Old age liaison psychiatry during COVID-19; an audit of pre- and mid-pandemic service provision

Rachel Wallace1,2  ·  Martha Finnegan1,2  ·  Elaine Greene1,2

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Abstract
Older adults in acute hospitals are uniquely vulnerable to mental illness during the COVID-19 pandemic. We describe two eighteen-week periods of specialised liaison psychiatry for older inpatients in a large teaching hospital, pre- and mid-pandemic. Service delivery went from almost completely via face-to-face consultation in the Routine period, to majority remote work in the Pandemic period. During the Routine period, 195 patients were assessed, and patients received a mean number of 2.6 consultations (range 1-15). In the Pandemic period, 197 patients were assessed and received 3.1 consultations on average (range 1-19). Patient age trended toward older in the Pandemic period, mean 77 years (SD 6.9) vs 78 years (SD 1.32) in the Routine period. There were more referrals for behavioural disturbance and confusion during the Pandemic period, and more diagnoses of Behavioural and Psychological Symptoms of Dementia, Delirium and Adjustment Disorder during the Pandemic period vs the Routine period.

Keywords  Psychiatry  ·  Older adults  ·  Pandemic  ·  COVID-19  ·  Liaison

Introduction
The first case of SARS-CoV-2 in Ireland was reported on 29 February 2020. Since then, acute Irish hospital services have reported dramatic changes in service provision in response to healthcare demands and public health measures [1]. Older people are at higher risk of requiring inpatient care and of dying from COVID-19 [2], and COVID-19 is directly associated with increased risk of neuropsychiatric symptoms and mental illness [3]. Additionally, independent of COVID-19 infection, older people are exposed to greater risk of mental illness during the ongoing pandemic [4].

In pre-COVID-19 hospital care, mental illness was common among older adult inpatients with rates of psychopathology of up to 60%, most commonly depression, delirium, and depression [5]. COVID-19 is associated with a difficult-to-treat delirium, management of which in older people is further complicated by necessary isolation protocols, sensory impairment, cognitive impairment, and the lack of access to many non-pharmacological options [6]. Given the psychological impact of the pandemic, the greater risk of death and serious illness, the pre-existing psychiatry needs of older inpatients, including the often-emergent needs of older adults with chronic enduring mental illness, as well as the complex neuropsychiatric effects of COVID-19 itself on older inpatients, the need for specialised liaison psychiatry for older inpatients has arguably never been so compelling.

Liaison psychiatry services across Ireland have adapted service delivery in response to hospital requirements [7], but there are no reports of the impact on specialised old age psychiatry liaison services. Here, we compare two 18-week periods of service provision pre- and mid-pandemic.

Methods
This service evaluation was approved and conducted in St James Hospital, an 865-bed university hospital. The hospital is located in the inner city and serves a national catchment area with multiple specialist tertiary and quaternary services. The old age psychiatry liaison service is provided by a small team of medical and nursing staff (2.6 Whole Time Equivalents (WTE) in total in the Routine period).
Consultation requests are made through a referral template on the Electronic Patient Record (EPR). Referrals record the date of request, reason for referral, clinical question to be answered, Mini-Mental State Examination Score (MMSE) [8], if a patient is delirious (Confusion Assessment Method (CAM) positive) [9], if there is a diagnosis of cognitive impairment, details of the admission, background medical history, and past psychiatric history. It is mandatory to input a numerical result for the MMSE to complete the referral.

We examined all referrals during the 18-week period from 29th October 2018 to 28th February 2019 (the Routine period) and compared this with data collected over the 18-week period 1st March 2020 to the 5th July 2020 (the Pandemic period). Data was collected using clinical notes and referrals on the electronic patient record and includes the number of referrals received, the content of the referrals, the time to review, the number of follow-up visits, interventions provided and final diagnosis, if any. Diagnoses were made by team members using ICD-10 criteria [10] and confirmed by the team consultant.

Results

Service provision

Staffing levels in the team were 2.6 WTE in the Routine period and 2.0 WTE in the Pandemic period (decreased secondary to COVID-19-related sick leave). During the Routine period, the mode of service provision was almost entirely face-to-face contact. Assessments were carried out in person with often limited background information and collateral histories were subsequently gained either face-to-face or by telephone contact with identified family or healthcare informants. In the Pandemic period, service provision was tailored to the contemporaneous local infection control policy. Electronic patient referrals were received as usual and triaged by our nursing team. During the Pandemic period audited (March to July 2020), patients with suspected or confirmed COVID-19 illness were assessed using either telephone or blue eye telepsychiatry review, depending on their cognitive ability and presentation. Liaison with treating teams was conducted by telephone or through clinical notes on EPR and patients continued remote consultations until the mandatory isolation period was completed or no longer required. During this Pandemic period, patients who were referred and were not suspected to have COVID-19 illness were offered telephone or blue eye telepsychiatry assessment if cognitively intact and relatively well. The majority of COVID-19-negative patients chose modified face-to-face assessments. Prior to face-to-face contact, background information was gathered from a variety of sources including the treating team, ward staff, previous notes, notes from other centres, and the patients’ general practitioners. Patients then had ward-based face-to-face assessments following the infection control policy at the time. This involved an interview of less than 15-min duration at a more than 2-m distance, by one team member, with appropriate PPE (scrubs, mask, and visor for the professional and a mask for the patient). Face-to-face follow-up consultations were conducted using the same precautions, but remote reviews continued to be encouraged for cognitively intact, clinically appropriate persons.

Referrals

In the Routine period, 195 new referrals were received and assessed during the audit period. In the Pandemic period, a total of 208 referrals were received. Of these, 11 were not assessed (under 65, n = 5; discharged prior to review, n = 4; too unwell for assessment, n = 1; declined to engage and non-urgent, n = 1). Of the 197 patients assessed in the Pandemic period, 40 patients were COVID-19 positive. Patients required a higher mean number of consultations in the Pandemic period, 3.1 consultations on average (range 1–19), vs. a mean of 2.6 consultations (range 1–15) in the Routine period. Patient age was slightly older in the Pandemic period, mean 77 years (SD 6.9) vs. 78 years (SD 1.32) in the Routine period. In both periods, female patients represented the majority of referrals, but there were more male referrals in the Pandemic period (56% in 2020 vs. 42% in the Routine period), see Table 1. Time from referral to first assessment increased slightly in the Pandemic period, a mean of 0.9 working days (SD 1.09) of referral vs. 0.81 working days (SD 1.04) in the Routine period. In both the Routine and Pandemic periods, the majority of referrals were received from medical teams, 53% in the Routine period vs. 55% in the Pandemic period, see Table 1.

The most common reason for referral was low mood in both time periods (48%, Routine, 41%, Pandemic). Of note, there were significantly more referrals in the Pandemic period than the Routine period for assessment of behavioral disturbance (31% vs. 15%) and confusion (12% vs. 9%) respectively. In both periods, patients referred for assessment had a range of cognitive ability from unimpaired to severely impaired score ranges on the MMSE, see Table 1.

Diagnoses and interventions

The most common diagnosis made during the pandemic was delirium (45%), followed by Behavioral and Psychological Symptoms of Dementia (BPSD) (28%), depression and adjustment disorders (15% respectively) see Table 2. The most common pharmacological intervention recommended was antidepressant therapy during both time periods studies. During the pandemic antidepressant medication was
prescribed in 28% of patients, antipsychotic therapy in 27% of patients and another psychotropic prescribed in 24% of patients. Rationalisation of medications was recommended in 31% of patients and no further intervention was recommended in 27% of patients.

**Discussion**

We examined two time periods, pre- and mid-pandemic, of a specialised liaison psychiatry service for the elderly in a large teaching hospital, and found similar overall numbers of referrals, but more referrals for behavioural disturbance and increased prevalence of BPSD in the Pandemic period vs Routine period. However, we did not observe a significantly greater prevalence of delirium diagnoses in the Pandemic period, contrary to our expectations. It is possible that the visibility of locally developed guidance for management of COVID-related delirium resulted in fewer referrals.

There were more cases in the Pandemic period where the required intervention recommended was psychotropic medication rationalization, but there were also more referrals requiring prescription of an antipsychotic or multiple psychotropics. Together with the observed increase in BPSD and behavioural disturbance, this may signal an increase in BPSD in the community, managed with increasing psychotropic medications pre-admission in the absence of routine home supports and respite, ultimately ending in hospital admission and psychiatry referral. Another explanation is that expression of BPSD in the community may have remained stable in the Pandemic period, but the stressors of unfamiliar inpatient environments, lack of family visitors, isolation protocols and use of PPE by staff led to increased expression of BPSD among inpatients vs the Routine period. A final consideration for explanation of high de-prescribing recommendations may also be the high risk of drug interactions between psychotropic mediation and medications prescribed for the management of COVID-19, for example.

| Table 1 Referrals and service characteristics in the Routine and Pandemic service periods |
|---|---|
| **Referrals** | Routine period, 2018 | Pandemic period, 2020 |
| Total patients referred and assessed | 195 | 197 |
| Mean number of consultations per patient | 2.6 (Range 1–15) | 3.1 (Range 1–19) |
| Mean number of reviews conducted via phone | 0 | 1.2 |
| Mean days between referral and assessment | 0.81 | 0.9 |
| % Female | 58 (n = 114) | 54 (n = 106) |
| Age, mean (SD) | 78 (1.32) | 77 (6.9) |
| **Source of referral n (%)** | | |
| Medical teams | 105 (53) | 108 (55) |
| Geriatric teams | 60 (31) | 57 (29) |
| Surgical teams | 30 (15) | 30 (15) |
| ICU/HDU | 2 (1) | 2 (1) |
| **Symptoms on referral n (%)** | | |
| Low mood | 97 (50) | 81 (41) |
| Behavioural disturbance | 29 (15) | 60 (30) |
| Anxiety | 29 (15) | 42 (21) |
| Psychotic symptoms | 22 (11) | 37 (19) |
| Confusion | 17 (9) | 24 (12) |
| Self-harm | 11 (6) | 4 (2) |
| Alcohol | 9 (5) | 4 (2) |
| Elation | 5 (3) | 1 (1) |
| Capacity | 1 (1) | 1 (1) |
| Other | 20 (10) | 54 (27) |
| **MMSE scores on referral n (%)** | | |
| 25–30 | 61 (31) | 57 (29) |
| 18–24 | 33 (17) | 42 (21) |
| 11–17 | 27 (14) | 19 (10) |
| < 11 | 74 (38) | 78 (40) |
| Zero or unaccounted for | 69 (35) | 69 (35) |
antiretrovirals [11]. The increase in referrals for behavioural disturbance may also be a consequence of significant rates of illness among healthcare workers, resulting in a limited capacity among remaining staff to provide non-pharmacological supports and to informally manage low-level, transient behavioural disturbance without specialist referral. The increased challenges in providing non-pharmacological interventions for patients presenting with behavioural disturbance in hospital during the pandemic has been widely recognized internationally [12]. It may also point to better identification of behavioural disturbance during a time of increased presence of medical staff on inpatient wards during the curtailment of their non-inpatient workload. Additionally, we suspect that there was a greater proportion of cognitively impaired patients present in hospital during the 2020 period. The lack of availability of either formal home supports or nursing home beds meant that it was difficult to impossible to safely discharge many patients with dementia from the inpatient setting.

The disruptive impact of COVID-19 on delivery of both acute hospital services and psychiatric care has been well-documented, but less attention has been paid to date to consequences for older, cognitively impaired people and their carers in the community, whose normal supports and activities were greatly curtailed. Interestingly, the rates of referral for ‘low mood’ were lower during 2020 and the rates of depression detected were also slightly lower in the Pandemic vs Routine period.

During the Pandemic period, patients required more consultations, many of which were conducted remotely, a new service development. Time to assessment increased slightly, likely explained by both reduced staffing and a new triage process. The integral role of telemedicine to decrease infection risk and increase the ability to provide health services to a larger cohort of patients has been well documented and implemented in the Irish setting since the outbreak of COVID-19 [13]. A hybrid model of care, with integration of telemedicine with usual care modalities, has been suggested for liaison services to optimally provide accurate assessment and treatment of mental illness in hospitals [14]. Liaison psychiatry for the elderly teams serve a uniquely vulnerable population with a high prevalence of both cognitive and sensory impairments as well as acute physical illness, with attendant challenges in engaging through technology.

We encountered numerous practical problems in our attempts to use telemedicine in this population. Therefore, although remote consultations were necessarily conducted in the Pandemic period, long-term integration of telemedicine may not be feasible or desirable for this subspecialty.

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### Data availability
Data cannot be made available due to the nature of service evaluation study approval.

### Declarations

#### Ethics approval and consent to participate
Ethics approval was waived by the Research Ethics Committee of St James and Tallaght Hospitals. Consent to participate was not required due to the service evaluation nature of the study.

#### Consent for publication
Consent to publish was provided by the St James’ Hospital Audit Committee and waived by the above-mentioned REC.

#### Conflict of interest
The authors declare no competing interests.

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