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Short Report

Title: **Feasibility of Remote Memory Clinics using the PDSA cycle.**

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Abstract

Introduction Timely diagnosis of dementia is crucial for initiating and maintaining support for people living with dementia. The COVID pandemic temporarily halted Memory Clinics, where this is organised, and rate of dementia diagnosis has fallen. Despite increasing use of alternatives to face-to-face (F2F) consultations in other departments, it is unclear whether this is feasible within the traditional Memory Clinic model.

Aims The main aim of this service improvement project performed during the pandemic was to explore feasibility of telephone (TC) and videoconference (VC) Memory Clinic consultations.

Methods Consecutive patients on the Memory Clinic waiting list were telephoned and offered an initial appointment by VC or TC. Data extracted included: age, internet-enabled device ownership, reason for and choice of Memory Clinic assessment. We noted MoCA-Blind (TC) and ACE-III (VC via Attend Anywhere) scores, and feasibility of consultation.

Results Of 100 patients, 12 had a home assessment, moved away, been hospitalised, or died. 45, 21 and 6 preferred F2F, VC and TC assessments respectively. 16 were not contactable and offered a F2F appointment. The main reason for preferring F2F was non-ownership, or inability to use an internet-enabled device (80%). VC and TC preference reasons were unwillingness to come to hospital (59%), and convenience (41%). Attendance rate was 100% for VC and TC, but 77% for F2F. Feasibility (successful consultations) were seen in 90% (VC) and 67% (TC) patients.

Conclusion For able and willing patients, remote Memory Consultations can be both feasible and beneficial. This has implications for future planning in dementia services.

Key Points

- When offered a remote appointment during the COVID-19 pandemic, the majority of patients on the Memory Clinic waiting list chose to be seen face to face, due to not owning or being unable to use an internet-enabled device.
- Almost a third of patients preferred, and could engage with, videoconference consultations.
- For a minority, videoconference and telephone Memory Clinics can be feasible and beneficial, with a 100% attendance rate.
- Remote Memory Clinics may be useful in helping to decrease waiting lists in the wake of the COVID pandemic.

Introduction

The COVID-19 pandemic has changed the way in which people access health services. Memory Clinics, which are essential for initiating and maintaining support for people living with dementia (PLWD), have had an increased rate of failed attendance due to a general fear of catching COVID-19 in hospital [1]. In addition, temporary restrictions on face-to-face clinics during the pandemic peaks have reduced the rate of dementia diagnosis, and care for PLWD has been adversely affected [2].

Subsequently, a specialist working group by Burns and colleagues [3] began to advocate for remote (or virtual) Memory Clinics (MC), and a framework for how technologies could be implemented to support remote clinics was proposed [4]. The approach generally used is to simply adapt the traditional clinic model to either a telephone or videoconference consultation (TC or VC). Remote clinics may have economic and logistical benefits for some patients and health organisations [5]. Before the pandemic, they have been limited to research and rural settings, with benefits of fewer cancelled clinics and access to specialist care within one's own community [6, 7].

TC had been more widely used than VC in people presenting with cognitive difficulties, the main benefit being their familiarity and acceptability [8]. However, non-verbal communication, which is arguably essential in formulating a diagnosis in dementia, is unavailable during TCs. VC may offer this advantage, but older people with cognitive impairment are less likely to use the internet for browsing or communication [9]. While VC are being encouraged, both during and beyond the pandemic [3], it is unclear how feasible this method is in everyday practice.

Methods

We carried out this pragmatic study in a large tertiary memory services centre from October 2020 to March 2021, utilising the Plan, Do, Study, Act (PDSA) cycle as the study framework. The 'Plan' stage involved clearly identifying the study aims and outcome measures. The 'Do' stage involved telephone triage of patients by the Research Fellow (JTC). There were no exclusion criteria other than care home residents (who were not allowed to attend hospital) and those needing translators (who were unavailable). Patients who were next to be allocated a first appointment at the MC were asked for clinic consultation preference, and availability of suitable internet-enabled device. During the 'Study' stage, data were collected and analysed, in order to inform the 'Act' stage where methods of telephone triage were refined

in that patients' relatives, where appropriate, were offered all clinic options, in order to optimise uptake of remote MC. A collateral history is key to understanding the issues, and patients will often be encouraged to attend with someone who knows them well. After a departmental training session, other clinicians of varying grades and seniority (one Associate Specialist, three Consultants, and one Specialist Trainee) within the team trialled TC and VC. We utilised Attend Anywhere (https://digitalhealth.wales/tec-cymru/vc-service) an NHS-sanctioned virtual consultation platform to conduct VC, and landline telephones from the MC office, to conduct TC.

Data collected during the telephone triage stage included: device ownership (patient and carer), consultation mode choice and reasons. After confirmation of preferred appointment, a letter confirming the date and time was sent. Addenbrooke's Cognitive Examination-III (ACE-III) was used for assessment in F2F or VC clinics and Montreal Cognitive Assessment-Blind (MoCA-blind) was used for TC. Consultation and administration times were documented. An appointment was considered successful if it was completed satisfactorily, without need for conversion to a different mode of consultation, and a diagnosis or clinical outcome was provided, with an agreed plan for ongoing care. We assessed satisfaction with VC or TC by way of questionnaires sent to patients for return by post.

Results

Of 100 consecutive patients on the MC waiting list for a first appointment, nine patients were found to have moved away, been admitted to hospital, or died prior to appointment being offered. Three patients were deemed more suitable for Specialist Nurse review. Sixteen patients were not contactable by telephone on multiple occasions and were offered a F2F appointment by post. Of the remaining 72 patients offered appointment options, 45 opted for F2F (including 6 with significant hearing problems), 21 for VC and 6 for TC (Table 1).

The mean age of all patients was 77.5, with a difference in mean ages between groups (F2F, VC and TC). The mean age of patients was lowest in VC, then F2F, then TC groups (Table1). The main reasons for F2F preference were not owning, or not being able to use an internet-enabled device (36/45, 80%). The reasons for both VC and TC preference were being unwilling to come to hospital (16/27, 59%), or more convenience (11/27, 41%). All 27 patients (100%) attended the VC and TC appointments and the consultation was successful in 23 (85%), as judged by not needing to convert to a different mode of consultation and resulting in a clinical outcome and plan for ongoing care. By contrast, only 78% of those who chose a F2F appointment, and 75% of those offered an appointment by post attended their appointment. Mean consultation time for VC and TC were 52 and 41 minutes respectively (compared to

allocated time for F2F of 45 minutes). Almost all patients returning a satisfaction questionnaire for VC and TC were satisfied with the clinic arrangements and outcome (Table 1), regardless of virtual format, albeit with a modest return rate (59%). Clinicians were supportive of VC consultations.

Discussion

The COVID-19 pandemic has adversely impacted outpatient services, and some disruption to F2F interactions is inevitable in these circumstances. Many medical specialties have adopted remote clinics with remarkable ease [10, 11], with previously fewer reports in gerontology [12]. The pandemic has caused renewed interest in the feasibility of virtual clinics in older people [13]; our work being one such example.

Whilst there are perceived challenges with older people navigating technology and internet-based communication, a third of contactable patients on our waiting list had personal ownership of an internet-enabled device, and others had a close family member or carer who owned one, with potential to use it for remote consultation. Consultation choice (i.e. VC vs F2F) appeared to be driven by availability and usability of internet-enabled device. This was true for patients opting for F2F (45%), who did not have suitable technology (or were unable to work existing devices) and who may have been sceptical of consultation modes other than F2F. However, a good proportion of patients opting for TC or VC thought this was more convenient, providing an alternative to existing approaches of home visits and support from Primary Care. The pandemic certainly caused a fear of patients attending hospital, and therefore when offered, patients welcomed a remote consultation.

One practical concern prior to this project was whether the clinical team would be comfortable using standard neurocognitive assessments via VC. We found that it was indeed feasible to use the ACE-III for VC assessments, with some caveats, such as considering the orientation question of patient locality and using clinical judgment as to whether the patient was orientated to place or not. We also found that VC assessment might lend itself very well to teaching students or junior doctors, in socially restricted circumstances, for carefully chosen and consented patients. This might be borne in mind when considering teaching provisions in the hospital environment. A further strength of this project was the ability to gauge the proportion of patients able to have an initial clinical consultation remotely, setting in motion processes for ongoing care involving other members of the Memory team in the community, such as Memory Support Workers and Nurse Specialists.

Non-attendance rate is always a concern in clinics, but in this cohort 100% attended VC and TC appointments, compared to 77% of F2F appointments. The two patients with failed VC were due to

connection problems. Feasibility (successful consultation with a clinical outcome) was satisfactory for all clinic formats, with no clear identifiable characteristics in VC patients other than access to necessary technology and an enthusiasm to trial a virtual consultation. Our findings of a younger VC cohort reflect findings of a recent digital inclusion report which showed that internet-usage declined sharply after the age of 75 [14], despite an enthusiasm to learn to use technology [15].

Limitations of this study are that it is based in a single memory service and sample size is modest. Due to the nature of telephone triage, we noted only broad reasons for choice of consultation mode, and other more subtle reasons may have been overlooked. We did not capture date about diagnosis sharing and ongoing care, nor did we capture deprivation data, but this may be a basis for future work. However, the study was a pragmatic response to clinic restrictions and social distancing measures and the unselected nature of waiting list patients means that there is likely to be some generalisability. Uptake of an offer of virtual consultation may be less in non-pandemic conditions, although there is growing public experience and acceptance of videoconferencing as the norm in many other settings.

Conclusion

When a virtual memory clinic appointment was offered to newly referred patients, most still opted to be seen F2F. However, about one in three referrals preferred to be seen remotely and usually delivered a successful outcome for both clinicians and patients. Beyond the Covid pandemic, the pressure on memory services will continue to rise. The continuing availability of remote assessments, complementary to F2F consultations, beyond the pandemic may help services to provide a more flexible and efficient response to growing need and should be considered in future dementia service planning.

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Declarations of Conflicts of Interest

The authors declare no conflicts of interest.

Roles of Authors

JTC, BM and AB conceived the project idea and wrote the protocol. JTC conducted the telephone triage and memory clinics, in conjunction with other clinicians within the Memory Team. All authors drafted and edited the manuscript.

	Video-conference Clinic (n=21)	Telephone Clinic (n=6)	Face to Face Clinic	
			Appointment made by phone (n=45)	Appointment offered by post as unable to contact (n=16)
Age ± years, mean ± SD	75 ± 15.4	87.3 ± 3.9	79.1 ± 9.0	68.8 ± 11.3
Sex				
M, n (%)	9 (42.9)	2 (33.3)	23 (51.1)	5 (31.3)
F, n (%)	12 (57.1)	4 (66.7)	22 (48.9)	11 (68.7)
Device ownership (patient), n (%)				
Computer/Laptop/Tablet	4 (19)	1 (17)	11 (24)	-
Smartphone	1 (5)	0	3 (7)	-
2 or more devices	5 (24)	0	1 (2)	-
None	11 (52)	5 (83)	30 (67)	-
Unknown	0	0	0	16 (100)
Device ownership (carer/family member), n (%)				
Computer/Laptop/Tablet	3 (14)	2 (33)	5 (11)	-
Smartphone	4 (19)	0	4 (9)	-
2 or more devices	9 (43)	3 (50)	4 (9)	-
None	2 (10)	0	9 (20)	-
Unsure	3 (14)	1 (17)	23 (51)	16 (100)
Reasons for choice of consultation, n (%)				
Unwilling to come to hospital	12 (57)	4 (67)	0	-
More convenient	9 (43)	2 (33)	0	-
No suitable device or wifi	0	0	25 (56)	-
Unable to use existing device	0	0	11 (24)	-
Sensory impairment	0	0	6 (13)	-
More comfortable with F2F	0	0	3 (7)	-
Unable to contact by telephone	0	0	0	16 (100)
Cognitive test score, mean ± SD				
ACE-III (total 100)	72.8 ± 17.9	-	70.9 ± 13.8	68.4 ± 15.2
MOCA (total 30)	13.5 ± 3.5	-	11.2 ± 5.4	-
MOCA-Blind (total 22)	-	12 ± 3.7	-	-
Attendance rate, n (%)	21 (100)	6 (100)	35 (77.8)	12 (75)
Successful consultations*				
Yes, n (%)	19 (90.5)	4 (66.7)	35 (77.8)	12 (75)
No$^\$$, n (%)	2 (9.5)	2 (33.3)	10 (22.2)	4 (25)
Patient Satisfaction on 5 point Likert Scale - Agree or Strongly Agree, % of respondents (n=16)				
I was able to talk to the doctor as I would in a normal hospital appointment	94%		n/a	n/a
Overall, I was satisfied with my clinic appointment	100%			

Table 1: Demographics and outcomes of Memory Clinic Consultations.

*Denotes consultations which were not converted to a different mode of consultation, and which resulted in a clinical outcome.

$^\$$Includes non-attenders