are the appointment-making rules?	-# of sites registered -# of licenses -# of sites that dropped out -# of sites offering i) messaging, ii) reminders and iii) online booking -Type of providers with whom appointments can be booked -Offers same day booking online -Allows clients without health cards to book appointments -Booking for virtual (video and/or telephone) appointments available -Restricts how far in advance appointments can be made -Allows clients to cancel and rebook appointments online -Extent to which available online appointments are being booked by clients -Extent to which client are booking appropriate appointment types -Extent to clients are cancelling and rebooking appointments online -Cancellation policy -Alignment with provider scheduling preferences	Alliance administrative data Administrator/provider surveys Case studies (site administrative information; administrator and provider focus groups/interviews)
How are reminders used?	-Provides reminders for all appointments booked online -Offers the ability to schedule or rebook appointments directly from the reminders	
How is messaging used?	-How messaging is applied/used -Extent to which messaging is being used by participating providers -Offers direct messaging to individual clients related to their care -Allows for document/report sharing in the messaging -Sends custom forms to clients to be completed -Allows clients to respond to messaging -Extent to which the content of messaging is integrated into the EMR	
Organizational and Client Impact		

Impact on the organization
 	
What is the impact of OAB, reminders and/or messaging on the organization?
	-Perceived usefulness (PU)
	  Beneficial for the care of our clients
	  Time with clients
	  Time for other administrative activities
	  Time spent on the phone
	  No shows
	  Easily incorporated into workflow and clinical processes
	  Compatible with work habits and scheduling practices
	  Easier to do the job
	  Welcomed by most clients
	  Overall impact on our organization
		Administrator/provider surveys
		
		Case studies (administrator and provider focus groups/interviews)

Evaluation questions	Indicators	Source
	Reminders impact on: No-show rates Cancellation and rebooking rates *Messaging impact on:* Client care Unnecessary clinic visits Providers' time Workflow and time allocation Clients interacted with in a day -Administrator and provider experience/ satisfaction	
What is the impact of OAB and messaging on provider experience? How can it be improved?		
Impact on the client care What are the characteristics of client users? What is the impact of OAB, reminders and messaging on client experience? How can it be improved?	-Client user profile (demographics) -Access to the internet -Equity of access and use -Ease of use -Preference of verbal versus online appointment making -Time saving - Can select a convenient time - Remember to keep appointment(s) - Can make changes to appointment(s) - Can have a family/caregiver book an appointment -Shorter wait times for appointments -Overall satisfaction	Administrator/provider surveys Case studies (provider focus groups/interviews and client surveys and focus groups)

Appendix 2. Organizational Survey Respondents

Table 6. Number of organizations responding to the survey (N=101)

Organization	N
Access Alliance	1
Carlington Community Health Centre	3
Centre de santé communautaire de l'Estrie	2
Centre Francophone du Grand Toronto	1
Centretown Community Health Centre	1
Chatham Kent Community Health Centre	7
Community Health Centres of Northumberland	2
Compass Community Health	3
De dwa da dehs nye>s	3
East End CHC	1
Équipe de santé familiale communautaire de l'est d'Ottawa	1
Grand Bend Area Community Health Centre	1
Guelph Community Health Centre	8
Hamilton Urban Core Community Health Centre	1
Harrow Family Health Team	1
HF Connecting Health Nurse Practtioner-Led Clinic	7
LAMP Community Health Centre	1
Leeds & Grenville Community Family Health Teamn	1
Mamaway Wiidokdaadwin Primary Health Care Team	2
Mary Berglund Community Health Centre Hub	4
Mino M'shki-ki Indigenous Health Team	1
North Lambton Community Health Centre	5
North Muskoka Nurse Practtioner-Led Clinic	1
Parkdale Queen West Community Health Centre	1
Planned Parenthood Toronto	5
Regent Park Community Health Centre	5
Scarborough Centre for Healthy Communities	1
Somerset West Community Health Centre	7
South East Ottawa Community Health Centre	8
Stonegate Community Health Centre	1
Tsi Kanonhkhwatsheríyo	1
Vaughan Community Health Centre	6
Vibrant Healthcare Alliance	4
Windsor Family Health Team	2
Women's Health in Women's Hands Community Health Centre	1
Unknown	1