

## Main Article

Dr H Allen takes responsibility for the integrity of the content of the paper

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## Abstract

**Objective.** This study investigated how the coronavirus disease 2019 pandemic has impacted on presentations to ENT first-on-call services.

**Methods.** All appointments to a rapid access triage clinic from 1 June to 31 August in 2019 and 2020 were reviewed retrospectively and their reasons for consultation classified. A binomial proportion test was used to determine whether the proportions of consultations per presentation differed significantly between years. This analysis was repeated with the number of unique patients per presenting complaint.

**Results.** The proportions of nine reasons for consultation differed significantly between 2019 and 2020, including an increase in otitis media and nasal trauma presentations, and a decrease in otitis externa and tonsillitis presentations. Reattendances caused some variation in the frequency of certain diagnoses.

**Conclusion.** Our data suggest a shift in the presentations to first-on-call services, which may be a result of changes in patient behaviour and access to healthcare services.

## Introduction

The coronavirus disease 2019 (Covid-19) pandemic, especially during the initial stages of the outbreak in early 2020, brought about significant shifts in both patient behaviour and health service organisation. As the front line of the health service, primary care services saw substantial modifications in how they operated. In June 2020, 47.7 per cent of appointments at a general practitioner practice were via telephone, compared to 13.4 per cent of appointments in June 2019.<sup>1</sup> Changes in patient behaviours have been observed; for instance, significant proportions of patients were found to be delaying or avoiding both routine and emergency medical treatment. Of particular concern were individuals with more than two underlying health conditions, who were more likely to avoid or delay care.<sup>2</sup> The impact of these changes on both routine and urgent care can be seen in large reductions in both first out-patient attendances and urgent cancer referrals.<sup>3</sup>

Daytime first-on-call services have been identified by the 'Getting it right first time' guidance as having benefits in allowing ENT services to promptly manage certain non-elective out-patient ENT cases.<sup>4</sup> Given the acute to semi-acute nature of the cases seen by first-on-call services and the necessity of examination in diagnosing many ENT pathologies, it is likely their caseload will have been affected by the pandemic.

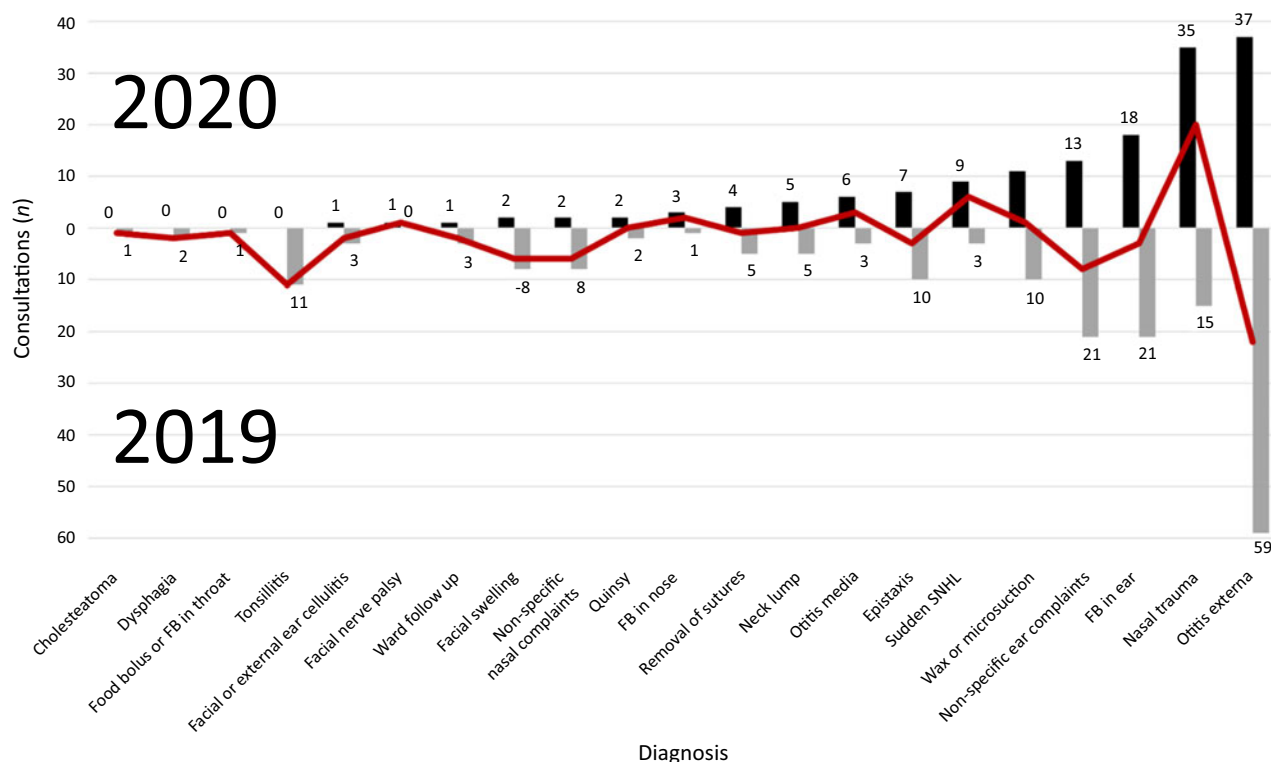
Previous research at this site (a rapid access triage clinic in a large teaching hospital in the UK) has characterised presentations to first-on-call services during the early stages of the pandemic.<sup>5</sup> This study aimed to examine how the Covid-19 pandemic has impacted on presentations compared to previous years.

## Materials and methods

The rapid access clinic is run by ENT senior house officers. At the beginning of their rotations in the hospital, they are given training regarding appropriate cases to be seen in the rapid access clinic. Prior to analysing the data, the authors formalised the presenting complaints considered to be appropriate to be seen in the rapid access clinic. This was done to reduce the impact of staff changes and rotation on the data analysed, and to ensure that we were comparing the same conditions in both timescales.

To obtain the 2020 data, the booking calendar for the rapid access clinic was accessed and all bookings in the period between 1 June 2020 and 31 August 2020 were reviewed. For each patient, their reason for attendance was classified into the pre-determined presenting complaint or diagnosis categories. Patients whose presenting complaints could not be classified because of insufficient data in the booking calendar were excluded. Additionally, referrals that did not meet the defined criteria to be seen in the rapid access clinic were excluded from both datasets.

As the online booking calendar was instituted in 2020, to obtain the 2019 data for the same period a request was made to the clinical audit department to conduct a



**Fig. 1.** Comparison of number of consultations by diagnosis. FB = foreign body; SNHL = sensorineural hearing loss

database search to find all patients admitted to the 'virtual' head and neck ward between the dates specified. These data initially included patients admitted under oral and maxillofacial surgery and ophthalmology departments, as the ward is shared between these three specialties. The data were filtered by date and time and length of stay, to remove patients not presenting within clinic hours or with stays longer than a day, thus indicating they had been admitted to the head and neck ward. The data were also filtered by diagnosis, to remove oral and maxillofacial surgery and ophthalmology patients, and to finally determine patients with diagnoses appropriate for the ENT e-clinic. These data were then reviewed by a second author to ensure agreement with the final cohort of patients to be included in the analysis.

As the diagnoses given by the clinical audit department were classified by clinical code, these were then matched into the categories as for the 2020 data.

In order to determine whether the proportion of patients presenting to the e-clinic with a particular diagnosis had changed significantly, a binomial proportion test was used. A binomial proportion test compares a sample proportion with an expected proportion to determine if the sample proportion varies significantly from the expected proportion. In this case, it determined whether the 'sample' 2020 proportions varied significantly from the 'expected' 2019 proportions. A  $p$  value of less than 0.05 was considered to be significant. All data handling and analysis were carried out using Microsoft Excel® spreadsheet software.

Patients with diagnoses such as necrotising otitis externa can present multiple times. Analysis was also carried out to compare the number of unique patients presenting with each diagnosis, to determine whether patients with a high number of reattendances were impacting on the result for each diagnosis.

## Results

In 2019, there were 192 presentations to the emergency clinic, consisting of 178 individual patients. In 2020, there were 157 presentations to the e-clinic, consisting of 144 individual patients.

### Indications for consultation

In both 2019 and 2020, the most common reason for consultation was otitis externa (Figures 1 and 2). In 2020, the next most common indication for consultation was nasal trauma, followed by foreign bodies in the ear. In 2019, non-specific ear complaints and foreign bodies in the ear were the next most frequent.

### Reattendances

Reattendances were associated with minor variation regarding the most common reasons for consultation. For example, in 2020, nasal trauma saw more unique patients than otitis externa, making it the most common reason for consultation by number of unique patients. Across both years, otitis externa saw the most reattendances. This high number of reattendances meant that while there was a statistically significant decrease in the number of attendances from 2019 to 2020, when considering only unique patients the difference was not significant.

### Changes in proportions of presentations

Otitis media, sudden sensorineural hearing loss, nasal trauma and nasal foreign bodies made up significantly greater proportions of presentations in 2020. Conversely, otitis externa, non-specific nasal complaints, facial swelling and tonsillitis made up significantly smaller proportions of presentations in 2020 (Tables 1 and 2).

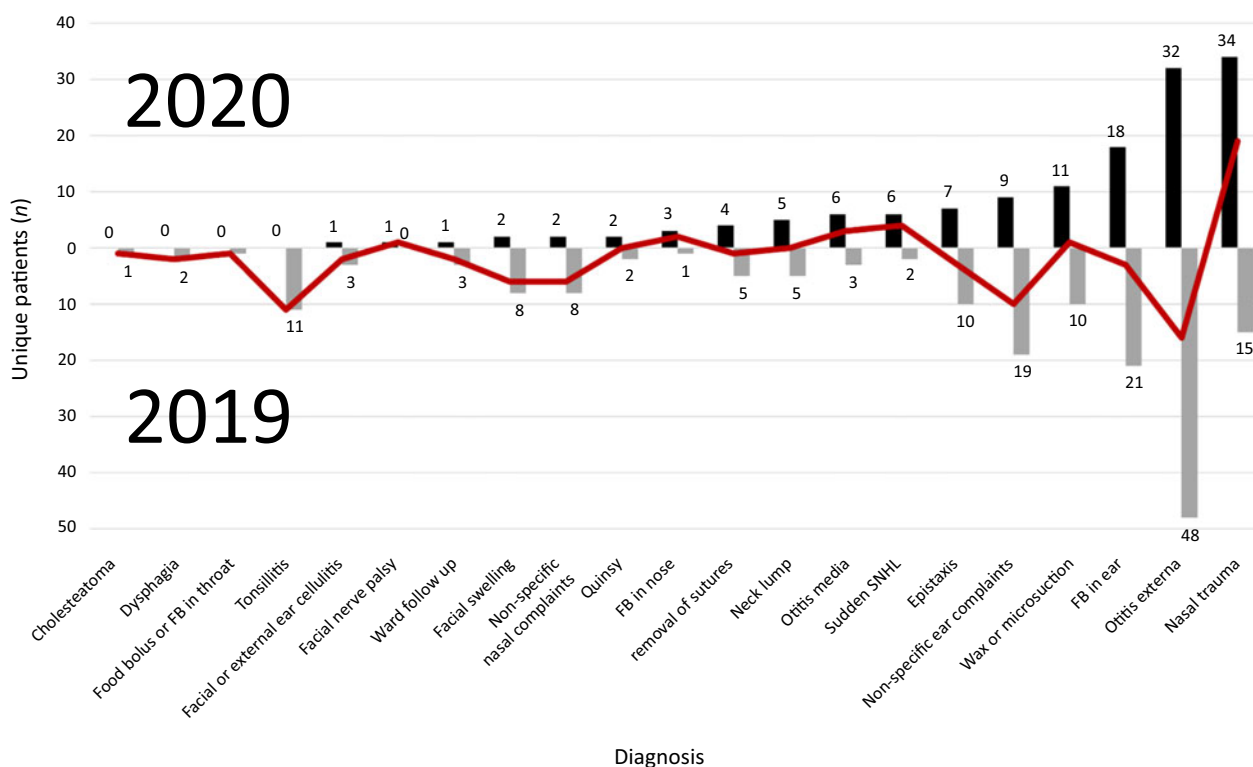


Fig. 2. Comparison of unique patients by diagnosis. FB = foreign body; SNHL = sensorineural hearing loss

Table 1. Breakdown of number of attendances by presenting complaint in 2019 and 2020

Diagnosis	2020 Attendances (n)	2019 Attendances (n)	Change	Binomial test (p value)
Cholesteatoma	0	1	-1	0.440
Dysphagia	0	2	-2	0.193
Epistaxis	7	10	-3	0.424
Facial or external ear cellulitis	1	3	-2	0.295
Facial nerve palsy	1	0	1	<0.001*
Facial swelling	2	8	-6	0.039*
Food bolus or FB in throat	0	1	-1	0.440
FB in ear	18	21	-3	0.453
FB in nose	3	1	2	0.050*
Nasal trauma	35	15	20	<0.001*
Neck lump	5	5	0	0.389
Non-specific ear complaints	13	21	-8	0.175
Non-specific nasal complaints	2	8	-6	0.039*
Otitis externa	37	59	-22	0.029*
Otitis media	6	3	3	0.038*
Quinsy	2	2	0	0.487
Removal of sutures	4	5	-1	0.611
Sudden SNHL	9	3	6	0.001*
Tonsillitis	0	11	-11	<0.001*
Ward follow up	1	3	-2	0.295
Wax or microsuction	11	10	1	0.197

\*Indicates statistically significant result. FB = foreign body; SNHL = sensorineural hearing loss

### Discussion

It is likely some of these changes can be explained by the dramatic societal changes brought about by the social isolation

measures introduced by the UK government to limit the spread of Covid-19 and the similar measures taken by the health service.

**Table 2.** Breakdown of number of unique patients in 2019 and 2020

Diagnosis	2020 unique patients (n)	2019 unique patients (n)	Change	Binomial test (p value)
Cholesteatoma	0	1	-1	0.444
Dysphagia	0	2	-2	0.196
Epistaxis	7	10	-3	0.436
Facial or external ear cellulitis	1	3	-2	0.300
Facial nerve palsy	1	0	1	<0.001*
Facial swelling	2	8	-6	0.010*
Food bolus or FB in throat	0	1	-1	0.444
FB in ear	18	21	-3	0.435
FB in nose	3	1	2	0.048*
Nasal trauma	34	15	19	<0.001*
Neck lump	5	5	0	0.380
Non-specific ear complaints	9	19	-10	0.049*
Non-specific nasal complaints	2	8	-6	0.041*
Otitis externa	32	48	-16	0.116
Otitis media	6	3	3	0.036*
Quinsy	2	2	0	0.482
Removal of sutures	4	5	-1	0.620
Sudden SNHL	6	2	4	0.006*
Tonsillitis	0	11	-11	<0.001*
Ward follow up	1	3	-2	0.914
Wax or microsuction	11	10	1	0.187

\*Indicates statistically significant result. FB = foreign body; SNHL = sensorineural hearing loss

The proportion of nasal trauma presentations increased significantly from 2019 to 2020. Lockdown has been associated with an increased incidence of domestic violence,<sup>6</sup> which may have contributed to this. For older adults, enforced isolation and decreased activity result in increased physical frailty, in turn increasing the risk of falls and subsequent traumatic injury.<sup>7</sup>

The number of tonsillitis presentations reduced from 11 in 2019 to 0 in 2020. As the infections causing tonsillitis are spread both via close contact and respiratory droplets, its spread was likely inhibited by the same lockdown measures designed to reduce the spread of Covid-19, another respiratory infection.

The proportion of otitis media presentations increased significantly from 2019 to 2020. Otitis media is managed almost entirely within primary care. This increase in cases presenting to secondary care may reflect patients' difficulty in obtaining a face-to-face consultation and hence appropriate treatment with their general practitioner. This could also be explained by concerned general practitioners, unable to examine patients face-to-face, referring patients with suspected complications such as mastoiditis to secondary care for further examination.

The increase in the proportion of patients presenting with sudden sensory neural hearing loss is attributable to our centre's participation in the 'SeaSHeL' (idiopathic Sudden onset Sensorineural Hearing Loss) National Prospective Cohort study; patients in this study were seen in an emergency clinic slot.

The proportions of patients presenting with facial swelling and non-specific nasal complaints both significantly decreased. In addition, the number of patients presenting with non-specific ear complaints significantly decreased, although the number of

reattendances in this category resulted in a non-significant difference in the number of consultations. These trends could be attributable to the public's reluctance to consult for issues they perceive as non-urgent. The significant impact of reattendances may be a result of diagnostic uncertainty, given the wide differential for facial swelling and the lack of a final diagnosis in the 'non-specific nasal complaints' category.

- This paper builds on previous research at the same centre, which characterised non-coronavirus disease 2019 presentations to a first-on-call service during the 2020 lockdown
- The current research compared presentations during the pandemic to those a year prior, placing the findings in a wider context
- The results suggest a shift in the types of presentations during the pandemic
- This shift may be due to changes in patient behaviour and healthcare service access during the pandemic
- Transmissible infections decreased, likely due to social distancing, and semi-acute and chronic complaints decreased, suggesting reluctance to access healthcare
- Nasal trauma increased, which may be indicative of a rise in domestic violence in lockdown

The most common presentation across both years was otitis externa, although there was a significantly lower proportion of attendances in 2020. This may suggest that this condition can still be managed effectively in primary care despite a reduction in face-to-face consultation. However, the high number of attendances reflects the necessity of aural toileting in the management of infection and the continued inappropriate use of oral antibiotics in treating otitis externa; a high proportion of our patients received oral rather than topical preparations before presenting to the emergency clinic.

For each presentation, the results were generally consistently significant or non-significant across the two years, both for the number of consultations and the number of patients, suggesting that reattending patients were not skewing the results. The main exception is otitis externa, which had a high number of reattendances in 2019. This could be a result of patients presenting with more serious pathologies, such as necrotising otitis externa, which are often more difficult to treat. Multiple attendances may be required before a diagnosis is reached and optimal management is achieved. Alternatively, patients may be more reluctant to attend or reattend hospital given the risk of catching Covid-19, resulting in resolution of the condition before reattendance.

### Conclusion

Our data suggest a shift in the pathology of patients presenting to first-on-call ENT services during the Covid-19 pandemic, which may be due both to changes in patient behaviour and access to health services as a result of social isolation measures. Decreases in the proportions of semi-acute and chronic complaints add to the evidence suggesting that people have been more reluctant to access healthcare, while an increase in nasal trauma presentations may be indicative of the social challenges of domestic violence and isolation in lockdown.

An increase in the proportion of otitis media presentations could relate to the challenges of telephone consultations in primary care.

**Competing interests.** None declared

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