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## Mixed messages: Do automated messages in General Practice tell parents they are open for unwell children in the COVID-19 era?

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### Abstract

**Background** - Across the UK there has been a reduction in children and young people (CYP) presenting acutely to hospital during the COVID-19 pandemic. Automated telephone messages have been used as a tool by General Practice to direct service users to the correct service or point of care for some time. As such, it is unsurprising that automated messages may be used to try to address some questions about the pandemic prior to speaking to a call handler at a practice.

**Aim** - To investigate the initial advice that parents and carers may be receiving from their first point of contact when telephoning their local General Practice (GP) and whether this considered CYP specifically.

**Design and Setting** - This descriptive study was conducted in response to rapid changes which GP have had to undergo in response to the current global pandemic.

**Method** - GPs within four Clinical Commissioning Groups (CCGs) in England were telephoned and the researchers recorded whether they had automated messaging and whether certain key pieces of information were given in these messages. It was particularly noted whether any age segmentation was applied in the advice given.

**Results** - Of the 537 practices included, 81.9% (n=440) had an automated message, and of those, 65.9% (n=290) mentioned 'coronavirus' or 'COVID-19' in their message. Only 1.1% (n=5) practices mentioned children specifically.

**Conclusion** - Adapting the messaging that parents receive when they first contact GP to include CYP would be possible and may reduce the number of unwell CYP who have delays in receiving medical care.

**Keywords:** Child Health, Automated Messaging, COVID-19

**Abbreviations:** CYP-Children and Young People; RCPCH-Royal College of Paediatrics and Child Health

### Introduction

Across the UK there has been a reduction in the number of children and young people (CYP) presenting acutely to hospital during the COVID-19 pandemic. This was highlighted in a recent survey of consultant paediatricians in the UK and Ireland<sup>1</sup>. It showed that not only were fewer children being brought to emergency departments, but there were also delays in acute presentation of critical illness (such as sepsis and diabetic ketoacidosis) and reductions in referrals for cancer treatment and child protection assessments<sup>1</sup>.

The reasons for the reduced attendance are thought to be related to the initial government messaging of *Stay Home, Protect the NHS, Save Lives*<sup>2</sup>. However, as it became clear that not only parents, but other potential patients were not presenting even if warranted, the government adjusted the messaging to make it clear that the NHS was still open for urgent care that was not just COVID-19 related.

In CYP the cause of delayed presentations were likely to be manifold: parents following the initial governmental message; families concerned that hospitals were unsafe; the initial presumption that COVID-19 in CYP would present in the same manner as in adults potentially leading to primary care and NHS 111 pathways channelling them to domestic isolation. It may be that some delays in hospital presentations

may be due to reduced referrals from primary care, and that in turn may be influenced by fewer CYP accessing their local General Practice facility. The 'Take the Temperature' survey which assessed the views of 1535 respondents (predominantly aged 16-25 years) found, "85% knew that they shouldn't go to a doctor if they got the virus"<sup>3</sup>. However, it is possible that CYP and parents may not be able to make the often challenging differentiation between symptoms of COVID-19 and what may be another illness in need of medical attention.

There has been a significant increase in pressure on many aspects of the health service, including on primary care. Automated telephone messages have been used as a tool by General Practice to direct service users to the correct service or point of care for some time. As such, it is unsurprising that automated messages may be used to try to address some questions about the pandemic prior to speaking to a call handler at a practice. In addition to this, significantly limiting face to face contact with patients during the pandemic in Primary Care has been essential to prevent the potential spread of the virus and closure of services. We aimed to review the initial advice that parents and carers may be receiving from their first point of contact when telephoning their local General Practice and whether this considered CYP specifically.

## Methods

All General Practices within four Clinical Commissioning Groups (CCGs) in NHS Sheffield CCG, NHS Manchester CCG, NHS Leeds CCG and NHS Birmingham and Solihull CCG were identified using the NHS website. These were chosen as they are large cities, with diverse populations.

Practices were only contacted within their standard opening hours by three of the authors, within a four-day time period (7<sup>th</sup> July 2020 to 10<sup>th</sup> July 2020). The data collected is shown in table 1. All practices were telephoned and identified as to whether they had the following (see table 1):

Percentages, means, standard deviation, and standard error of the mean were calculated. Proportions were compared using Fisher's Exact test to calculate statistical significance of some data.

In total, 549 practices were listed under these four CCGs. 12 practices were excluded (see table 2), leaving 537 practices from which we could obtain results.

Table 3 demonstrates that of the 537 practices, 81.9% (n=440) had an automated message. When an automated message was present, the mean length was 54.1 seconds (SD = 26.9). Of all of the practices with an automated message, 65.9% (n=290) mentioned 'coronavirus' or 'COVID-19' in their message, 34.8% (n=153) gave specific advice to stay away from the practice if the caller had symptoms of COVID-19, 27.3% (n=120) gave advice about self-isolating with COVID-19 symptoms, and 38.4% (n=169) re-directed callers to telephone NHS 111 or visit the NHS 111 website for advice on worsening symptoms. Only 1.1% (n=5) practices mentioned children specifically. Of these, two said that the advice about self-isolating also applied to children, and the other three said the following:

"...anyone with a new continuous cough or fever of 37.8 degrees centigrade or higher must self-isolate for 7 days. This includes children. Travel history is now irrelevant. Anyone with these symptoms who are well are to stay at home and do not need to ring 111 or be tested. Anyone with these symptoms who are unwell should go to NHS 111 online for advice. You must not come to the surgery..."

"...anyone with a new continuous cough and/or a high temperature should stay at home and self-isolate for the next 7 days. This includes children. All other members of your household will need to self-isolate for 14 days even if they remain asymptomatic. Do not attend the university health service, hospital, pharmacy or other NHS service in person. If you have these symptoms, use the NHS 111 online coronavirus service to find out what to do. Do not call NHS 111 unless you cannot get help online..."

"...anyone with a new continuous cough, a fever of 37.8 degrees or higher, or a loss or change to your sense of smell or taste must self-isolate for 7 days. This includes children. Anyone with these symptoms who are well must stay at home and order

a COVID-19 test... Anyone with these symptoms who are unwell should go to 111 online for advice. You must not come to the surgery..."

Sheffield CCG had the fewest number of automated messages compared with all the other CCGs:

- Sheffield CCG (n=75, 70.8%) vs Leeds CCG (n=119, 88.8%) p<0.0005;
- Sheffield CCG (n=75, 70.8%) vs Manchester CCG (n=74, 81.3%) p=0.0974;
- Sheffield CCG (n=75, 70.8%) vs Birmingham and Solihull CCG (n=172, 83.5%) p=0.012.
- Sheffield CCG had the most automated messages with advice to stay away from the practice compared with the other CCGs:
- Sheffield CCG (n=44, 58.7%) vs Leeds CCG (n=34, 28.6%) p<0.0001;
- Sheffield CCG (n=44, 58.7%) vs Manchester CCG (n=26, 35.1%) p=0.0052;
- Sheffield CCG (n=44, 58.7%) vs Birmingham and Solihull CCG (n=49, 28.5%) p<0.0001.
- Manchester CCG had the fewest messages with advice to self-isolate compare with the other CCGs: Manchester CCG (n=9, 12.2%) vs Leeds CCG (n=30, 25.2%) p=0.0415;
- Manchester CCG (n=9, 12.2%) vs Sheffield CCG (n=26, 34.7%) p=0.0018;
- Manchester CCG (n=9, 12.2%) vs Birmingham and Solihull CCG (n=55, 32%) p=0.0009. See Table 4.

Automated messages were all in English (although a small number of practices provided a translation in other languages after the message) and orated by a mixture of computerised voices, doctors or staff from the practice. Many automated messages indicated a range of options for the caller to be re-directed to a different line (such as to arrange an urgent appointment or to obtain a repeat prescription) but for the purposes of this study, the key data points listed in table 2 were the only parts of the message which were recorded.

There was no statistically significant difference in mean message length between the four CCGs. Sheffield CCG 51.7 seconds (95% confidence interval 46.5 to 56.8); Leeds CCG 55.7 seconds (95% confidence interval 51.2 to 60.1); Manchester CCG 58.0 seconds (95% confidence interval 52.2 to 63.7); Birmingham and Solihull CCG 52.4 seconds (95% confidence interval 48.7 to 56.0) (p<0.05).

## Discussion

This study found that very few practices specifically mentioned children in their automated messaging in relation to the current pandemic. 81.9% of the practices contacted had automated telephone messaging. Of these, 65.9% mentioned COVID-19 in their message but only 1.1% (n=5) specifically mentioned children in their message.

**Table 1:** Questions asked during data collection

Was there an automated message?	Yes/No
Was COVID-19 was mentioned in the automated message?	Yes/No
Was there was advice to stay away from the practice if COVID-19 symptoms present?	Yes/No
Was there advice to self-isolate with COVID-19 symptoms	Yes/No
Was there any age segmentation or differing advice for children?	Yes/No
If worsening COVID-19 symptoms, was there advice to go to NHS website or telephone NHS 111 service?	Yes/No
What was the length of the automated message (In seconds)?	

**Table 2:** Reasons for exclusion from analysis

Reason for exclusion from analysis	Number of practices
Private screening clinic	1
Duplication of practice already listed	5
Permanently closed	1
Call failed or no telephone number available	4
Line busy despite repeated attempts	1
Total	12

**Table 3:** Analysis of results from 537 GP practices

ALL GPs COMBINED	Automated message	Coronavirus mentioned in automated message	Advice to stay away from practice if coronavirus symptoms	Advice to self-isolate with coronavirus symptoms	Did have age segmentation	Advice if worsening COVID-19 symptoms to go to NHS Website or phone 111	Length of automated message (seconds)
TOTAL	440	290	153	120	5	169	23694
% of surgeries contacted	81.9%	54.0%	28.5%	22.3%	0.9%	31.5%	
% of surgeries with automated message	100.0%	65.9%	34.8%	27.3%	1.1%	38.4%	
Mean							54.1
Standard Deviation							26.9

**Table 4:** Breakdown of results for individual CCGs

CCG	% of surgeries with automated message	% Coronavirus mentioned in automated message	% Advice to stay away from practice if coronavirus symptoms	% Advice to self-isolate with coronavirus symptoms	% Did have age segmentation	% Advice if worsening Covid-19 symptoms to go to NHS website or phone 111	Mean length of message in seconds (95% CIs)
Sheffield (n=106)	70.8 (n=75)	62.7 (n=47)	58.7 (n=44)	34.7 (n=26)	4.0 (n=3)	34.7 (n=26)	52 (46-57)
Leeds (n=134)	88.8 (n=119)	62.2 (n=74)	28.6 (n=34)	25.2 (n=30)	1.7 (n=2)	53.8 (n=64)	56 (51-60)
Manchester (n=91)	81.3 (n=74)	68.9 (n=51)	35.1(n=26)	12.2 (n=9)	0 (n=0)	56.8 (n=42)	58 (52-64)
Birmingham and Solihull (n=206)	83.5 (n=172)	68.6 (n=118)	28.5 (n=49)	32.0 (n=55)	0 (n=0)	21.5 (n=37)	52 (49-56)

38.4% of practices re-directed callers to either the NHS website or NHS 111 telephone advice line. The website advice states, "Call 111 if you're worried about a baby or child under 5. If your child seems very unwell, is getting worse or you think there's something seriously wrong, call 999"<sup>4</sup>. There is also further advice particularly focussed upon babies and very young children on the website. This is helpful advice for parents or carers of an unwell child and it is important that it is

emphasised. However, it relies upon parents and carers to make an assessment as to when something may be getting worse or is 'seriously wrong'. Whilst this would increase the workload for

primary care, it perhaps would be more beneficial for CYP, particularly those under 5 years to be triaged by a call handler at the local practice and have a much lower threshold for a telephone consultation with a clinician at the surgery or advice to attend hospital.

This study provides a timely representation of first point of care health advice which is being provided in England during the current pandemic. It seeks to look specifically at automated advice given to CYP and whether this may contribute the delays in presentation to secondary care for acutely unwell CYP which have been seen.

It is difficult to know for certain how this may be directly attributable to the reported delays in presentation of serious illness.

Practices from within only four CCGs were contacted in this study. However, this covered a sizable number of different practices, 537 in total, all of which were in large cities and towns in England. It is notable that we did not assess any advice that may have been given by those answering the telephone call. Once the automated message had been completed there may have been opportunity to provide targeted advice. Also, for the 18.1% (n=97) practices where there was no automated message, we do not know if any further advice is relayed by those answering the call. It may have been at this point when age specific advice might have been received.

To our knowledge there have been no other studies looking at the spectrum of automated messages in General Practice during the COVID-19 pandemic.

This study highlights the need for tailored and consistent advice for CYP specifically during the COVID-19 pandemic.

There is significant variation in the advice being given by different General Practices. The Royal College of General Practitioners (RCGP) states that ‘as with all patients, children should be triaged prior to any face to face consultation’ and ‘every effort should be made to avoid face to face assessment’<sup>5</sup>. It is very important to note that the pandemic has been an extremely challenging time for General Practice with rapid adaptations to working being made in a very short time period. There have been repeated changes in guidance which highlight the challenges faced by General Practice in providing the most up to date information. Since 18<sup>th</sup> February 2020, patients with a travel history or suspected symptoms were advised to call NHS 111 and to not go to their local General Practice, pharmacy or hospital<sup>6</sup>. On 5<sup>th</sup> March 2020, General Practitioners (GPs) were advised by NHS England to switch to a telephone-only triage system, to reduce the change of potentially infected patients attending the practice<sup>7</sup>. The latest NHS England Standard operating procedure for General Practice (at the time of writing; 24 June 2020, Version 3.3)<sup>8</sup> offers specific advice for GPs regarding children; “Prolonged illness and/or severe symptoms should not be attributed to COVID-19 and should be evaluated as usual”. The rapidly changing advice, coupled with large amounts of uncertainty and anxiety among staff in Primary Care may have contributed to the challenges of providing consistent, standard information for service users such as through automated messaging. For some practices, a telephone triage service was a completely novel way of working, making this large process change over a very limited time frame must have been extremely challenging.

Logistically, the ability to alter automated telephone messaging is often not straightforward and, in many cases, requires outsourcing of this to external companies. This requires an

already pressured service to keep up to date with rapidly altering advice whilst arranging for a staff member to formulate a new script and then arrange for this recording to be amended. A process which would have been required to be repeated multiple times over the preceding months, due to regularly changing government messaging.

Although evidence continues to emerge, we know that COVID-19 is less likely to develop into serious illness in healthy children and adolescents compared to adults<sup>9</sup>.

There have been concerns regarding a serious but rare complication of COVID-19 infection in children PIMS-TS (paediatric inflammatory multisystem syndrome temporarily associated with SARS-CoV-2). A recent paper in the *Lancet*<sup>10</sup> reviewing children admitted to PICUs in the UK between 1<sup>st</sup> April 2020 and 10<sup>th</sup> May 2020 suggested that incidence of PIMS-TS requiring intensive care was around 1.5%. However, at the time only hospitalised patients were being tested for COVID-19 in the UK, so this does not take into account the number of children who may have had COVID-19 but were not tested. As a result, it is likely to be an overestimation. Whilst this condition can be serious, the likelihood of a child progressing to PIMS-TS after developing Covid-19 remains low. The greater concern is delayed presentation of other serious illness.

As other publications have suggested, there is a greater risk that children may delay in presenting to hospital or be delayed in being referred to secondary care for important investigations due to the widespread ‘stay away’ advice, seen in both the UK<sup>11</sup> and in Europe<sup>12</sup>.

We suggest that adapting the messaging that parents or carers receive when they first contact their GP to include CYP would be possible and may reduce the number of unwell CYP who have delays in receiving medical care. It would also be important to aim to have consistent messaging across different practices, advice which perhaps should be standardised at a national level. This could greatly assist those working in Primary Care to be able to provide accurate and up to date messaging for their patients. Any adaptations required could be made by individual CCGs to take account of local differences.

Increased amounts of wider public health messaging directed towards encouraging parents and carers to seek medical advice if they are worried about their child, despite the pandemic, are paramount to aid in getting this vital message to those caring for CYP. It is important that additionally where appropriate, this advice is also available in languages other than English.

This study does not prove a direct link between the advice provided at the first point of contact in Primary Care and the delays in CYP presenting to hospital with serious illness. We do not know what influence the advice on automated messages has over CYP and their parents in their decision making about accessing care. Future research should seek to answer this

question specifically, perhaps involving directly interviewing CYP and their parents or carers.

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#### Competing Interests

Dr Simon Clark is the current Vice President for Policy at the Royal College of Paediatrics and Child Health (RCPCH). All other authors have no other relationships or activities that could appear to have influenced the submitted work.

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