



Sustainability of an intervention to reduce waiting for access to an epilepsy outpatient clinic

Annie K. Lewis^{a,b,*}, Nicholas F. Taylor^{a,b}, Patrick W. Carney^{a,c,d}, Alexander Bryson^{a,d}, Moksh Sethi^{a,e}, Suyi Ooi^{a,d}, Gabrielle T. Tse^a, Katherine E. Harding^{a,b}

^a Eastern Health, Melbourne, Australia

^b La Trobe University, Melbourne, Australia

^c Monash University, Melbourne, Australia

^d The Florey Institute of Neuroscience and Mental Health, Melbourne, Australia

^e Northern Health, Melbourne, Australia

ARTICLE INFO

Keywords:

Epilepsy
Outpatient clinic
Waitlist
Access
Sustainability
Demand management

ABSTRACT

Purpose: Delays in outpatient specialist neurologist care for people with epilepsy are common despite recommendations for prompt access. There is evidence to suggest that there are interventions that can minimise waitlists and waiting time. However, little is known about whether such interventions can result in sustained improvements in waiting. The aim of this study was to determine the extent to which an intervention to reduce waiting in an epilepsy specialist outpatient clinic demonstrated sustained outcomes two years after the intervention was implemented.

Methods: This observational study analysed routinely collected epilepsy clinic data over three study periods: pre-intervention, post-intervention and at two-year follow-up. The intervention, Specific Timely Assessment and Triage (STAT), combined a short-term backlog reduction strategy and creation of protected appointments for new referrals based on analysis of demand. After the initial intervention, there was no further active intervention in the following two years. The primary outcome was waiting measured by 1.) waiting time for access to a clinic appointment, defined as the number of days between referral and first appointment for all patients referred to the epilepsy clinic during the three study periods; and 2.) a snapshot of the number of patients on the waitlist at two time points for each of the three study periods.

Results: Two years after implementing the STAT model in an epilepsy clinic, median waiting time from post-intervention to two-year follow-up was stable (52–51 days) and the interquartile range of days waited reduced from 37 to 77 days post-intervention to 45–57 days at two-year follow-up, with a reduction in the most lengthy wait times observed. After a dramatic reduction of the total number of patients on the waitlist immediately following the intervention, a small rise was seen at two years ($n = 69$) which remained well below the pre-intervention level ($n = 582$).

Conclusion: The STAT model is a promising intervention for reducing waiting in an epilepsy clinic. While there was a small increase in the waitlist after two years, the median waiting time was sustained.

* Corresponding author. Allied Health Clinical Research Office, Level 2, 5 Arnold St, Box Hill, VIC, 3128, Australia.
E-mail address: annie.lewis@easternhealth.org.au (A.K. Lewis).

<https://doi.org/10.1016/j.heliyon.2023.e23346>

Received 27 September 2023; Accepted 1 December 2023

Available online 10 December 2023

2405-8440/© 2023 Published by Elsevier Ltd.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Early access to outpatient specialist neurologist care for people with epilepsy is recommended [1] as delays in receiving a diagnosis and commencing treatment are associated with worse seizure status, health-related quality of life and productivity [2]. However, managing demand to ensure timely care in non-admitted health services is complex. Interventions to reduce waiting time have been reported across a diverse range of services, providing a growing body of evidence to suggest that lengthy waitlists are not inevitable [3–5]. A key issue is that evaluations of interventions to reduce delays and improve patient flow in outpatient settings rarely report on sustainability [6] despite the risk that once resources to address the problem are withdrawn, waitlists and delays can return [7]. Given the importance of prompt care for those with suspected or confirmed epilepsy, interventions that lead to sustained reductions of waiting time are imperative.

The Specific Timely Assessment and Triage (STAT) model has been trialled in an epilepsy clinic and showed promise in promoting equitable and timely access to neurology appointments [8]. This model has growing evidence to suggest that demand can be actively managed to reduce waitlist burden [9]. STAT combines a short-term backlog reduction strategy and creation of protected appointments for new referrals based on analysis of demand, allowing all patients to receive a timely assessment appointment [10]. Having demonstrated effectiveness in community health and allied health services [11–13], STAT was trialled for the first time in an epilepsy clinic in 2019–2020. A waitlist of almost 600 people was reduced to 24 [14] and, although the median waiting time from referral to first appointment showed minimal change, variability in waiting times reduced [8]. The sustainability of these changes, however, has not been demonstrated beyond six months post-intervention, or beyond 12 months in other settings (Harding et al., 2020).

Implementation science frameworks frequently include sustainability or maintenance of interventions as a key implementation component, alongside other elements such as uptake, adoption, fidelity, and adherence [15]. The Proctor model [16] RE-AIM [17], and others [18,19] all include an element related to sustainability or maintenance of interventions. These frameworks aim to reduce the risk of “projectification” where, after researcher support is withdrawn, the intervention collapses [20]. However, studying sustainability is challenging [21] and generally not well evaluated or reported in implementation studies [22].

A range of factors impact on the extent to which healthcare interventions are sustained [23]. These may include the implementation context, the intervention design, and the organisational and cultural factors within the healthcare setting. A process evaluation of the STAT model in an epilepsy clinic [24] using the Medical Research Council guidance framework [25] highlighted factors that were likely to influence the sustainability of the STAT intervention. These factors included embedding behaviour change, such as the principles of safe, early discharge amongst neurologists. Other influencing factors were driven by establishing new processes, such as preserving space in clinic schedules for new patients and booking patients directly into new appointments without using a waitlist. Even once well established, these changes can be threatened by external forces on the system, such as increasing clinic demand, staff vacancies or changes to information technology systems.

Therefore, the aim of this study was to determine the extent to which an intervention to reduce waiting in an epilepsy specialist outpatient clinic demonstrated sustained outcomes two years after the intervention was implemented.

2. Method

2.1. Study design

This observational study analysed routinely collected clinic data over three study periods: pre-intervention, post-intervention and at two-year follow-up. The study was approved by the health network ethics committee (LR22-024-86148). Consent was not sought from individual patients for this study as all patient data used was obtained from routinely collected health service data, reported in aggregated and de-identified form. The study is reported in accordance with STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) checklist [26].

2.2. Setting

Both the original intervention study [8] and the current sustainability study were conducted in an epilepsy medical specialist outpatient clinic in a large metropolitan publicly-funded health network. The clinic runs for 3.5 hours per week and is staffed by four neurologists with support from clerks who manage administrative tasks related to referrals and bookings. Referrals are received from within the hospital network, predominantly the emergency department, and from community-based general practitioners (GPs). Referrals are triaged by the senior neurologists and are accepted for diagnosis of patients who have experienced a first suspected seizure or have an existing diagnosis of epilepsy requiring specialist management consultation. Australia’s universal healthcare system, Medicare, funds the hospital to provide appointments and patients do not incur any out-of-pocket fee. The allocated appointment times are 30 minutes for initial assessment and 15 minutes for review or follow-up.

2.3. Intervention

The intervention was performed during 2019 and early 2020 and consisted of implementing the STAT model to reduce the waitlist and waiting times in an epilepsy clinic. STAT is a data-driven, principles-based approach to managing demand in outpatient settings that combines a number of evidence-based strategies to responsively manage patient flow [9]. An initial, short term backlog reduction

is implemented to enable the service to start the new way of operating with a “clean slate”. Backlog reduction typically includes strategies such as auditing the waiting list to determine whether all patients are still in need of the service or a short term increase in supply. Historic data is then used to calculate the number of new patients who would need to be seen each week to keep up with demand. This number of new appointments is permanently protected in clinician diaries so that new referrals can be immediately booked once determined to be eligible. With the inflow of new patients steady and matched with demand, clinicians triage their patients at the time of first appointment for additional care (beyond an initial consultation) that can be provided within the available resource constraints. This generally leads to redesign strategies to maximise clinic efficiency, improve discharge practices and encourage active decision-making about the allocation of review or follow-up appointments (Fig. 1). While it could be argued that none of the individual components of STAT are new, the model brings these evidence-based principles together into a single package with a clear, step by step guide to implementation.

For the epilepsy clinic, calculation of service demand based on historical data showed that nine new appointments per week were required to keep up with the rate of referrals. During the intervention period, ten new appointment slots were protected in clinician diaries corresponding to the forecasted demand. The waitlist was eliminated over an eight month period using an iterative backlog reduction strategy that commenced with auditing of referrals to determine current need. In 2019, there were 599 referrals listed on the waitlist that included referrals up to eight years old. Administrative errors were corrected (for example duplicate referrals were consolidated). Patients and/or their GPs were contacted and those who no longer required an appointment or were unable to be contacted were discharged, under the supervision of the senior neurologists. Extra clinics were provided to manage patients on the waitlist who still required the service which was only 11 % of the original waitlist [14]. With no waitlist and the correct number of protected new appointments, new patients were booked directly into appointments without being placed on a waitlist.

2.4. Data collection

Clinic data were collected from healthcare records of all new patients referred to the epilepsy clinic during three time periods of six months duration each (Table 1). Data were collected over the same six-month period (1 January to 30 June) in each year to control for seasonal fluctuations. The inclusion period of six months with a gap of six months between time periods was designed to maintain group independence.

Service and patient data were collected for all patients admitted during the study periods from health service outpatient clinic databases and patient medical records. These data were generated in reports from the clinic bookings database, supplemented by locally collected clinic data and manual auditing of medical histories to retrieve any missing data.

2.5. Outcomes

The primary outcome was waiting for access to a clinic appointment, measured in two ways. First, the median number of days between referral and first appointment for all patients referred to the clinic during each study period; and second, a snapshot of the number of patients on the waitlist at two time points (1 January and 1 June) for each of the three study periods.

Data related to appointment outcome were also collected to provide context for interpretation of how implementation of the STAT model may have changed clinical practice. These included the proportion of patients rebooked for a review appointment or discharged

STAT: Specific Timely Assessment and Triage

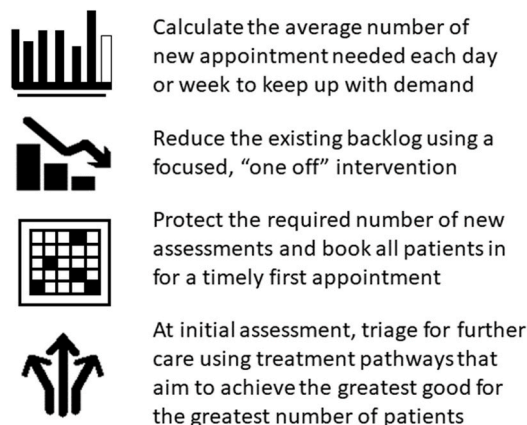


Fig. 1. Key elements of the STAT model.

Table 1
Study time periods.

Dates	Study period	Purpose
1	January 1 to June 30, 2019	Pre-intervention
2	January 1 to June 30, 2020	Post-intervention
3	January 1 to June 30, 2022	2-year follow-up

after the first appointment; and the proportion of patients who attended or missed their first appointment. Appointments were classified as missed if they were cancelled or the patient failed to attend. To evaluate implementation fidelity, the weekly number of new appointments scheduled in the clinic during each six-month study period (1 January to 30 June) was audited and reported.

2.6. Analysis

Given the skewed nature of waiting time data, changes in median waiting time across the three study periods were analysed using the Kruskal Wallis test for non-parametric data. Post-hoc pairwise comparisons across study periods with Bonferroni correction for multiple tests were used to determine how the groups differed from one another. The number of people on the waitlist and accepted to the clinic were analysed descriptively over the study time periods.

Data related to appointment outcome (the proportion rebooked/discharged, the proportion who attended/missed their appointment) were analysed using chi square test to evaluate whether there were differences in the distribution of these outcomes over the three study periods. Intervention fidelity (the number of new appointments provided) was analysed with one-way ANOVA. Characteristics of participants across the three time periods were compared using chi square tests (gender, referral source) or the Kruskal Wallis for non-parametric data (age).

3. Results

Comparison of the characteristics of referrals accepted over the three study periods showed there were similar patient demographics including sex, age and referral source (Table 2). There was a small observed reduction in the number of patients accepted to the clinic during the third study period.

The number of patients on the waitlist showed a large decrease from pre-intervention to immediately post-intervention of $n = 582$ to $n = 8$, and by the end of the two-year follow-up had increased to $n = 69$ referrals (Table 3 and Fig. 2).

The median days waited for patients referred during pre-intervention was 38 [IQR 28 to 67] compared to 52 days [38 to 77] for those referred during the post-intervention period (Kruskal Wallis, $p < .001$). Compared to those referred during the post-intervention period, the waiting time for patients referred at two years post-intervention remained stable (median 51 days, IQR 45 to 57) and the variability of waiting decreased (Table 3 and Fig. 3).

The mean number of new appointments scheduled weekly reduced in the two-year follow-up period to 7.1 (2.4), compared to 10.5 (3.6) each week during post-intervention period and 9.7 (5.3) pre-intervention ($F = 4.873$, $p = .009$). The proportion of patients discharged after the first appointment increased for patients referred during the post-intervention period (37 %) but was similar for those referred during pre-intervention and two-year follow-up periods (22 % and 24 %). There was no change across study periods in attendance rate.

4. Discussion

Two years after implementing the STAT model in an epilepsy clinic, we observed that the effects of the intervention had largely been sustained albeit with some signs of the waitlist starting to increase. Median waiting time from implementation to two-year follow-up was stable (52–51 days) and the interquartile range of days waited reduced from 37 to 77 days post-intervention to 45–57 days at

Table 2
Characteristics of participants.

	Pre-intervention study period N = 219	Post-intervention study period N = 200	2-year follow-up study period N = 178	Significance, p value
Sex n (%)				
Female	98 (45)	100 (50)	81 (46)	.459 ^a
Male	121 (55)	100 (50)	96 (54)	
Intersex	0 (0)	0 (0)	1 (0.6)	
Age in years				
Median [25th and 75th percentiles]	41 [23–59]	44 [25–61]	39 [25–59]	0.276 ^b
Referral source n (%)				
Hospital	174 (80)	148 (74)	137 (77)	.417 ^a
GP/Community	45 (20)	52 (26)	41 (23)	

^a Pearson Chi-Square.

^b ^{KW}Kruskal-Wallis.

Table 3
Waitlist, waiting time and secondary outcome results.

	Pre-intervention study period N = 219	Post-intervention study period N = 200	2-year follow-up study period N = 178	Significance
Number on the waitlist at				
1 January	560	24	74	
1 June	582	8	69	
Waiting time, median [IQR]	38 [28–67]	52 [38–77]	51 [45–57]	<.001 ^a
Number of referrals accepted	219	200	178	
New appointments provided each week, mean (SD)	9.7 (5.3)	10.5 (3.6)	7.1 (2.4)	.009 ^b
Appointment outcome after assessment [n (%)]				
Rebooked for review	170 (78)	126 (63)	135 (76)	.002 ^c
Discharged	49 (22)	74 (37)	43 (24)	
Attendance at first appointment [n (%)]				
Attended	145 (66)	122 (61)	125 (70)	.165 ^c
Missed (cancel/failed to attend)	74 (34)	78 (39)	53 (30)	

^a ^{KW}Kruskal-Wallis.

^b One way ANOVA (F = 4.873) Tukey post-hoc test-group 1 vs group 2: p = .686; group 1 vs group 3: p = .035; group 2 vs group 3: .0095.

^c Pearson Chi-Square.

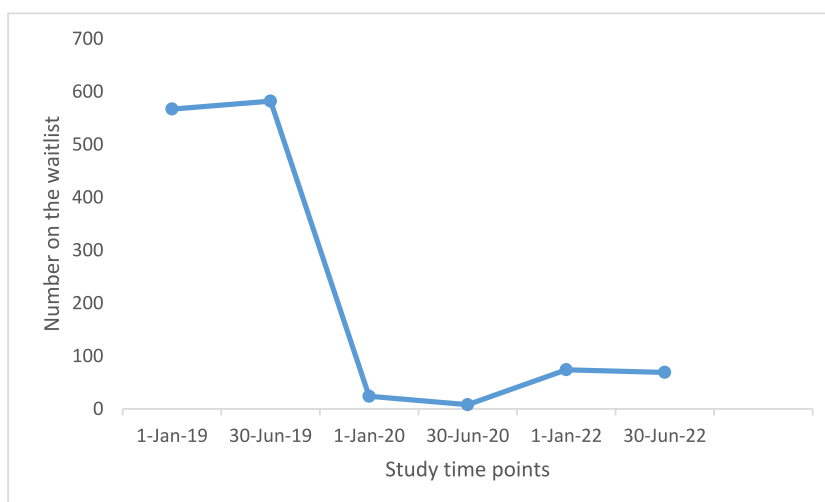


Fig. 2. Snapshot of number of patients on the waitlist on 1 January and 1 June for 2019 (pre-intervention), 2020 (post-intervention) and 2022 (2-year follow-up).

two-year follow-up, demonstrating further gains in equitable service provision. Where sustainability looked to be threatened was in the number on the waitlist. After a dramatic reduction immediately following the intervention, a small rise was seen two years later but the total number of 69 on the waitlist in June 2022 remained well below the pre-intervention level (n = 582).

There are a number of factors that may explain why the waitlist numbers were beginning to increase. These include an insufficient number of new appointments protected in the clinicians' schedules (an essential element of the STAT model), a change in key personnel and a lack of ownership and active monitoring of waitlist data. The calculation conducted for the original study indicated that nine new appointments were needed weekly to keep up with demand. However, auditing at two years showed that an average of seven new appointments were offered. This was in part due to new appointment slots being taken out of the schedule to accommodate returning patients indicating that demand for review appointments outstripped supply.

We postulate that a key driver of the mismatch in review appointment supply and demand was due to the neurologists' reluctance to discharge appropriate patients. Six or 12-month review appointments were routinely scheduled "just in case" a consultation was required. During the intervention study, the neurologists were asked and reminded to actively triage patients in terms of ongoing care, considering review appointments to be a finite resource. The neurologists could see the value and potential application of a change from "just in case" to "just in time" appointment provision that would free up review appointments. "Just in time" is a concept originating in manufacturing but with applicability to healthcare; high value activity is promoted and waste is reduced by making resources readily available at the point of need [27].

To operationalise "just in time" appointments to manage demand, neurologists need to be confident that their patients would be well supported in the community and be able to re-enter the epilepsy clinic easily and promptly as needed. Integration of the epilepsy

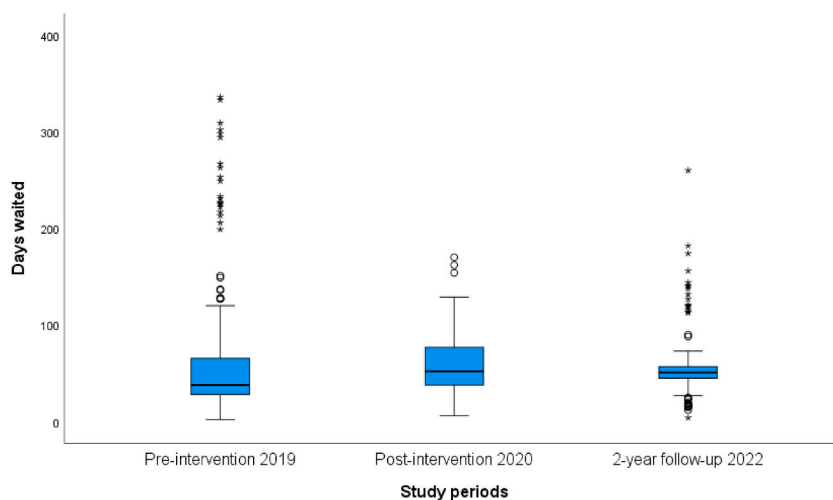


Fig. 3. Median waiting time with interquartile range and outliers, by study period.

clinic's specialist care with self-management and partnerships between the general practitioner (GP) and community-based support agencies may be essential. There is evidence that shared care between specialists and GPs is beneficial for patient outcomes [28]. While the neurologists routinely corresponded with GPs following appointments, a more streamlined and effective communication strategy with patients and GPs may enhance discharge confidence and reduce the number of "just in case" appointments. Self-management strategies have also been demonstrated to be a useful adjunct to epilepsy care, leading to improvements in quality of life [29,30]. Therefore, connecting patients with appropriate community organisations that can offer services such as education and peer support has the potential to reduce the burden on specialty services.

The results of this study suggest that sustaining reduced waiting in a busy epilepsy clinic can be achieved using a relatively simple model and without additional resources. Although patient satisfaction was not directly measured in the current study, the STAT model has the potential to enhance satisfaction by improving clinic efficiency and minimising waitlists [31]. However, an intervention such as STAT requires ongoing monitoring using accurate clinic data. Leadership, focus and ownership of demand management and patient flow are essential to maintaining a responsive and timely service. As highlighted in the Consolidated Framework for Sustainability in Healthcare, monitoring over time, adaption and "ownership" are essential to sustaining interventions [32]. To sustain gains made by implementing the STAT model, it was apparent from this study that a key person needs to regularly monitor performance using accurate data that indicate when supply and demand are out of balance, and respond accordingly. In future, artificial intelligence tools may have a place in the calculation and monitoring of demand for new and review appointments that responds dynamically to clinic flow in real time.

A limitation of this study is that we were unable to assess how COVID-19 impacted on clinic performance, although the clinic swiftly moved to telehealth to continue providing appointments. Another limitation is that we did not report on demand for review appointments. This evaluation and a previous study [8] highlight the need to manage demand for review appointments as an integral part of system change that aims to improve timely access to appointments. Future research is recommended to investigate models of care that can manage ongoing needs, especially for conditions such as epilepsy that are often chronic.

5. Conclusion

The STAT model is a promising intervention to improve timely access in an epilepsy clinic and while a small increase in the waitlist was found after two years, the median waiting time was sustained and variation in waiting time reduced. This study suggests that sustained improvements following waiting time interventions are possible but are dependent on ongoing attention to patient flow at all points along the continuum from entry to discharge. Administration of the clinic that incorporates active performance monitoring based on data may be an important component to moving towards a service that responds to patient need "just in time".

Funding

This work was supported by a grant from the Eastern Health Foundation.

CRedit authorship contribution statement

Annie K. Lewis: Conceptualization, Data curation, Formal analysis, Investigation, Project administration, Writing - original draft, Writing - review & editing, Methodology. **Nicholas F. Taylor:** Conceptualization, Data curation, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Methodology. **Patrick W. Carney:** Conceptualization, Data curation, Formal

analysis, Investigation, Methodology, Writing - review & editing. **Alexander Bryson:** Investigation, Writing - review & editing. **Moksh Sethi:** Investigation, Writing - review & editing. **Suyi Ooi:** Investigation, Writing - review & editing. **Gabrielle T. Tse:** Investigation, Writing - review & editing. **Katherine E. Harding:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Visualization, Writing - original draft, Writing - review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- [1] A. Krumholz, et al., Evidence-based guideline: management of an unprovoked first seizure in adults: report of the guideline development subcommittee of the American academy of neurology and the American epilepsy society, *Neurology* 84 (16) (2015) 1705–1713.
- [2] A.K. Lewis, et al., What is the effect of delays in access to specialist epilepsy care on patient outcomes? A systematic review and meta-analysis, *Epilepsy Behav.* 122 (2021), 108192.
- [3] U. Naiker, et al., Time to wait: a systematic review of strategies that affect out-patient waiting times, *Aust. Health Rev.* 42 (3) (2017) 286–293.
- [4] F. Dupuis, et al., Strategies to reduce waiting times in outpatient rehabilitation services for adults with physical disabilities: a systematic literature review, *J. Health Serv. Res. Policy* (2022), 13558196211065707.
- [5] K.E. Harding, et al., Service redesign interventions to reduce waiting time for paediatric rehabilitation and therapy services: a systematic review of the literature, *Health Soc. Care Community* 30 (6) (2022) 2057–2070.
- [6] H. Eriksson, et al., Reducing queues: demand and capacity variations, *Int. J. Health Care Qual. Assur.* 24 (8) (2011) 592–600.
- [7] P. Kenis, Waiting lists in Dutch healthcare: an analysis from an organization theoretical perspective, *J. Health Organisat. Manag.* 20 (4) (2006) 294–308.
- [8] A.K. Lewis, et al., An innovative model of access and triage to reduce waiting in an outpatient epilepsy clinic: an intervention study, *BMC Health Serv. Res.* 23 (1) (2023) 933.
- [9] K.E. Harding, et al., A model of access combining triage with initial management reduced waiting time for community outpatient services: a stepped wedge cluster randomised controlled trial, *BMC Med.* 16 (1) (2018) 182.
- [10] K. Harding, et al., *Specific Timely Appointments for Triage (STAT) Handbook*, Eastern Health and La Trobe University, Melbourne, Australia, 2018.
- [11] K. Harding, J. Bottrell, Specific timely appointments for triage reduced waiting lists in an outpatient physiotherapy service, *Physiotherapy* 102 (4) (2016) 345–350.
- [12] K.E. Harding, et al., Reducing waiting time for community rehabilitation services: a controlled before-and-after trial, *Arch. Phys. Med. Rehabil.* 94 (1) (2013) 23–31.
- [13] K.E. Harding, et al., Sustainable waiting time reductions after introducing the STAT model for access and triage: 12-month follow up of a stepped wedge cluster randomised controlled trial, *BMC Health Serv. Res.* 20 (1) (2020) 1–9.
- [14] A.K. Lewis, et al., Reducing the waitlist of referred patients in a medical specialist outpatient clinic: an observational study, *J. Health Organisat. Manag.* 35 (1) (2021) 115–130.
- [15] M.N. Sarkies, et al., Implementing large-system, value-based healthcare initiatives: a realist study protocol for seven natural experiments, *BMJ Open* 10 (12) (2020), e044049.
- [16] E. Proctor, et al., Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda, *Administration and Policy in Mental Health and Mental Health Services* 38 (2) (2011) 65–76.
- [17] R.E. Glasgow, et al., RE-AIM planning and evaluation framework: adapting to new science and practice with a 20-year review, *Front. Public Health* 7 (2019) 64.
- [18] A.C. Feldstein, R.E. Glasgow, A practical, robust implementation and sustainability model (PRISM) for integrating research findings into practice, *Joint Comm. J. Qual. Patient Saf.* 34 (4) (2008) 228–243.
- [19] G.A. Aarons, M. Hurlburt, S.M. Horwitz, Advancing a conceptual model of evidence-based practice implementation in public service sectors, *Adm Policy Ment Health* 38 (1) (2011) 4–23.
- [20] C. Jensen, S. Johansson, M. Löfström, Policy implementation in the era of accelerating projectification: synthesizing Matland's conflict-ambiguity model and research on temporary organizations, *Publ. Pol. Adm.* 33 (4) (2018) 447–465.
- [21] D.R. Walugembe, et al., Sustainability of public health interventions: where are the gaps? *Health Syst Policy Res* 17 (1) (2019) 1–7.
- [22] J.C. Moullin, et al., Systematic review of the exploration, preparation, implementation, sustainment (EPIS) framework, *Implement. Sci.* 14 (1) (2019) 1.
- [23] R.C. Shelton, B.R. Cooper, S.W. Stirman, The sustainability of evidence-based interventions and practices in public health and health care, *Annu. Rev. Publ. Health* 39 (2018) 55–76.
- [24] A.K. Lewis, et al., An innovative model of access and triage to reduce waiting in an outpatient epilepsy clinic: a process evaluation, 2023. Under review.
- [25] G.F. Moore, et al., Process evaluation of complex interventions: medical Research Council guidance, *BMJ* 350 (2015) h1258.
- [26] E. Von Elm, et al., The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies, *Bull. World Health Organ.* 85 (2007) 867–872.
- [27] A. Gupta, JIT in healthcare: an integrated approach, *Int. J. Adv. Manag. Econ.* 1 (1) (2012) 20–27.
- [28] H. Altalib, et al., Epilepsy quality performance in a national sample of neurologists and primary care providers: characterizing trends in acute and chronic care management, *Epilepsy Behav.* 123 (2021), 108218.
- [29] M.W. Luedke, et al., Self-management of epilepsy: a systematic review, *Ann. Intern. Med.* 171 (2) (2019) 117–126.
- [30] R. Michaelis, et al., Cochrane systematic review and meta-analysis of the impact of psychological treatments for people with epilepsy on health-related quality of life, *Epilepsia* 59 (2) (2018) 315–332.
- [31] K.E. Harding, A.K. Lewis, N.F. Taylor, 'I just need a plan': consumer perceptions of waiting for healthcare, *J. Eval. Clin. Pract.* 29 (6) (2023) 976–983.
- [32] L. Lennox, L. Maher, J. Reed, Navigating the sustainability landscape: a systematic review of sustainability approaches in healthcare, *Implement. Sci.* 13 (1) (2018) 27.