

# Maternal and Child health in COVID-19



*Dr Charlie Reynard @ UK, National Institute for Health Research  
Clinical Doctoral Research Fellow*

*Dr Timur D'souza @  
UK, emergency medicine specialist trainee*

*Dr Gabin Mbanjumucyo  
Emergency Medicine & Critical Care (UK/Rwanda)*

## [Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis](#) *Allotey et al (1)*

Allotey et al have undertaken a systematic review and meta-analysis examining maternal and perinatal outcomes of COVID-19. They have undertaken this as a living review, which means that it is periodically updated. This has been a popular methodology throughout the pandemic to ensure that the most up to date information is available.

The searches found 49684 search results; there were 77 papers of interest. The studies were from the United States of America, China, Italy, Spain, Brazil and other western countries. They found that 10% of women attending hospital had COVID-19 and there was an association with obesity, asthma and gestational diabetes. Interestingly whilst fever and cough were the most common reported symptoms by pregnant women, they were still less likely than non-pregnant women to report fever and myalgia. From a pooled analysis there are some key take home messages (i) 13% of pregnant or recently pregnant women with COVID 19 had severe disease. (ii) 4% of pregnant women with COVID-19 went to ICU and 3% required invasive ventilation. (iii) 0.1% (73 of 11580) of pregnant women died from COVID-19. (iv) from a small number of studies non-white ethnicity was associated with an increased risk of maternal death (odds ratio 2.40), ICU admission (OR 2.11) and severe disease (0.86). This review can not answer why non-white ethnicity have this apparent risk, [it has been hypothesised](#) to be related to societal factors such as socioeconomic deprivation or possible genetic factors (2).

However, the authors themselves state that the study populations and therefore the study findings may not be generalisable to all pregnant women.

Perhaps most important of all whilst 17% of pregnant women with COVID-19 had a preterm birth, there was no difference observed for the odds of other perinatal outcomes including stillbirth, neonatal death, sepsis and fetal distress.

### [Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults](#) *Ludvigsson et al (3)*

This systematic review examines the risk of death in children, unlike the first paper they did not rely on case reports thereby enabling them to comment on the amount of risk not just the likely existence of it. The search found 89 papers of which 45 were included, for a common condition this would represent a suspicious low number of papers. However given the novelty of the pandemic and the timing of the search this is in keeping with what we might expect. The take home messages are reassuring for children (a) they represent a low proportion of identified cases 2% in China, 1.2% in Italy and 5% in the USA. (b) a case series found that 90% of children COVID-19 that was not severe (c) for neonates the evidence is conflicting - some demonstrates an increased risk of severe disease whilst others show it is lower. The increased risk result came from a suspected COVID-19 cohort and the lower risk came from a cohort of confirmed COVID-19. A possible explanation is that the increased risk was from another pathogen.

### [Multisystem inflammatory syndrome in U.S. Children and Adolescents](#) *Felstein et al (4)*

Feldstein et al report a case series of 186 children and adolescents with an unusual presentation of COVID-19, multi-system Inflammatory syndrome in children (MIS-C). It appears to be severe, requiring a large amount of health care resource to treat, but has a low rate of mortality.

MIS-C was defined as a serious illness leading to admission, being less than 21 years old, fever (objective or subjective), laboratory evidence of inflammation, multisystem organ involvement, and SARS-CoV-2 infection or close contact with a positive case.

It appeared to manifest in the later stages of COVID-19, with the median time from COVID-19 symptoms to MIS-C being 25 days. The median age was 8.3 years, 62% were male and 73% had no comorbidities. This was a mixed race cohort with the cohort being 31% hispanic or latino, 25% black, 19% white, and 22% unknown.

The majority of these patients were treated in intensive care units (80%), with most having four

organs involved (71%). This was principally the gastrointestinal, cardiovascular, haematologic, mucocutaneous and respiratory systems. 48% required vasoactive support, 20% required invasive mechanical ventilation, and 4% required ECMO. Thankfully despite the severity of this condition 70% of patients were discharged alive. However, 28% were still admitted when this analysis was conducted and unfortunately 2% died.

[Webb et al](#) describe a South African MIS-C cohort of 23 cases (5), which has findings in keeping with the Feldstein report. As Webb et al's cohort is mainly black (78.3%) it would lend support to the notion that MIS-C is persistent across ethnicities, and that Feldstein et al's findings are generalisable to other ethnic groups. Webb et al described treatment with intravenous immunoglobulin, methylprednisolone and tocilizumab in the South African setting. However the efficacy of these therapies is not clear.

### [Perinatal-neonatal Management of COVID-19 infection – Guidelines of the federation of Obstetric and Gynaecological Societies of India \(FOGSI\), National Neonatology Forum of India \(NNF\), and Indian Academy of Pediatrics \(IAP\) Chawla D et al](#)

This publication from India uses the formation of a guideline development group to form recommendations in the perinatal-neonatal management of covid-19 infected patients. An initial expert group formed of obstetricians, neonatologists and paediatricians drafted a list of anticipated frequently asked questions by those involved in the care of this demographic and used these questions to conduct PICO literature searches via PubMed. In order to try and ensure a targeted approach to frequently asked questions, the group sent out an e-survey to colleagues in order to attempt to focus their recommendations. A GRADE approach was used from the results of the PICO search and combined with expert opinion, 20 contextualised recommendations were made under broad headings of pregnant women with travel history, clinical suspicion or confirmed COVID 19, neonatal care, prevention and infection control, diagnosis and general questions. The recommendations have been formulated taking into account the varying availability of resources that clinicians have access to across India. The search strategies, exclusion criteria of papers and basic information of the included studies are hard to find and are not explicitly mentioned and one can only assume are based from studies done in China. Nevertheless, the expert opinion of obstetricians, neonatologists and paediatricians have set questions which are applicable to most settings, particularly those faced in Emergency Departments. Evidence (and thus recommendations) garnered from the searches resulted in weak recommendations and required further studies in order to further inform clinicians responding to this demographic during the pandemic.

## [Protecting children in low-income and middle-income countries from COVID-19](#) *Ahmed S et al*

This editorial from healthcare professional discussing the disproportional impact COVID-19 will have on LMIC's due to the already high rates of under-5 pneumonia mortality. Building on the known risk factors that lead to the high under-5 mortality rates of low and middle income countries (200 per 100 000), the authors discuss how a combination of direct effects from these factors, as well as indirect effects from the COVID-19 response may further threaten the lives of children in these context. The communications looks at the determinants of child health by suggesting an institutional focus should be made on preventing the collapse of infrastructure during this outbreak, upscaling of testing, tailoring of lockdown measures to suit local contexts and identifying the need to conduct further research. By highlighting these five recommendations, the authors believe that low and middle income countries can begin to protect their children during this pandemic. With limited data available, the recommendations are based mainly on what we already know about risk factors of pneumonia and the barriers that those in low and middle income countries face. There is significant areas highlighted by the authors where further research needs to be conducted in order to build on their recommendations.

## [Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study](#) *Roberton T et al*

This innovative study from John Hopkins school of Public health has used published data and expected impact on maternal and child health in LMIC's specifically to create hypothetical scenarios to demonstrate the potential increase in deaths in these countries. By creating scenarios through altering variables in coverage (availability of health workers, supplies and equipment, demand for health services and access to health services) and wasting (low weight for height), predicted additional deaths at 1, 3, 6 and 12 months have been provided. From the least severe scenario over a 6 month period, a potential 253 500 additional child deaths and 12 200 maternal deaths could be seen in low and middle income countries. This can be compared to their more severe scenario over the same 6 months which could demonstrate 1 157 000 additional child deaths and 56 700 additional maternal deaths. Specific to LMIC's, this study is intended to highlight the institutional push that is needed to address these variables in order to dampen the impact COVID-19 has on health infrastructure, with recommendations being made more specifically with childbirth interventions and addressing neonatal sepsis at the clinician-patient level. Although not intended to predict, there is significant extrapolation used to generate these figures. Similarly, the components of the formula (specifically demand for and access to health) are not clear in how they are measured and may in fact be under-represented in their formulation and thus overall suggested impact.

## An urgent call to address the nutritional status of women and children in Nepal during COVID-19 crises *Panthi B et al*

This commentary from Nepal focuses on addressing the ongoing and ever demanding nutritional health needs of women and children during the government led lockdown in Nepal. With increased morbidity and mortality rates already being seen in infants and young children as a result of low immunity, gastrointestinal or respiratory tract infections and associated malnutrition and dehydration, the authors provide suggestions as to how to build healthier societies during this time. The authors also take an overview approach to the multiple confounding factors that lead to adverse outcomes from COVID-19 infections including job and food insecurity and altered feeding practices due to the observed fear mothers have with breastfeeding their children due to anxiety around passing on potential COVID 19 infections. Possible interventions have been provided at an individual level through feeding practices, counselling and psychological support, as well as at the community level, via mass awareness campaigns, deworming programmes and formation of nutritional clusters which would enable more tailored and effective responses to the ever insecure access to adequate nutrition. The study is embedded in a low and middle income country and as such this context has significant relevance to similar populations seen within Africa. The practice points are somewhat generalised and whilst are not a specific guide to follow is an important reminder of the importance of ongoing nutritional support and the significant repercussions with regards to the morbidity and mortality of this demographic if fundamental care and prioritisation of needs are not maintained.

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