

Descriptive analysis of a Community Paediatrics Hybrid Telemedicine/ Face to Face service during implementation of community mitigation strategies in response to the COVID-19 pandemic

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Abstract

Objective

To describe reasons patients accessed the hybrid / telemedicine consultation service during the implementation of community mitigation strategies for COVID-19.

Methods

Patients accessing the hybrid / telemedicine consultation service during September to October 2020 were included. This was a descriptive study looking at morbidity data for these patients. Clinical data were recorded for all community paediatric service patients and percentages of patients accessing the service were recorded. Odds ratios were calculated to compare subgroups.

Results

A total of 204 consultations were enrolled. Of these, 114 (55.9%) telemedicine and 90 (44.1%) face to face. 99 (48.5%) were new patients. The odds that parents of new patients attending face-to-face consultation was lower compared to existing patients (OR 0.27; 95% CI 0.15-0.49; P 0.0001).

A total of 7 children (3.4%) attended face-to-face to complete assessments. 10 (5%) children attended but were not required to be present.

Of all the patients, 42 (20.6%) attended for Disability Assistance Grant (DAG) forms to be completed. The odds that a parent of a child with Autism Spectrum Disorder (ASD) or suspected ASD attended regarding the DAG form was higher compared to the rest of the group (OR 2.25; 95% CI 1.1-4.5; P 0.02).

Other reasons for consultations included 22 (10.8%) consulted for Special Educational Needs (SEN) medical reports, 34 (16.6%) attended for prescriptions: 14 (7%) Risperidal and 12 (6%) Methylphenidate and 8 (4%) consulted regarding face masks. 6 (3%) consulted for behavioural problems.

Conclusion

During COVID-19, community paediatric consultations were predominantly telemedicine and face-to-face without the child. Reasons for consultations included, DAG forms, prescriptions, SEN reports, behavioural

problems and letters regarding face masks. Further research regarding the effectiveness of the hybrid telemedicine/face to face system is required.

Introduction

Worldwide, the implementation of community mitigation strategies in response to the COVID-19 pandemic has affected the regular delivery of many health services resulting in the adoption of telemedicine consultations.¹

The community paediatric service SWRHA provides a specialised service for children with developmental concerns as well as general paediatric issues. Ninety percent of the referrals to the service are for developmental concerns.² According to the CDC, 17% of children ages 3-17yrs may have some form of developmental disability.³ Children with developmental concerns who attend the service are not acutely unwell but require assessment to determine the multidisciplinary supports which may improve their developmental outcomes.

During the implementation of community mitigation strategies for COVID-19 from March to May 2020, the regular 'face to face' service was reduced to once per week for only urgent issues and existing patients were provided with phone numbers for telemedicine consultations where necessary. All new patients were offered an initial telemedicine consultation.

We observed that many existing patients attended 'face to face' mainly for prescriptions, and to have Disability Assistance Grant (DAG) Medical Forms filled out. Some attended for Special Educational Needs (SEN) Medical reports for school. Many of the Telemedicine consultations for existing patients were for advice for behavioural problems. Managing children's behaviour during periods of 'lock down' is important especially in children with pre-existing developmental conditions.⁴ Some telemedicine consultations were regarding medications. We generally avoided 'face to face' consultations with children present except for a few urgent issues.

We proposed to examine further the reasons that patients access the service for 'face to face' and for telemedicine consultations during the period of implementation of COVID-19 community mitigation strategies from

September to October 2020. In August 2020, schools were closed for face to face classes. Beaches, rivers, water parks and places of worship were closed. The public service and public transport were reduced to 50% capacity.⁵ Face mask wearing was mandatory excluding children under 8yrs and some persons with physical or mental illness, impairment or disability.⁶ These mitigation strategies continued into September and October 2020. This research would help us analyse the service delivery during the 'lock down' period and help with improving the service delivery during future periods of community 'lock down'.

Methods

Study population

All patients accessing the community paediatric service during September 1st to October 31st 2020 during the implementation of community mitigation strategies for COVID-19.

Sample size

Based on the Community Paediatrics Annual Data 2018 to 2019, an average of 167 patients was seen per month. It was expected that over the two month period of this study, 334 patients would be seen.

Inclusion Criteria

All patients accessing the service during September 1st 2020 to October 31st 2020 during the implementation of community mitigation strategies for COVID-19. Patient ages range from the first year of life to twenty five years of age. Patient diagnoses include, Autism spectrum Disorder (ASD), Attention Deficit Hyperactivity disorder (ADHD), Learning disability (LD), Cerebral Palsy (CP), Down syndrome (DS) and other genetic syndromes, Global Developmental Delay (GDD).

Exclusion Criteria

Patients seen outside the period of September 1st to October 31st 2020.

Data collection method

This was a descriptive prospective study looking at morbidity data for patients attending the clinics. The telemedicine consultations were via the telephone and did not include video calls. Online interface via Zoom, WhatsApp and other online platforms were not available.

Telephone calls involved the parent and not the child. Data were recorded in a patient database on Microsoft Excel spreadsheet to inform for the annual service report. The data from this database on Microsoft Excel™ spreadsheet was analysed using Excel spreadsheet. The percentages of patients accessing the service for various reasons were recorded. Odds ratios were calculated when analysing the reasons patients from various morbidity subgroups attended the service. A p-value of <0.05 was considered statistically significant.

Approval

Ethics approval was obtained from the South West Regional Health Authority Ethics Committee.

Results

A total of 204 consultations were carried out during the study period.

Of these, 114 (55.9%) were telemedicine consultations and 90 (44.1%) were face to face consultations.

A total of 99 (48.5%) were new patient consultations (71 telemedicine consultations and 28 face to face). 89% of the new patients booked were contactable for telemedicine consultation.

Of all patients, 105 (51.5%) were existing patients already followed up in the clinic (43 telemedicine consultations and 62 face to face).

The odds that new patients attended for a face to face consultation was lower compared to existing patients (OR 0.27; 95% CI 0.15-0.49; p 0.0001).

Gender and Age

Of face to face consultations, 71 (78.9%) were Male. For new patient telemedicine consultations, 53 (74.6%) were Male.

Ages ranged from 0-25 years. 86 (42%) were <5 years, 79 (39%) 5-12 years, 37 (18%) 12-19 years and 2 (1%) 19-25 years.

Face to Face consultations with the child present

The child was present for 17 (18.9%) of the 90 face to face consultations. 7 patients attended to complete assessments and were required to be present. 10 accompanied the parent and were not required to be present.

Morbidity

Major morbidities included 99 (48.5%) suspected (38) or confirmed ASD (61), 47 (23%) suspected (14) or confirmed LD (33) and 32 (15.7%) suspected (9) or confirmed ADHD (23). 86 (42%) had speech delay and 34 (16.6%) had GDD. 11(5.4%) has CP and 5 (2.5%) DS.

Reasons for Consultation

As mentioned above, 99 (48.5%) were for new patient consultations. 37 (37%) of these were for suspected ASD. 13 (13%) for suspected LD. 9 (9%) for suspected ADHD. 54 (54%) had speech delay and 14 (14%) had GDD.

Majority of the patients [42 (20.6%)] attended for Disability Assistance Grant forms to be filled out. 27 of these patients were confirmed or suspected ASD. The odds that a parent of a child with ASD or suspected ASD attended for the DAG form to be filled was higher compared to the rest of the group (OR 2.25; 95% CI 1.1-4.5; P 0.02).

Also, 22 (10.8%) attended for SEN medical reports for school. The majority of these children had ASD, ADHD or LD.

A total of 34 (16.6%) attended for prescriptions; 14 (7%) were for Risperidal and 12 (6%) for Concerta (Methylphenidate). Other medications included Melatonin, Sodium Valproate, Carbamazepine, Clonazepam, Diazepam, Lorazepam, Salbutamol and Beclomethasone.

Risperidal was prescribed for aggressive behaviour. The odds that a patient with ASD attended for Risperidal was much greater compared the rest of the group (OR 10.2; 95% CI 2.7-38); P 0.0005). Methylphenidate was prescribed for children with ADHD. Sodium Valproate and Carbamazepine were prescribed as antiepileptics (4 patients) as well as for mood stabilisation (5 patients).

Twenty five children (12.2%) had existing behavioural problems but 6 (3%) consulted us regarding active behavioural problems. 5 of these patients had ASD. The odds that a child with ASD attended for an active behavioural concern was greater compared to the rest of the group but was not statistically significant (OR 4.1; 95% CI 0.4-36; P 0.2).

Eight children (4%) attended for letters regarding the child's inability to wear face masks. 6 patients had ASD, 1 ADHD and 1 GDD. The odds that a patient with ASD attended for a face mask letter was greater compared to

the rest of the group but not statistically significant (OR 2.5; 95% CI 0.5-12.9; P 0.2).

Seven patients (3.4%) attended to complete assessments initiated by telemedicine consultations.

Discussion

Jeste *et al* looked at changes in access to healthcare services for individuals with intellectual and developmental disabilities during COVID-19 restrictions. They found that COVID-19 restrictions affected access to services and telemedicine may provide opportunities for delivery of care during restrictions as well as after restrictions have been lifted.⁷ COVID-19 restrictions prompted us to implement a telemedicine service along with the face-to-face service. We sought to restrict to a minimum the face to face consultations with children present.

Based on our 2019-2020 annual data we would have expected about 334 patients to access the service over a two-month period.² In the study 204 patients accessed the service. 89% of the booked new patients were contactable by telephone. The average attendance of new patients prior to the COVID-19 restrictions was 70% of booked new patients.² A larger number of new patients were contacted through telemedicine consultations but the completion of assessments was deferred to avoid children attending the health facility unnecessarily. Health advice was given to families and recommendations made but only 7 children were requested to attend to complete assessments. Further research regarding patient satisfaction with the telemedicine service would be required. Further research regarding the impact of deferring completion of assessments would be required.

Apart from new patient consultations, the commonest reason for a consultation was for the Disability Assistance Grant (DAG) Form to be filled out. This is a grant provided by the Ministry of Social Development. The majority of these patients was ASD or suspected ASD. COVID-19 restrictions have generally affected the world financially and by extension families with children with disability. In an Australian survey of children and young people with disability during the pandemic, a significant concern was that people might lose work or have to give up work and this would impact house hold income.⁸ Even though there was health risk regarding visiting a health

facility, parents attended to have the DAG forms filled out. Further research would be needed to study the financial impact on families with children with disability. 16.6% of parents attended for prescriptions. This was an expected reason for attending the clinic. Risperidal is licensed for aggressive behavior in children with ASD and children who were on this drug previously needed to continue their medication. Methylphenidate is licensed for the treatment for ADHD. Even though children were not physically in school, many families wanted to continue methylphenidate for online schooling and home schooling.

Twenty five children had existing behavioural problems and six patients attended for worsening behaviour; five of these children were ASD. It has been recognized that behaviour problems in children with disability can worsen during the pandemic. Collizi *et al* found that in persons with ASD, behaviour problems were common during the pandemic. They noted that pre-existing behavioural problems increased the risk of more frequent and disruptive behaviour.⁹ Further research would be needed to understand the impact of the pandemic on mental health and behaviour in our population of children.

During the pandemic, schools were closed and some children accessed schooling online. Some children received packages and the parents worked with them at home. Some children did not access schooling. 10.8% of consultations were regarding SEN medical reports for children with special educational needs including ASD, ADHD and LD. Many of the reports were for children who required concessions for exams. Further research is needed regarding the impact of the pandemic on the education of children with special educational needs in our setting.

Eight parents consulted us for letters regarding the wearing of face masks. We expected that the request for these letters may have been much more. Further research would be required regarding the adherence and compliance to COVID-19 public health recommendations within the population of children with disability.

Conclusion

During the COVID-19 pandemic, the majority of consultations were telemedicine consultations and face to face consultations without the child present. Consultations with the child present were minimised.

Preliminary assessments of new patients were carried out by telemedicine consultations but completion of assessments deferred. Common reasons for consultations apart from new patient consultations were for DAG forms to be filled, prescriptions, SEN reports, behavioural problems and letters regarding the use of face masks. Patient satisfaction with the hybrid telemedicine /face to face service needs to be carried out. Further study is required regarding the impact of deferring completion of assessments initiated through telemedicine consultations. The community mitigation strategies in response to the COVID-19 pandemic necessitated the use of a hybrid telemedicine /face to face service but further audit and research regarding its effectiveness in the community paediatrics setting is required.

Ethical Issues: Ethics approval was obtained from the South West Regional Health Authority ethics committee.

Conflict of Interests: There are no conflicts of interest

Consent: Informed Consent was not required

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