CASE STUDY

Somerset NHS Foundation Trust delivers a positive patient experience and reduces booking workload with an AI-driven Virtual Assistant

Results (June 2022)

700+
conversations per month

£456,000
potential savings/ year

24 hours
staff time saved every week

86%
of patients rated “like” or “neutral”

14.6%
adoption rate

Overview

Somerset NHS Foundation Trust (FT) Outpatients Department managed 554,964 appointments in 2020-21 and while appointment volumes (and booking administration workload) usually increase year on year, the COVID pandemic has temporarily reversed this pattern with activity dropping by about 23,000 appointments[1].

This has caused a massive appointment backlog, so the adoption of digital tools that maximise booking efficiency and minimise lost appointments are crucial at this time.

Patients are ready to take on digital tools for healthcare

Patients are used to managing their schedules using digital tools in other areas of their lives, so it is not surprising that patient-led booking is quickly becoming an expectation from patients in healthcare[2].

Somerset FT partnered with Servelec and EBO to deploy an AI-powered Virtual Assistant to take on some of their booking workload, while still providing a very positive and personal experience for patients. A 12-week pilot showed positive patient feedback and a reduction in staff workload. Since then, the Virtual Assistant has gone from strength to strength, maximising booking efficiency, saving valuable resources and reducing costs.

> **The experience of working with EBO on the Virtual Agent has been very positive. EBO and Servelec heard our concerns and helped design AI solutions that benefit our patients by providing an alternate way they interact with the Trust.**
>
> – James Marriott, Digital Change Manager at Somerset NHS Foundation Trust

Improving administrative processes and patient experience with highly personalised AI Virtual Assistants

Patient-led management of outpatient appointments

Somerset FT's Virtual Assistant, "Alex" was designed closely with the Trust to ensure that the language and personality used were in keeping with their branding and culture. They wanted to provide a patient-led appointment management experience that would empower patients to engage with their care and manage their own care journeys.

They wanted a digital solution that was easy to use, yet still felt personal, empathic and engaging, and that improved access by being available 24 hours a day, every day.

The goal of the project was to:

1. **Provide a digital alternative to telephone booking that delivers the same positive patient experience**
2. **Reduce the pressure on administrative teams by moving some of the booking workload to the VA**
3. **Reduce temporary booking workforce costs**

System Integration

The EBO VA deployed for this pilot is fully integrated with the Rio (Servelec) Electronic Patient Records (EPR) and can retrieve and write back information into it. However, the **EBO VA solution is system agnostic and can integrate with any EPR or system using APIs.**

Lifelong learning with specialist support

EBO's VA has unique continuous improvement capabilities. The AI element (NLP, language recognition and machine learning) provide the VA with the ability to learn how to understand questions and provide the correct answers as more and more patients interact with it.

This is complemented by the ongoing service from EBO, whereby specialist dialogue consultants monitor the effectiveness of the VA and create new dialogues when performance improvements are required.

Virtual Assistants get better over time.

Ten dialogues were deployed at the beginning of the pilot and an additional three were added during the pilot as part of this continuous improvement process. This meant the VA was able to handle a greater variety of enquiries from patients.

Increase patient satisfaction, and save valuable resources, with an automated, personalised AI Virtual Assistant.

CONTACT US

Virtual Assistants drive patient engagement

Virtual Assistants (VAs) help patients get tasks done by processing human inputs using Artificial Intelligence (AI) and automating tasks, previously only executed by humans[3]. They use semantic and deep learning, such as deep neural networks, natural language processing (NLP), prediction models and personalisation, to perform actions correctly[3].

Multi-channel capability means that apart from being available on the Trust's website, it can also be deployed across any platform including Twitter, Facebook Messenger, Slack, Telegram and even Alexa.

It converses with patients intelligently; it understands, simulates, and reacts to human emotions empathically while helping them:

- view appointment information
- find their way to the clinic
- manage their booking, or
- complete an assessment remotely.

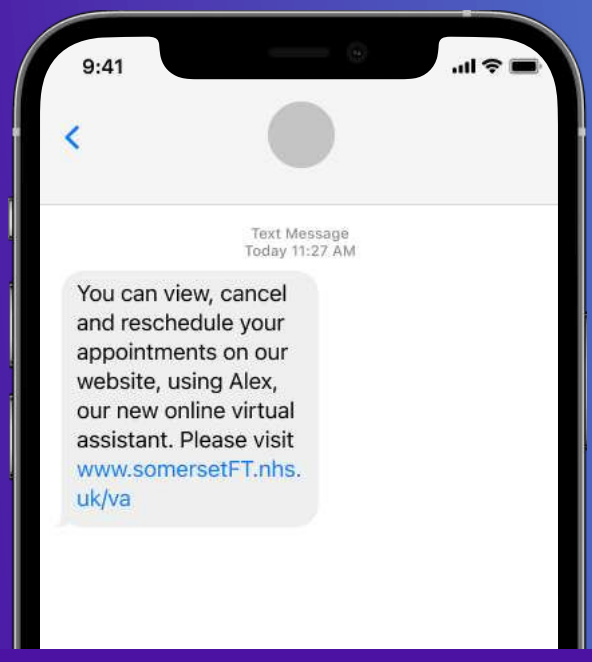
It also provides the option to speak to a human whenever the patient requires it. EBO's Virtual Assistant has been designed to be indistinguishable from a human when interacting with patients.

VA Pilot Deployment

The VA was deployed for an initial 12-week pilot phase. Three high-volume clinical services were chosen for inclusion in this initial rollout. These were:

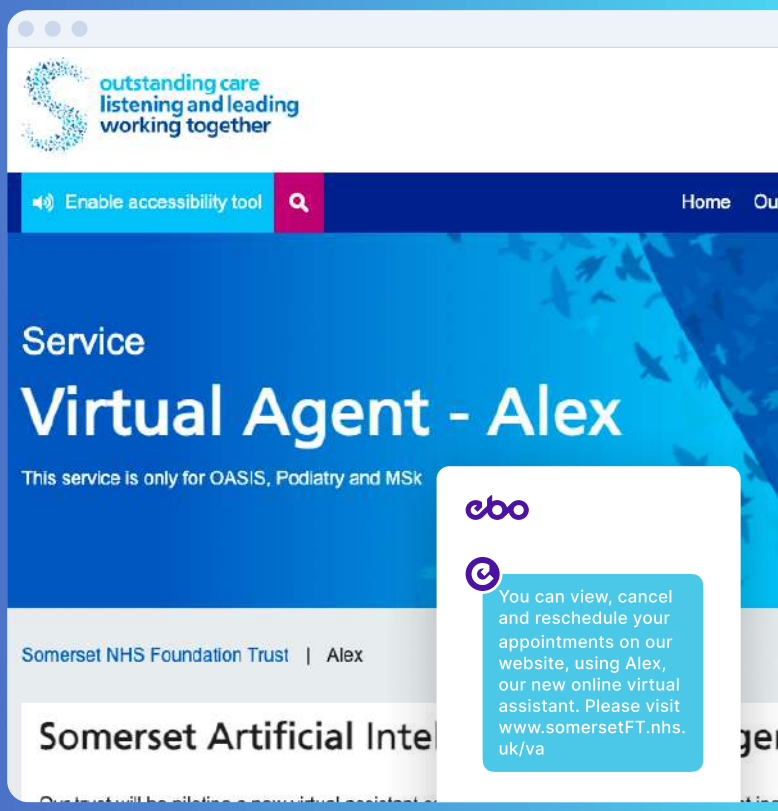
- Musculoskeletal Physiotherapy
- Trauma and Orthopaedics
- Podiatry services

Figure 1: Text message sent to patients with VA information



Patients given a first appointment with these services were sent a text message and/or appointment letter that invited them to use the VA to view, cancel and reschedule their appointments.

Figure 2: Somerset FT webpage, directed from QR codes in the appointment confirmation letter to patients



600 hours per week to be saved with a target adoption rate of 30%

Patient Adoption

An adoption strategy was planned for the pilot period by Somerset FT, however, the full patient onboarding campaign planned at the outset was not delivered due to staffing constraints. Despite this, the 10% target adoption rate set at the outset was quickly achieved during the pilot.

The 7,248 patients who were given a first appointment during the pilot were responsible for 7,815 booking events (views, cancellations and rescheduling) relating to these patient appointments.

During the pilot, the VA webpage received an average of 248 clicks per week with 1,204 VA conversations initiated. In total, 891 conversations were finished by patients with 816 patient-led booking events completed.

Out of 7,815 booking events, 816 were handled via the VA giving an adoption rate of 10.44%. 136 hours of booking staff time were saved over 12 weeks. This is equivalent to 11.3 hours per week or 0.33 WTE booking staff freed up by using the VA.

Pilot-Phase Results

3 clinical services

The VA was initially deployed for a 12-week pilot to three clinical services; Musculoskeletal Physiotherapy, Trauma and Orthopaedics and Podiatry services.

10.4% adoption rate

Despite small awareness efforts, an adoption rate of 10.44% was achieved quickly. Out of 7,815 booking events managed by the 3 participating services, 816 were handled via the VA.

11 hours per week staff time freed up

Assuming an average phone call takes 10 mins, this equates to 11.3 hours per week or 0.33 Whole-Time-Equivalent (WTE) of booking staff time freed up by the VA.

£159,000 potential savings

Extending VA deployment to all outpatient clinics, at the existing adoption rate (10.4%), will result in the VA managing 62,471 booking events/ yr - equal to 200 hours of booking staff time per week (5.9 WTE)

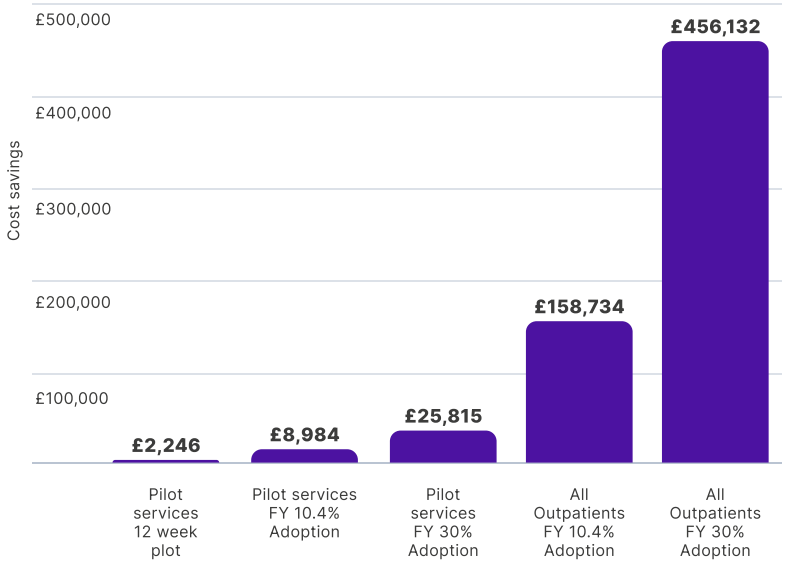
Up to 600 hours a week to be saved

Up to a projected 600 hours per week (16.9 WTE) of staff time and £456,000 could be saved once the VA is deployed to all outpatient services and the 30% adoption target is achieved.

An adoption plan will be put in place to a target adoption rate of 30% including:

- **broader direct communications to patients across all existing online and offline trust channels**
- **demos and training to increase knowledge and awareness of the VA with clinic receptionists and clinicians to support face to face communication about the VA to patients**
- **ensuring all patient booking communications to existing and new patients includes information about the VA**

Figure 3: Somerset FT cost savings estimation based on adoption rate



Patients were not only happy to use the VA functionality piloted, but would like to be able to use the full functionalities to complete their booking from beginning to end.

Patient experience

Each time a patient completed a conversation using the VA, they were asked to rate the success of the conversation by the VA straight away.

During the 12-weeks, 34% (306) of the conversations were rated from a total of 891. Of those users who were asked to rate the quality of their experience, 83% rated it as either 'like' or 'neutral'. Today, this has increased to 86%.

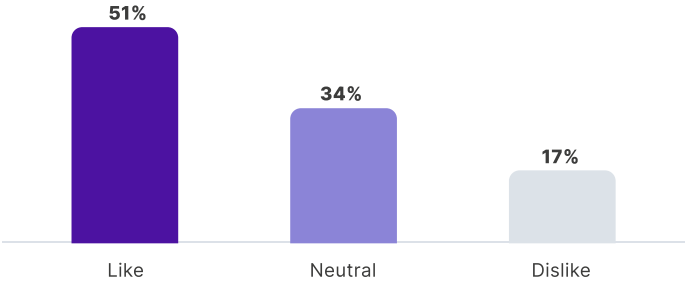
As part of the EBO continuous improvement process, the 'dislike' responses were all followed up individually, and the VA was amended to reflect the changes requested by the individuals concerned.

51% of patients reported a positive experience when using the VA to manage their booking.

A large proportion of patients wanted to be able to manage their booking end-to-end through the VA, without having to interact with booking staff.

Fifty-one percent of users reported a positive experience and 32% reported a neutral booking experience when using the VA. **Patients were satisfied with their experience using the VA.**

Figure 4: Overall patient feedback on Somerset FT's Virtual Assistant pilot deployment



Positive feedback from booking staff

Administrative staff within the pilot services were involved in operating the outputs from the VA, which was seamlessly integrated into their current processes as an augmentation to the current resources without creating an additional workload or lengthening of processes.

Formal feedback from services was that the VA had either a positive or no impact on their booking processes. **All three services reported reductions in call volumes due to a proportion of the bookings going through the VA.** They all unanimously chose to continue using the VA at the end of the pilot.

We received approximately 4 to 5 EBO notifications a day for MSK, reducing the number of cancellations via telephone.

– Service manager for MSK/Podiatry Somerset and Taunton FT

EBO’s Virtual Assistant was designed to be indistinguishable from a human when interacting with patients.

The Virtual Assistant developed by EBO has provided conversation automation with empathy. This has allowed the NHS Trust to build meaningful relationships with its patients, and improve its patient experience. Since the completion of the pilot phase, the VA’s performance has continued to improve significantly. Post-pilot phase results can be found on the page overleaf.

Somerset FT Pilot Study

136 hours

of administrative time saved in just 12 weeks

Patients told us they want to manage their bookings via the VA end to end without having to interact with booking staff

EBO's VA converses with patients intelligently; it understands, simulates, and reacts to human emotions empathically while helping them with their booking needs

Adoption rate of 10.4% achieved immediately with minimal effort

816 bookings

managed through the VA in 12 weeks

VA integrated seamlessly with booking processes

Reductions in call volume

All services chose to continue using VA after pilot

Continuous improvement improved VAs ability to handle enquiries from patients over time

Continuous Improvement and Longer-term Outcomes

Results (June 22)

14.6%
adoption rate

700+
conversations per month

86%
of patients rated 'like' or 'neutral'

24 hours
staff time saved every week

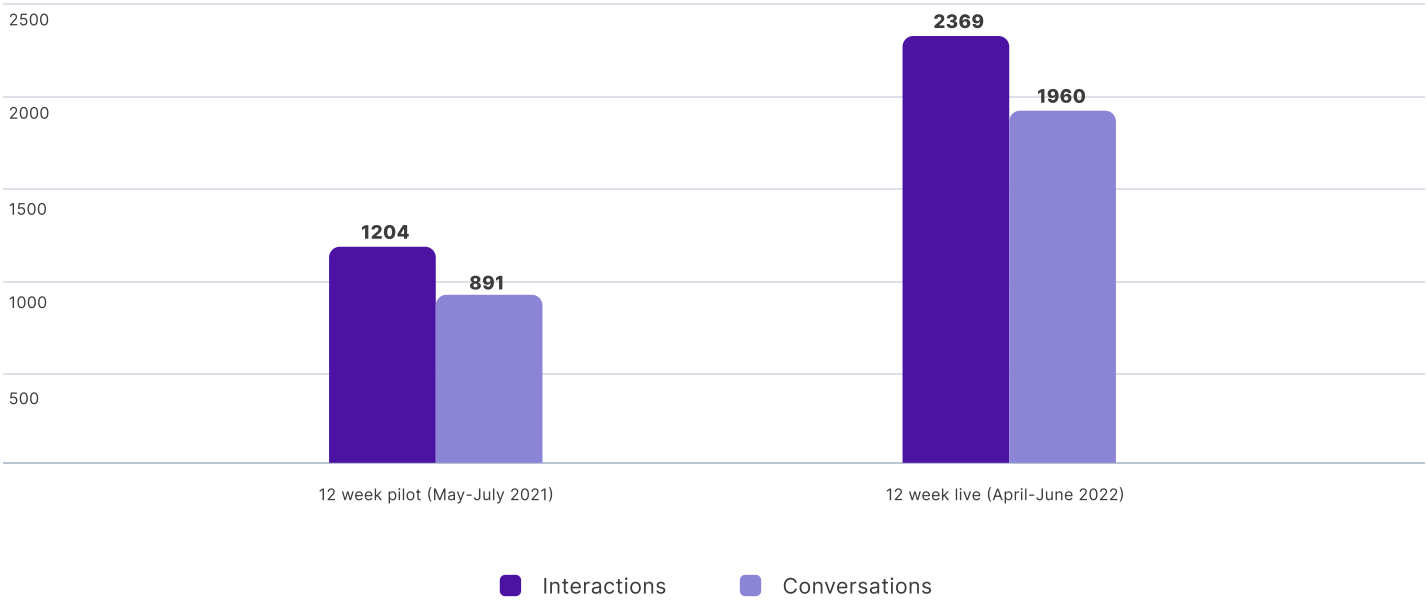
Since completion of the pilot phase almost a year ago, continuous improvement activities have had a positive impact on Virtual Assistant activity and KPI performance.

The volume of completed conversations has increased three-fold to over 700 conversations per month with the adoption rate increasing from 10.4% to 14.6% and still rising month on month. This equated to a saving of 615 hours of staff time in the 6 month period leading to the end of June 2022 which is equivalent to 24 hours per week.

80% of interactions with the Virtual Assistant lead to a conversation with 40% of conversations occurring outside office hours.

Patient satisfaction improved from 83% to 86% and feedback from staff has been very positive with staff saying that the Virtual Assistant is reducing call volume and helping them to manage their workload better.

Figure 5: Number of interactions and conversations in pilot phase and in the 12 weeks to end of June 2022



What happens next?

Increased functionality is planned for the next rollout phase of the VA to the three pilot services. The additional functionality will allow patients to:

- Receive notifications at specific points in their pathway to support self-management of bookings
- View appointment letters when viewing appointments
- Cancel appointments directly through the VA, without human intervention

Further Deployment

A patient-focused adoption plan has been partly implemented following completion of the pilot increasing adoption rates to 14.6%. Adoption work is ongoing and will be stepped up once the Virtual Assistant is deployed to all outpatient services, aiming for a target adoption rate of 30%. In line with patient feedback, we expect an increase in adoption when full automation is deployed, allowing them to complete their cancellations fully, using just the Virtual Assistant without staff intervention.

Once the VA is deployed to all outpatient services, the saving could increase to £456,000/yr (at the target 30% adoption rate).

EBO's VA is an end-to-end solution that can be used to improve patient experience and manage bookings more efficiently by deploying features such as:

Appointment backlog management, including:

- waiting list verification
- remote monitoring of patient condition and needs
- patient-led booking
- patient-initiated follow-up (PIFU)
- offering cancelled slots to selected groups of patients

Patient-led booking automation, including:

- direct booking into EPR/booking system through the VA
- gathering information to ensure patients are booked into the correct clinic
- notifications to clinicians and booking staff
- reminding patients of their appointments
- delivering assessments pre-and post-appointment including PROMs
- monitoring patients in between appointments
- providing patients with the ability to view key clinician approved letters, documents and entries from their patient records

Benefit from an end-to-end Virtual Assistant

EBO's Virtual Assistants, for healthcare providers, increase customer satisfaction by automating administrative processes with a personalised approach.

Somerset FT's pilot deployment saw positive results, particularly with patient engagement and willingness (and desire) for a digital tool that allows them to book and manage their appointments more easily.

Save valuable resources, whilst offering your patients a digital tool that learns from each conversation, and improves patient experience of your administrative processes.

Learn more about how you can benefit from personalised, end-to-end customer engagement automation.

CONTACT US

Contact us for a free consultation

Neil Taylor

Senior Healthcare Consultant

→ +44 (0)7966 541 308

→ +44 (0)1875 825 841

→ neil.taylor@ebo.ai

→ www.ebo.ai

EBO is trusted by

1. NHS Digital (2021) Hospital Outpatient Activity, 2020-21: Provider level analysis, Available at: https://digital.nhs.uk/data-and-information/publications/statistical/hospital-outpatient-activity/2020-21 (Accessed:15 September 2021)

2. Deloitte, 2016, What matters most to the healthcare consumer. Available at: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-cx-survey-pov-provider-paper.pdf (Accessed:5 October 2021)

3. Gartner (2021) Virtual Assistant in Information Technology Glossary. Available at: https://www.gartner.com/en/information-technology/glossary/virtual-assistant-va (Accessed: 11 October 2021)

References