administration (52%), followed by prescription (30%) and transcription of medications (12%). Most commonly involved medications in MEs were anti-pyretics (33%), those for respiratory conditions (15%) and analgesics (13%). Of the MEs, 9 (9%) were serious errors requiring enhanced monitoring and/or intervention, while 1 (1%) caused temporary patient harm. Human factors (92%) was the most frequently documented contributing factor, namely failure to comply with established workflows, accurate information provided by guardians, and distractions.

Conclusions We have described a low incidence of MEs from 2013 to 2019. Strategies should be developed to ameliorate MEs in the pediatric ED. Areas for focused intervention should include systematic evaluation of drug administration and prescription processes, to enhance compliance with established procedures of checking (amongst the healthcare team and with guardians) and putting safeguards in place to minimize the impact of distractions in the ED setting.

392 PROMOTING EARLY INTERVENTION FOR SPECIAL-NEEDS CHILDREN AS A BRANCH SERVICE OF PEDIATRIC NEUROLOGY

Pyae Phyo Aung, Nay Linn, Kyaw Linn, Aye-Mya Min-Aye, Ayemu Saan, Nway Nway. *Myanmar*

10.1136/bmjpo-2021-RCPCH.214

Background Since the establishment of pediatric neurology services in 2011, pediatric neurology team has been dealing with increasing numbers of different neurological problems year by year. Developmental, speech and language and behavioral problems are quite common in out-patient clinics. In 2017, UNICEF estimated that 42% to 45% of young Myanmar children need early childhood intervention services. So Child Development Center (CDC) was launched in 2017 as a branch of Pediatric Neurology with services such as developmental screening, assessment and appropriate intervention.

Objectives The objective of the study is to evaluate early intervention services for children who were enrolled in CDC.

Methods Retrospective study was done on early intervention services in CDC through the review of CDC registration records from 2017 to 2020. The study population included all the children referred for screening, assessment and interventions. After enrollment, thorough history, and relevant general, systemic as well as neurological examinations and necessary investigations were performed for diagnosis and underlying causes. Pediatric neurologists also conducted developmental screening and necessary neurodevelopmental assessments by using instruments such as Schedule of Growing Skills-2, Conner Rating Scale and DSM-5 Diagnostic Criteria. Then, appropriate interventions such as physiotherapy, occupational, speech, behavior and self-care therapies were given by allied professionals in voluntary participation and paraprofessionals. The extracted data from CDC registry to analyze were demographic variables, presenting symptoms, medical history and examination findings, results of developmental assessment and diagnoses and therapy services.

Results A total of 138 children with girls (30.43%) and boys (69.57%) were enrolled. The youngest age at enrollment was 1 year, the oldest 15 year with a mean age of 4.558 year. The most common developmental problems were global developmental delay (GDD) (54.35%), autism spectrum disorder (ASD) (17.39%) and speech and language delay (SLD) (16.67%) with male-predominance in GDD (64.81%), ASD (79.17%) and SLD (78.26%) respectively. Speech problems (97.62%), language (97.5%) and adaptive skills (93.33%) delay and behavior problems (37.93%) were the most common presentation in GDD. Youngest age for ASD by DSM-5 was 2 years with a mean age of 3.75 years. Problem-in-making-friends (75%), poor-eye-contact (70.83%), stereotypies (54.17%) and odd-play (41.67%) were the most encountered autism symptoms in children with ASD. Rising trend was found in assessment (36.96% in both 2018 and 2019) and therapy services in comparison with 2017.

Abstract 392 Table 1

Demographic characteristics	Total N = 138			
	n	%	Mean	SD
Gender	42	30.43		
Female	96	69.57		
Male				
Age (Year) at enrollment			4.558	2.628
**minimum age is 1 year				
Age (Year)		72.46		
0–5	100	22.46		
6–10	31	5.07		
11–15	7			
Age (Year) of GDD diagnosis			3.259	1.231
**minimum age is 1 year				
Age (Year) of ASD diagnosis			3.75	1.939
**minimum age is 2 years				
2017 Assessment	23	16.67		
2018 Assessment	51	36.96		
2019 Assessment	51	36.96		
2020 Assessment	13	9.42		

Conclusions This study explores the promotion of early intervention services for special-needs children as part of pediatric neurology. Scaling up better holistic intervention services in multidisciplinary approach and the study aiming for the outcome of children benefiting from CDC services are further considerations against impact of COVID-19 pandemic in 2020.

393 CAPTURING THE RESPONSE TO THE COVID-19 PANDEMIC IN A UK DISTRICT GENERAL HOSPITAL PAEDIATRIC DEPARTMENT

Felicity Cooksey, Anna Cripps, Gita Modgil. *UK*

10.1136/bmjpo-2021-RCPCH.215

Background In response to the coronavirus pandemic, the paediatric team have needed to make rapid changes to our pathways and ways of working. In this time colleagues have fast tracked the testing of new processes and generated ideas to deliver continuous improvement.

Objectives General objective: To capture the rapid changes made to healthcare practices within the Paediatric department at Musgrove Park Hospital, Taunton in response to the coronavirus pandemic and to share learning across the directorate.

Specific Objectives

- To capture the strategies used to strengthen services and pathways for children, young people and families
- To identify the barriers to better patient care within the paediatric department
- To facilitate shared learning

Methods In June 2020, to capture the rapid changes in response to the coronavirus pandemic, the quality improvement 'Change Wall' initiative was used. Core teams and individuals in the paediatric department at Musgrove Park Hospital were asked five questions regarding changes to the department based on plan, do, study, act (PDSA) cycles. Responses were collated and shared via a wall display to disseminate key learning points.

Results We had responses from 13 teams within the paediatric department. Results showed respondents were broadly aiming to address three aspects of care in response to the coronavirus pandemic: ensuring appropriate and timely paediatric support for the acute services; striving to continue to maintain high quality communication with patients and their families; and to alter the physical environment in order to reduce the potential transmission of COVID-19.

Data captured showed multiple initiatives have been introduced. A key development was the introduction of a second paediatric high dependency area. An outpatient department working party was established and the waiting lists for new patients reduced from six months to two weeks. With paediatric oncology patients no longer able to ring the bell to celebrate the end of their treatment, a 'party in a box' was introduced.

To be able to provide greater out-of-hours support, the children and young people's mental health team and diabetes nursing team flexed their patterns of working.

Colleagues in the children's eating disorder service have changed their working too, which has helped to prevent long inpatient admissions. In one innovative case, they offered nasogastric tube feeding top ups at home, supported by the children's community nursing team, and prevented a child from being admitted to the most specialist care for four to six months.

Conclusions Overall, many of the changes have been felt to be positive and are being evaluated to continue long term because of the perceived benefit to patient care and the potential to ease winter pressures. We plan to continue to use the change wall to capture changes made within paediatrics beyond coronavirus. This will allow us to continue to disseminate knowledge of changes happening and inspire further change. We plan to re-visit each team in the next six months to explore which improvements have been sustained or adapted. Moving forward we also aim to capture the view of the patient and parent/carer with regards to their perceptions of changes made.

394 CLINICAL FEATURES AND OUTCOMES OF NEONATAL COVID-19: A SYSTEMATIC REVIEW

Kia Hui Lim, Faith Si Jia Soong, Yi Fen Low, Xin Lei Goh, Zubair Amin, Yvonne Peng Mei Ng. *Singapore*

10.1136/bmjpo-2021-RCPCH.216

Background In general, children with COVID-19 have milder illness and better prognosis compared to adults. However, the neonatal population (from birth to 28 days of life) may be more vulnerable to severe COVID-19 disease due to the immaturity of neonatal immune system and possibility of in-utero infection from infected mothers. Comprehensive data on neonatal COVID-19 manifestations is currently lacking.

Objectives We aimed to determine the clinical manifestations and outcomes of neonates with COVID-19, and characterise these clinical characteristics based on illness severity.

Methods A systematic review (CRD42020183500) was conducted following the PRISMA guidelines with Embase, PubMed, and China Knowledge Resource Integrated (CNKI) databases until 1 August 2020. Additional studies were identified from references of included studies and the John Hopkins Centre for Humanitarian Health database. Studies reporting neonates (≤ 28 days old) who tested positive for SARS-CoV-2 by reverse transcriptase PCR (RT-PCR) were included. Descriptive statistics were used to compare mild-moderately ill neonates (non-severe group) with severely-critically ill neonates (severe group). This grouping was based on the World Health Organization's definition. Continuous variables were analysed using Wilcoxon-Rank Sum Test. Dichotomous or categorical data were analysed with Chi-square and Fisher's Exact Tests. Quality of the studies were reviewed with Newcastle-Ottawa Scale and Murad Tool.

Results Sixty-seven studies were included out of 199 full text articles screened. Studies comprised of case reports, case series or cohort studies. Of ninety-nine neonates with COVID-19 infection, 72 (72.7%) were symptomatic. Amongst the symptomatic neonates, respiratory symptoms were common: shortness of breath (36.1%), nasal symptoms (19.4%), cough (18.1%). Other symptoms included fever (55.6%), feeding problems (31.9%) and gastrointestinal (GI) symptoms (16.7%). Lymphopenia was present in 43.9% (18 of 41 neonates tested). Elevated C-reactive protein was only reported in 13.2% (5 of 38 neonates tested), while 65.4% (34 of 52 neonates) had chest radiographs suggestive of pneumonia. Thirty neonates (30.3%) had severe-critical illness (severe group), while 69 (69.9%) had mild-moderate illness (non-severe group). Compared with the non-severe group, more neonates in the severe group were symptomatic (100% vs 60.9%, $p<0.001$), had dyspnoea (66.7% vs 14.3%, $p<0.001$) and abnormal chest radiographic findings (84.6% vs 61.5%, $p=0.038$). Accordingly, more neonates in the severe group were admitted to the intensive care unit (91.7% vs 41.7%, $p<0.001$). On the contrary, mild-moderately ill neonates had increased incidence of fever (69.0% vs 36.7%, $p=0.006$), and GI symptoms (26.2% vs 3.33%, $p=0.01$). Ten out of 11 of mild-moderately ill neonates displaying GI symptoms did not have dyspnoea. Laboratory findings, duration of hospital stay, birth characteristics and age at COVID-19 diagnoses were similar between these two groups. No mortalities were reported.

Conclusions Prognosis of COVID-19 neonates were favourable. We postulate that GI symptoms alone predict a better prognosis, while GI symptoms with dyspnoea predict a worse prognosis, as observed in adults. However, our studies were of moderate quality, and clinical findings and investigation results were not completely reported. As the pandemic evolves, prospective studies and more systematic reporting of cases will improve our understanding of neonatal COVID-19 and verify utility of symptoms and laboratory tests in predicting the severity of disease.