JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

COVID-19, Maternal and Child Health, Nutrition – Literature Repository
May 2020

JOHNS HOPKINS CENTER for HUMANITARIAN HEALTH

Key Terms	Date Published	Title	Journal / Source	Type of Publication	Summary & Key Points	Specific Observations	Full Citation
*This document will be continually updated throughout the month of May. The expected date for the **next update is Tuesday, May 19, 2020 at 1pm USA ET**. New publications since our last update have been **highlighted in gray**.*							
Childhood, routine vaccine ordering, vaccine-preventable disease, United States	15-May-20	Effects of the COVID-19 Pandemic on Routine Pediatric Vaccine Ordering and Administration—United States, 2020	Morbidity and Mortality Weekly Report	Report	On March 24, the United States CDC posted guidance emphasizing the importance of routine well childcare and immunization, particularly for children aged ≤24 months. Vaccines for Children (VFC) is a national program that provides federally purchased vaccines to approximately 50% of U.S. children (0-18 years). In this report, cumulative doses of VFC-funded vaccines ordered by health care providers at weekly intervals were tallied during two periods: January 7, 2019 to April 21, 2019 and January 6, 2020 to April 19, 2020. Data indicate a notable decrease, beginning the week after the national emergency declaration, in orders for VFC-funded, non-influenza childhood vaccines and measles-containing vaccines between period 2 compared with period 1. The decrease was less prominent among children aged ≤24 months than among older children. Continued coordinated efforts between health care providers and public health officials at the local, state, and federal levels will be necessary to achieve rapid catch-up vaccination.	Declines in routine pediatric vaccine ordering and doses administered, during the COVID-19 pandemic, indicate that U.S. children may face increased risks for outbreaks of vaccine-preventable diseases.	Santoli JM, Lindley MC, DeSilva MB, et al. Effects of the COVID-19 Pandemic on Routine Pediatric Vaccine Ordering and Administration—United States, 2020. MMWR. 2020;69:591–593. doi:10.15585/mmwr.mm6919e2
Pregnancy, birth, doulas, maternity care, United States	14-May-20	Pregnancy, Birth and the COVID-19 Pandemic in the United States	Medical Anthropology	Article	In this article, the authors ask, how quickly and in what ways are US maternity care practices changing due to the COVID-19 pandemic? Data indicate that partners and doulas are being excluded from birthing rooms leaving mothers unsupported, while providers face lack of protective equipment and unclear guidelines. The authors investigate rapidly shifting protocols for in- and out-of-hospital births and the decision making behind them. They argue that this pandemic may offer a testing ground for future policy changes to generate effective maternity care amidst pandemics and other types of disasters.	This article considers the changes in birth practices that have occurred in the United States as a result of the COVID-19 pandemic.	Davis-Floyd R, Gutschow K, Schwartz DA. Pregnancy, Birth and the COVID-19 Pandemic in the United States [published online 2020 May 14]. Med Anthropol. doi:10.1080/01459740.2020.1761804
Infants, febrile, feeding difficulty, New York	13-May-20	A Case Series of the 2019 Novel Coronavirus (SARS-CoV-2) in Three Febrile Infants in New York	Pediatrics	Case Report	This case report describes three febrile infants, less than two months of age, admitted to a large, tertiary care children's hospital in New York and subsequently found to be infected with SARS-CoV-2. All three patients presented with fever, feeding difficulty, lymphopenia, and thrombocytosis on laboratory evaluation. Two of the three patients were found to have neutropenia and two had known exposures to sick contacts. All patients had unremarkable hospital courses; two required intravenous fluid support due to poor feeding. All were discharged without complications.	To the authors' knowledge, this report describes three of the youngest patients to be reported with SARS-CoV-2 in the United States.	Feld L, Belfer J, Kabra R, et al. A Case Series of the 2019 Novel Coronavirus (SARS-CoV-2) in Three Febrile Infants in New York [published online, 2020 May 13]. Pediatrics. doi:10.1542/peds.2020-1056
Pregnancy, therapeutic and vaccine trials, inclusion criteria	13-May-20	Consider pregnancy in COVID-19 therapeutic drug and vaccine trials	The Lancet	Correspondence	Early data regarding favorable pregnancy outcomes in COVID-19 are reassuring. However, pregnant women remain at risk of severe disease, and they deserve equity in access to therapeutic options informed by rigorous scientific data. There are currently more than 300 trials exploring therapeutics for COVID-19, yet near universal exclusion of pregnant women, despite many of these trials repurposing drugs already widely, and safely, used in pregnancy. Moreover, vaccination in pregnancy protects the mother, fetus, and newborn. This tripling of benefit means rapid vaccine development must allow pregnant women safe and timely inclusion in vaccine trials.	The authors argue for the safe inclusion of pregnant women in clinical trials for COVID-19 therapeutics and vaccines.	Whitehead CL, Walker SP. Consider pregnancy in COVID-19 therapeutic drug and vaccine trials [published online 2020 May 13]. Lancet. doi:10.1016/S0140-6736(20)31029-1

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Children, Kawasaki-like disease, Italy	13-May-20	An outbreak of severe Kawasaki-like disease at the Italian epicentre of the SARS-CoV-2 epidemic: an observational cohort study	The Lancet	Article	At a center in Bergamo province, Italy, all patients diagnosed with a Kawasaki-like disease in the past 5 years were divided according to symptomatic presentation before (group 1) or after (group 2) the beginning of the SARS-CoV-2 pandemic. Group 1 comprised 19 patients (7 boys, 12 girls; mean age 3.0 years [SD 2.5]) diagnosed between January 1, 2015, and February 17, 2020. Group 2 included ten patients (7 boys, 3 girls; aged 7.5 years [SD 3.5]) diagnosed between February 18 and April 20, 2020; two of ten were SARS-CoV-2 positive on nasopharyngeal and oropharyngeal swab; eight of ten were positive for SARS-CoV-2 IgG or IgM, or both. The two groups differed in disease incidence (group 1 vs group 2, 0.3 vs 10 per month), mean age (3.0 vs 7.5 years), cardiac involvement (2/19 vs 6/10), Kawasaki Disease Shock Syndrome (0/19 vs 5/10), macrophage activation syndrome (0/19 vs 5/10), and need for adjunctive steroid treatment (3/19 vs 8/10; all $p<0{\cdot}01$).	In the past month, a center in Italy found a 30-fold increase in incidence of Kawasaki-like disease. Similar outbreaks of Kawasaki-like disease are expected in other countries involved in the SARS-CoV-2 pandemic.	Verdoni L, Mazza A, Gervasoni A, et al. An outbreak of severe Kawasaki-like disease at the Italian epicentre of the SARS-CoV-2 epidemic: an observational cohort study [published online 2020 May 13]. Lancet. doi:10.1016/S0140-6736(20)31103-X
Children, Kawasaki-like disease, inflammatory phenomenon, immune response	13-May-20	Kawasaki-like disease: emerging complication during the COVID-19 pandemic	The Lancet	Comment	Attention has recently shifted to the vulnerability of children to COVID-19 for two reasons. First, the degree to which children transmit COVID-19 is key to how countries reopen communities after lockdown. Second, new concerns about a novel severe Kawasaki-like disease in children related to COVID-19 have arisen, including the description by Verdoni et al. of an outbreak in Italy. Kawasaki disease is a rare acute paediatric vasculitis, with coronary artery aneurysms as its main complication. The diagnosis is based on the presence of persistent fever, exanthema, lymphadenopathy, conjunctival injection, and changes to the mucosa and extremities; there is no diagnostic test. Understanding this inflammatory phenomenon in children might provide vital information about immune responses to SARS-CoV-2 and possible correlates of immune protection with relevance for both adults and children.	This commentary responds to the article by Verdoni et al. on Kawasaki-like disease in children related to COVID-19; understanding this inflammatory phenomenon may provide useful information about immune responses to SARS-CoV-2.	Viner RM. Kawasaki-like disease: emerging complication during the COVID-19 pandemic [published online 2020 May 13]. Lancet. doi:10.1016/S0140-6736(20)31129-6
Children, immuno-suppressive therapy, clinical course, pediatric nephrology center	13-May-20	The severity of COVID-19 in children on immunosuppressive medication	The Lancet Child & Adolescent Health	Correspondence	The authors are currently managing an ongoing survey that includes children aged 0–19 years with kidney disease on immunosuppressive medication who are diagnosed with COVID-19. Within 6 weeks after March 15, 2020, 18 children (median age 11.5 years, range 6-14 years) from 16 pediatric nephrology centers across 11 countries (Spain, Switzerland, China, UK, Germany, France, Sweden, Colombia, USA, Iran, and Belgium) were recorded. Common symptoms included fever (13/18), cough (11/18), rhinitis (5/18), and diarrhea (3/18). 1 child (6%) received high-flow nasal cannula oxygen, and 2 (11%) received supplemental face mask oxygen. These data from a small number of children suggest that even children receiving immunosuppressive treatment for various indications appear to have a mild clinical course of COVID-19.	Data from a small cohort of pediatric patients at nephrology centers suggest that even children receiving immunosuppressive treatment for various indications appear to have a mild clinical course of COVID-19.	Marlais M, Wlodkowski T, Vivarelli M, et al. The severity of COVID-19 in children on immunosuppressive medication [published online 2020 May 13]. Lancet Child & Adol Health. doi:10.1016/S2352-4642(20)30145-0
Childhood vaccination, BCG, case positivity rate, Israel	13-May-20	SARS-CoV-2 Rates in BCG-Vaccinated and Unvaccinated Young Adults	JAMA	Research Letter	Confirmed cases of COVID-19 and case-fatality rates may vary between countries based on national policies regarding childhood BCG vaccination, with fewer confirmed cases and a lower death toll reported in countries with vs without universal BCG vaccine coverage. In Israel, of 72,060 test results reviewed at a medical center, 3,064 were from patients born between 1979 and 1981 (1.02% of birth cohort of that period; 49.2% male; mean age, 40 years) and 2,869 were among likely unvaccinated people born between 1983 and 1985 (0.96% of total birth cohort; 50.8% male; mean age, 35 years).	In this cohort of Israeli adults, BCG vaccination in childhood was associated with a similar rate of positive test results for SARS-CoV-2 compared with no vaccination.	Hamiel U, Kozer E, Youngster I. SARS-CoV-2 Rates in BCG-Vaccinated and Unvaccinated Young Adults [published online 2020 May 13]. JAMA. doi:10.1001/jama.2020.8189

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					There was no statistically significant difference in the proportion of positive test results for COVID-19 in the BCG-vaccinated group (361 [11.7%]) vs the unvaccinated group (299 [10.4%]; difference, 1.3%; 95% CI, -0.3% to 2.9%; *P*=.09). There was 1 case of severe COVID-19 in each group, and no deaths were reported.		
Children, transmission, school closure, social distancing measures	13-May-20	School Closure During the Coronavirus Disease 2019 (COVID-19) Pandemic An Effective Intervention at the Global Level?	JAMA Pediatrics	Viewpoint	Most attempts to reduce SARS-CoV-2 transmission have been based on restrictive social distancing measures, like school closures. Modeling studies indicate that school closure can be effective for infection control only when outbreaks are due to viruses with low transmissibility and attack rates are higher in children than in adults, which applies to influenza but not corona-viruses. The poor relevance of this restrictive measure seems confirmed by evidence in countries, like Taiwan, where school closures did not contribute to control of the COVID-19 spread. While the efficacy of school closure is debatable, the potential negative consequences of this measure cannot be ignored and risk deepening social, economic, and health inequities.	The authors criticize the usefulness of school closure in reducing COVID-19 transmission and highlight the potential negative consequences of this measure.	Esposito S, Principi N. School Closure During the Coronavirus Disease 2019 (COVID-19) Pandemic: An Effective Intervention at the Global Level? [published online 2020 May 13]. JAMA Pediatr. doi:10.1001/jamapediatrics.2020.1892
Low-income children, poverty, school nutrition programs, United States legislation	13-May-20	Low-Income Children and Coronavirus Disease 2019 (COVID-19) in the US	JAMA Pediatrics	Viewpoint	Nearly 1 in 5 children in the US live in poverty, a substantially greater proportion than for adults. Childhood poverty is associated with injuries, chronic illness, and mental health difficulties, with consequences lasting well into adulthood. More than 30 million children rely on school nutrition programs. During the COVID-19 pandemic, emergency food assistance is reaching only a fraction of the children previously served, compounding the loss of educational time. Future COVID-19 legislation should target child health as well as educational, nutritional, and social support systems.	The authors argue that future COVID-19 legislation should target low-income children in the United States, to mitigate the long-term consequences of the pandemic on child health and wellbeing.	Dooley DG, Bandealy A, Tschudy MM. Low-Income Children and Coronavirus Disease 2019 (COVID-19) in the US [published online 2020 May 13]. JAMA Pediatr. doi:10.1001/jamapediatrics.2020.2065
Children, young adults, comorbidities, Washington DC	13-May-20	Severe COVID-19 in Children and Young Adults in the Washington, DC Metropolitan Region	The Journal of Pediatrics	Brief Report	This observational retrospective cohort study included 177 children and young adults (median age 9.6 years, range 0.1-34.2 years) with clinical symptoms and laboratory confirmed SARS-CoV-2 infection treated between March 15 and April 30, 2020 at the Children's National Hospital, in Washington DC. 44/177 patients (25%) required hospitalization, of which 35/44 (80%) were non-critically ill and 9/44 (20%) were critically ill. Although all age groups were infected with SARS-CoV-2, the youngest (<1 year) and oldest children/young adults (15-25 years of age) were more likely to be hospitalized, and the oldest were the most likely to require critical care. Underlying conditions were also present in 39% of patients with SARS-CoV-2 infection overall but overrepresented in hospitalized and critically ill patients. Co-infection was not detected in 94% of patients in this study.	In this cohort from Washington DC, all age groups were infected with SARS-CoV-2, but those <1 year and between 15-25 years were more likely to be hospitalized.	DeBiasi RL, Song X, Delaney M, et al. Severe COVID-19 in Children and Young Adults in the Washington, DC Metropolitan Region [published online 2020 May 13]. J Pediatr. doi:10.1016/j.jpeds.2020.05.007
Pregnancy, acute kidney injury, neonate, Iran	13-May-20	Acute Kidney Injury in Pregnant Women Following SARS-CoV-2 Infection: A Case Report From Iran	Respiratory Medicine Case Reports	Case Report	In this case report, a 33-year-old woman (34 weeks' gestation) was referred to a treatment clinic in Tabriz, Iran, where she tested positive for SARS-CoV-2 on nasopharyngeal RT-PCR test. The patient did not receive any nephrotoxic drugs before uremia, increased blood urea nitrogen, and increased creatinine levels were detected and diagnosed as acute kidney injury. In urine sedimentation, many granular casts and cellular debris were interpreted as acute tubular necrosis (ATN). A chest CT showed ground glass opacity with consolidation in the upper right lobe. After the patient's respiratory rate increased, she was intubated and underwent cesarean section, delivering a neonate who tested negative for SARS-CoV-2. The patient was weaned off mechanical ventilator support, and ATN resolved.	This case report presents a rare case of acute kidney injury in a pregnant woman with confirmed SARS-CoV-2 infection in Iran. The neonate was born without complications and tested negative for SARS-CoV-2.	Taghizadieh A, Mikaeili H, Ahmadi M, Valizadeh H. Acute kidney injury in pregnant women following SARS-CoV-2 infection: A case report from Iran [published online 2020 May 13]. Respir Med Case Rep. doi:10.1016/j.rmcr.2020.101090

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Children, cancer, screening, New York City	13-May-20	COVID-19 in Children With Cancer in New York City	JAMA Oncology	Research Letter	Starting in mid-March 2020, the MSK Kids pediatric program at Memorial Sloan Kettering Cancer Center (MSK) instituted a screening and testing plan to mitigate risk associated with COVID-19. Of the 178 unique pediatric patients (107 male, 71 female) tested (mean [SD] age 11.1 [8.5] years), 20 (11.2%) had positive test results (mean [SD] age 15.9 [6.6] years). Of patients specifically tested for positive screening or symptoms, the rate of positivity for SARS-CoV-2 was 29.3%. By comparison, in the 120 asymptomatic patients without known exposure, the rate of SARS-CoV-2 positivity was only 2.5% (29.3%; 95% CI, 18.1%-42.7% versus 2.5%; 95% CI, 0.5%-7.1%; *P*<.001). Of the 20 patients who tested positive for SARS-CoV-2, only 3 were female, a significant sex skewing when compared with pediatric patients who tested negative (15%; 95% CI, 3%-38% vs 43%; 95% CI, 35%-51%; *P*=.02). Only 1 patient with COVID-19 required noncritical hospitalization.	This report from New York City suggests that pediatric patients with cancer may not be more vulnerable than other children to infection or morbidity from SARS-CoV-2.	Boulad F, Kamboj M, Bouvier N, Mauguen A, Kung AL. COVID-19 in Children With Cancer in New York City [published online 2020 May 13]. JAMA Oncol. doi:10.1001/jamaoncol.2020.2028
Maternal health, non-communicable diseases, health economics	13-May-20	Maternal Health and Non-Communicable Disease Prevention: An Investment Case for the Post COVID-19 World and Need for Better Health Economic Data	International Journal of Gynecology & Obstetrics	Special Article	An integrated approach to population health, disease surveillance, and preventive care will dominate the health agenda in the post COVID-19 world. Maternal and child health are inextricably linked with non-communicable diseases (NCDs) and their risk factors, since gestational hyperglycemia and macrosomia can impact subsequent generations with obesity, type 2 diabetes, and cardiovascular diseases. The economic cost of poor maternal health and NCD-related pregnancy complications is likely very high but is not adequately researched or documented in the context of long-term population health. Identifying "at-risk" mothers and offspring opens up the opportunity for targeted early preventive action. Following the COVID-19, in reassessing priorities in health, prevention and care of NCDs, especially in pregnant women and children, will have to be prioritized to improve population health.	Non-communicable diseases are linked with maternal and child health and must be prioritized in post-COVID-19 health agendas.	Kapur A, Hod M. Maternal health and non-communicable disease prevention: An investment case for the post COVID-19 world and need for better health economic data [published online 2020 May 13]. Int J Gynaecol Obstet. doi:10.1002/ijgo.13198
Children, adolescents, social distancing measures, psychophysical effects, PTSD, Italy	13-May-20	The Psycho-Physical Impact That COVID-19 Has on Children Must Not Be Underestimated	Acta Paediatrica	Brief Report	By April 16, 2020, 159,107 Italian residents had tested positive for COVID-19, including 1,123 children, up to nine years of age (0.7%) and 1,804 adolescents, between 10 and 19 years old (1.1%). Previous studies have shown that posttraumatic stress disorder scores were four times higher in pediatric patients who were quarantined during epidemics or pandemics, than those whose movements were not restricted. Interventions to avoid the risk of physical and psychological repercussions in the pediatric population should encourage parents to be role models of psychophysical health. Additionally, the role of psychologists to support families and teachers to promote motivational messaging are important.	The authors call for interventions to reduce the psychophysical repercussions of the COVID-19 pandemic on pediatric populations.	Pecoraro L, Dalle Carbonare L, De Franceschi L, Piacentini G, Pietrobelli A. The psycho-physical impact that COVID-19 has on children must not be underestimated [published online 2020 May 13]. Acta Paediatr. doi:10.1111/apa.15347
Neonates, serum antibodies, vertical transmission	13-May-20	Vertical Transmission of Severe Acute Respiratory Syndrome Coronavirus 2: A Systematic Review	American Journal of Perinatology	Short Communication	A total of 22 studies on 83 neonates born to mothers with COVID-19 were included in this systematic review. Among these neonates, three were confirmed with SARS-CoV-2 infection at 16, 36, and 72 hours after birth, respectively, by nasopharyngeal swab RT-PCR tests; another six had elevated virus-specific antibody levels in serum samples collected after birth, but negative RT-PCR test results. However, without positive RT-PCR tests of amniotic fluid, placenta, or cord blood, there is a lack of virologic evidence for intrauterine vertical transmission.	There is currently no direct evidence to support intrauterine vertical transmission of SARS-CoV-2. Further studies on amniotic fluid, placenta, and cord blood are needed.	Yang Z, Liu Y. Vertical Transmission of Severe Acute Respiratory Syndrome Coronavirus 2: A Systematic Review [published online 2020 May 13]. Am J Perinatol. doi:10.1055/s-0040-1712161

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Neonates, NICU ventilators, triage decisions, ethics	13-May-20	Should Extremely Premature Babies Get Ventilators During the COVID-19 Crisis?	The American Journal of Bioethics	Target Article	Triage guidelines differ on whether limited resources should focus on maximizing lives or life-years. Choosing between these two approaches has implications for neonatology. In crisis situations, should neonatal unit guidelines for treating extremely premature newborns be altered to free-up ventilators for adults? Some adults who need ventilators will have a survival rate higher than some extremely premature newborns. However, newborns who survive will likely live longer, maximizing life-years. The authors argue that solidarity must acknowledge the differences between diseases and patient populations. While systematic ethical analyses demonstrate the advantage infants hold in triage, inherent biases place them at a disadvantage. The authors conclude that neonatologists must advocate for systematic and fair consideration of critically ill infants.	This article considers the ethical issue of triage decision-making around ventilator allocation to critically ill newborns and/or adults.	Haward MF, Janvier A, Moore GP, Laventhal N, Fry JT, Lantos J. Should Extremely Premature Babies Get Ventilators During the COVID-19 Crisis? [published online 2020 May 13]. Am J Bioeth. doi:10.1080/15265161.2020.1764134
Neonatal infection, encephalitic symptoms, double-peaked course, Germany	12-May-20	Neonatal Early-Onset Infection With SARS-CoV-2 in a Newborn Presenting With Encephalitic Symptoms	The Pediatric Infectious Disease Journal	Letter to the Editor	In this case report, a healthy female newborn of 40 weeks + 3 days of gestation was born by vacuum extraction; she appeared lethargic and developed therapy refractory fever at 24 hours after birth, progressing to encephalitic symptoms at 54 hours of life. Transferred to the tertiary center NICU, the newborn and her mother were isolated; the mother tested positive for SARS-CoV-2. A multiplex-PCR test of 14 meningitis/encephalitis agents was negative in the newborn, and bacterial cultures of cerebrospinal fluid and blood were sterile. Although the newborn's nasopharyngeal and rectal swabs tested positive for SARS-CoV-2, her cerebrospinal fluid tested negative. At 80 hours of life, the newborn developed respiratory distress and needed oxygen therapy until day 6 of life. At day 10, severe cough emerged, and a chest radiograph confirmed bilateral viral pneumonia. The patient's nasopharyngeal and rectal swabs remained positive until 14 days after birth, when she was discharged without symptoms.	To the authors' knowledge, this is the first report of encephalitic symptoms and a double-peaked course of pulmonary symptoms in a neonate with COVID-19.	Lorenz N, Treptow A, Schmidt S, et al. Neonatal Early-Onset Infection With SARS-CoV-2 in a Newborn Presenting With Encephalitic Symptoms [published online 2020 May 12]. Pediatr Infect Dis J. doi:10.1097/INF.0000000000002735
Children, chest CT, screening tool, sensitivity, viral pneumonia	12-May-20	Value of Chest CT as COVID 19 Screening Tool in Children	European Respiratory Journal	Research Letter	It is unknown whether CT scanning, involving the introduction of ionizing radiation, has value as a screening tool to rule out COVID-19 infections in children with little or no respiratory symptoms or with negative or missing PCR test results. In this review of existing literature, 92 papers were identified that mostly focused on the use of CT scans in diagnosing and/or monitoring COVID-19 disease, rather than ruling it out, in all ages. Most studies did not include subjects with negative PCR, so the true negative rate or specificity could not be calculated. Depending on the study population, the sensitivity, or the ability of chest CT to detect abnormalities in proven COVID-19 patients, ranged between 44-97% (median 69%). In children specifically, the course of disease is generally milder than in adults. Studies show that chest CT may be normal in 35-50% of pediatric cases with minor upper airway symptoms. Depending on the study, the reported sensitivities of CT scanning to detect abnormalities in pediatric patients ranged between 50-74% (median 60%). This implies an unacceptable percentage of false negative cases. The authors conclude that chest CT, rarely performed in children with viral pneumonia and carrying potential harm from ionizing radiation, is not suitable to rule out COVID-19 in pediatric patients with little or no symptoms.	Based on a review of current literature, the authors conclude that chest CT is not a suitable screening tool to rule out COVID-19 in children with mild or no respiratory symptoms.	Merkus PJ, Klein WM. Value of Chest CT as COVID 19 screening tool in children [published online 2020 May 12]. Eur Respir J. doi:10.1183/13993003.01241-2020

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Indirect mortality, maternal and child health, wasting, modelling study, LMICs	12-May-20	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	The Lancet Global Health	Original Article	This study estimates the additional maternal and under-5 child deaths in 118 low- and middle-income countries (LMICs) resulting from the potential disruption of health systems and decreased access to food during the COVID-19 pandemic. The least severe scenario (reductions in coverage of essential maternal and child health (MCH) interventions of 9.8–18.5% and wasting prevalence increase of 10%), over 6 months, would result in 253,500 additional child deaths and 12,200 additional maternal deaths. The most severe scenario (coverage reductions of 39.3–51.9% and wasting increase of 50%), over 6 months, would result in 1,157,000 additional child deaths and 56,700 additional maternal deaths. These additional deaths would represent an increase of 9.8–44.7% in under-5 child deaths per month, and an 8.3–38.6% increase in maternal deaths per month, across the 118 countries. Across the modelled scenarios, the reduced coverage of four childbirth interventions (parenteral administration of uterotonics, antibiotics, and anticonvulsants, and clean birth environments) would account for approximately 60% of additional maternal deaths. The increase in wasting prevalence would account for 18–23% of additional child deaths, and reduced coverage of antibiotics for pneumonia and neonatal sepsis and of oral rehydration solution for diarrhea would together account for around 41% of additional child deaths. These estimates are based on tentative assumptions and represent a wide range of outcomes. Nonetheless, they show that, if routine health care and access to food are disrupted, the increase in child and maternal deaths will be devastating.	In this modelling study, the authors estimate substantial indirect mortality from the COVID-19 pandemic in LMICs, due to disruptions in essential maternal and child health interventions and access to food, leading to increased, prevalence of wasting, among other conditions.	Roberton T, Carter ED, Chou VB, et al. 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 [published online 2020 May 12]. Lancet Glob Health. doi:10.1016/S2214-109X(20)30229-1
Children, routine health services, social protection, LMICs, UNICEF	12-May-20	A wake-up call: COVID-19 and its impact on children's health and wellbeing	The Lancet Global Health	Comment	Roberton et al. present startling new evidence on the potential rise in maternal and child mortality in low- and middle-income countries if essential health services are disrupted as a result of COVID-19. Constrained access to clinics, schools, social workers, water, and sanitation is a particular threat to the most vulnerable populations, and the lack of child protection and broader social services is particularly harmful to women and children in need of safety. Looming above all of these concerns is the economic impact of both the pandemic control measures governments are taking and the predicted knock-on effects of the projected global recession. Representing the approach of UNICEF, the author outlines six key areas of action and investment to overcome the negative impacts of the pandemic. Broadly, these address child health and routine services; water, sanitation, and hygiene; digital infrastructure for education; social protection for families; gender-based violence; and refugee and migrant children.	In response to the modelling estimates proposed by Robertson et al., this commentary from UNICEF proposes key areas of focus to overcome the negative impacts of the COVID-19 pandemic on children's health.	Fore HH. A wake-up call: COVID-19 and its impact on children's health and wellbeing [published online 2020 May 12]. Lancet Glob Health. doi:10.1015/S2214-109X(20)30238-2
Maternal and child health, antenatal care, HIV service delivery, LMICs	12-May-20	Avoiding indirect effects of COVID-19 on maternal and child health	The Lancet Global Health	Comment	In many low-income and middle-income countries (LMICs), COVID-19 is rapidly spreading amid numerous endemic health problems such as HIV, tuberculosis, malaria, and malnutrition, in the context of weak health infrastructures. Roberton et al. report findings from a modelling study to estimate the indirect effects of the COVID-19 pandemic on maternal and child mortality in LMICs. Limitations of their work include applying the same assumptions for the 118 included in the analysis. HIV infection is also excluded from their analysis due to the complexity of service delivery, however as a leading cause of death in women of reproductive age, it should be considered when estimating HIV effects on maternal mortality. Another	This commentary highlights limitations of the Roberton et al. modelling study on indirect effects of the COVID-19 pandemic on maternal and child health, while highlighting an additional example of	Menendez C, Gonzalez R, Donnay F, Leke RGF. Avoiding indirect effects of COVID-19 on maternal and child health [published online 2020 May 12]. Lancet Glob Health. doi:10.1016/S2214-109X(20)30239-4

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					example of potential indirect effects of the pandemic include changing guidelines, in some African countries, to space out antenatal care (ANC) visits every 3 months instead of monthly. With an average gestational age at first ANC visit of 24 weeks, this recommendation implies that many pregnant women will attend an essential preventive health service only once during their pregnancy.	disruptions in antenatal care in some African countries.	
Pregnancy, hospitalization, Black or minority ethnicity, maternal age, obesity, vertical transmission, UK	12-May-20	Characteristics and outcomes of pregnant women hospitalised with confirmed SARS-CoV-2 infection in the UK: a national cohort study using the UK Obstetric Surveillance System (UKOSS)	medRxiv	Preprint (not peer reviewed)	This population-based cohort study uses data from the UK Obstetric Surveillance System (UKOSS) on 427 pregnant women admitted to 194 obstetric units with confirmed SARS-CoV-2 infection between March 1 and April 14, 2020. Estimated incidence of hospitalization with COVID-19 in pregnancy was 4.9 per 1000 maternities (95%CI 4.5-5.4 per 1000). The median gestation at symptom onset was 34 weeks (IQR 29-38 weeks). Black or other minority ethnicity (adjusted OR 4.49, 95%CI 3.37-6.00), older maternal age (aOR 1.35, 95%CI 1.01-1.81 comparing women aged 35+ with those aged 30-34 years), overweight and obesity (aORs 1.91, 95%CI 1.37-2.68 and 2.20, 95%CI 1.56-3.10 respectively compared to women with a BMI<25kg/m2) and pre-existing comorbidities (aOR 1.52, 95%CI 1.12-2.06) were associated with admission with SARS-CoV-2 during pregnancy. 247 women (58%) gave birth or had a pregnancy loss; 180 (73%) gave birth at term. 40 (9%) hospitalized women required respiratory support. Twelve infants (5%) tested positive for SARS-CoV-2 RNA, six of these infants within the first 12 hours after birth.	In this UK study, most pregnant women hospitalized with COVID-19 were in the late second or third trimester. Black or minority ethnicity, overweight or obese BMI, older maternal age, and comorbidities were associated with hospitalization. Most had good outcomes and vertical transmission was uncommon.	Knight M, Bunch K, Vousden N, et al. Characteristics and outcomes of pregnant women hospitalised with confirmed SARS-CoV-2 infection in the UK: a national cohort study using the UK Obstetric Surveillance System (UKOSS) [published online 2020 May 12]. medRxiv. doi:10.1101/2020.05.08.20099268
Children, neonates, clinical presentation and course, vertical transmission	11-May-20	Managing COVID-19 Iinfection in Pediatric Patients	Cleveland Clinic Journal of Medicine	COVID-19 Curbside Consults	Children are less likely to be infected with SARS-CoV-2 than adults and often have a milder course of illness and a lower case fatality rate. Children account for an estimated 1% to 5% of those diagnosed with COVID-19. Even so, pre-school-aged children, infants, and children with underlying health conditions may still be at risk for severe disease and complications. Unique aspects of COVID-19 presentation and course in children and possible vertical transmission to newborns from COVID-19-positive mothers are discussed in this report. To date, there is no clear evidence of intrauterine transmission, but there is a plausible risk of infection during and after delivery. The US Centers for Disease Control and Prevention and American Academy of Pediatrics recommend that newborns born to COVID-19 positive mothers should be considered persons under investigation and tested using nasal and throat swabs via molecular assays at 24 hours and 48 hours of age.	This report summarizes unique aspects of COVID-19 presentation and course in children as well as current evidence on vertical transmission to newborns.	Mon EY, Mandelia Y. Managing COVID-19 Iinfection in pediatric patients [published online 2020 May 11]. Cleve Clin J Med. doi:10.3949/ccjm.87a.ccc022
Pregnancy, maternal outcomes, non-pregnant women, preterm delivery	11-May-20	The Effects of Pregnancy on Women With COVID-19: Maternal and Infant Outcomes	Clinical Infectious Diseases	Editorial Commentary	There have been numerous publications addressing the adverse effects of COVID-19 on pregnant women, as well as their newborn infants. However, limited data are available to determine whether pregnancy itself has any consequences on the health of reproductive aged women with COVID-19. Using a case-control experimental design at a hospital in Hubei province, China, Li et al. found that pregnant women with COVID-19 generally had milder respiratory symptoms, compared to non-pregnant women with COVID-19. A higher incidence of premature delivery in pregnant women with COVID-19 was also reported but was not the result of severe maternal respiratory disease. Despite these favorable clinical outcomes, there are increasing reports of poor clinical outcomes arising from COVID-19 among pregnant women outside of China.	This review summarizes the results of a case-control study in China that found milder respiratory symptoms in pregnant vs. non-pregnant women with COVID-19. The authors also review recent reports on severe COVID-19 disease in pregnant women.	Schwartz DA. The Effects of Pregnancy on Women with COVID-19: Maternal and Infant Outcomes [published online 2020 May 11]. Clin Infect Dis. doi:10.1093/cid/ciaa559

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Child, cystic fibrosis, hemoptysis, poor nutritional status, antibiotherapy, Switzerland	11-May-20	COVID-19: A Message of Hope From a Young Girl With Severe Cystic Fibrosis	Pediatric Pulmonology	Letter to the Editor	This case report describes a 9-year-old girl with severe complicated cystic fibrosis (CF) lung disease, characterized by a need for nighttime ventilatory support, regular intravenous antibiotics, and gastrostomy feeds due to poor nutritional status. She was admitted for new onset of mild hemoptysis after 2 weeks of elective intravenous antibiotherapy. Concomitantly, the patient's father was hospitalized for confirmed SARS-CoV-2 pneumonia. Initially the RT-PCR performed on the patient's nasopharyngeal secretions was negative, but a repeated RT-PCR on a sputum sample was positive 4 days later. Clinically she remained stable without any new symptoms suggestive of COVID-19 or exacerbation of her chronic mild inflammatory syndrome. Her chest X-ray did not worsen from baseline. Her hemoptysis resolved after suspending nebulized antibiotics and mucolytic agents. The unexpected uneventful clinical course in this report is encouraging for other CF patients.	In this case, a 9-year-old girl with severe cystic fibrosis lung disease had an uneventful clinical course of COVID-19.	Blanchon S, Fernandez C, Guerin S, Crisinel PA, Rochat I. COVID-19: A message of hope from a young girl with severe cystic fibrosis [published online 2020 May 11]. Pediatr Pulmonol. doi:10.1002/ppul.24812
Infant, co-infection, RSV, Germany	11-May-20	Co-infection of SARS CoV-2 and Influenza A in a Pediatric Patient in Germany	Klinische Pädiatrie	Short Communication	A 4-month-old infant presented to the outpatient department with 1-day history of fever and cough. The infant's grandmother had tested positive for SARS-CoV-2 the previous day and had last contacted the infant 8 days prior to the described presentation. On examination, the infant showed no clinical signs of pneumonia. A nasopharyngeal swab for RSV and influenza rapid immunochromatographic assay testing was obtained, turning positive for influenza A and negative for RSV. Due to the significant family history for COVID-19, a pharyngeal swab for SARS-CoV-2 RT-PCR testing was also performed and showed a positive result some days later. The patient was sent home, instructed to take Oseltamivir for 5 days, and advised to present to the hospital in case of decreasing fluid intake or continuing fever.	In this case, a 4-month-old infant with co-infection of SARS CoV-2 and influenza A virus developed a mild course of disease.	Wehl G, Laible M, Rauchenzauner M. Co-infection of SARS CoV-2 and influenza A in a Pediatric Patient in Germany [published online 2020 May 11]. Klin Padiatr. doi:10.1055/a-1163-7385
Children, routine vaccinations, MMR, England	11-May-20	Early impact of the COVID-19 pandemic and social distancing measures on routine childhood vaccinations in England, January to April 2020	medRxiv	Preprint (not peer reviewed)	Electronic health records were used to assess the early impact of COVID-19 on routine childhood vaccination in England, through April 26, 2020. Measles, mumps, and rubella (MMR) vaccination counts fell in February 2020 and, in the three weeks after the introduction of social distancing measures, were 19.8% lower (95% CI -20.7% to -18.9%) than the same period in 2019, before improving in mid-April. A gradual decline in hexavalent (protecting against six diseases: diphtheria, tetanus, pertussis [DTaP], poliovirus, hepatitis B virus, and *Haemophilus influenzae* type b) vaccination counts throughout 2020 was not accentuated upon introduction of social distancing measures.	After the introduction of social distancing measures in England, MMR vaccination counts were 19.8% lower than the same period in 2019.	McDonald HI, Tessier E, White JM, et al. Early impact of the COVID-19 pandemic and social distancing measures on routine childhood vaccinations in England, January to April 2020 [published online 2020 May 11]. medRxiv. doi:10.1101/2020.05.07.20094557
Children, clinical characteristics, epidemiology, observed case rate, susceptibility, systematic review	11-May-20	SARS-CoV-2 (COVID-19): What Do We Know About Children? A Systematic Review	Clinical Infectious Diseases	Major Article	This rapid systematic review and narrative synthesis of all literature relating to SARS-CoV-2 in pediatric populations identified 24 related studies. English abstracts of Chinese articles were included. Children appear to be less affected by COVID-19 than adults by observed rate of cases in large epidemiological studies, but limited data on attack rate indicate that children are just as susceptible to infection. This discrepancy may be because children are asymptomatic or too mildly infected to draw medical attention, be tested and counted in observed cases of COVID-19. Data on clinical outcomes are scarce but include several reports of asymptomatic infection and a milder course of disease in young children. Severe cases are not reported in detail and there are little data relating to transmission.	In this systematic review of literature on COVID-19 in pediatric populations, children appear to have a low observed case rate of COVID-19 but similar susceptibility to infection as adults.	Mehta NS, Mytton OT, Mullins EWS, et al. SARS-CoV-2 (COVID-19): What do we know about children? A systematic review [published online 2020 May 11]. Clin Infect Dis. doi:10.1093/cid/ciaa556

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Children, PICU, child deaths, comorbidities, North America	11-May-20	Characteristics and Outcomes of Children With Coronavirus Disease 2019 (COVID-19) Infection Admitted to US and Canadian Pediatric Intensive Care Units	JAMA Pediatrics	Original Investigation	In this cross-sectional study of 46 North American pediatric intensive care units (PICUs), between March 14 and April 3, 2020, 48 children (median: 13 years, range: 4.2-16.6 years) with COVID-19 were admitted. 40 children (83%) had preexisting underlying medical conditions. Of 48 total children, 35 (73%) presented with respiratory symptoms, and 18 (38%) required invasive ventilation. Eleven patients (23%) had failure of 2 or more organ systems. Extracorporeal membrane oxygenation (ECMO) was required for 1 patient (2%). Targeted therapies were used in 28 patients (61%), with hydroxychloroquine being the most commonly used agent either alone (11 patients) or in combination (10 patients). At the completion of the follow-up period, 2 patients (4%) had died, and 15 (31%) were still hospitalized, with 3 still requiring ventilatory support and 1 receiving ECMO. The median (range) PICU and hospital lengths of stay for those who had been discharged were 5 (3-9) days and 7 (4-13) days, respectively.	This early study, from North American PICUs, shows that COVID-19 can result in significant disease burden in children but confirms that severe illness is less frequent than in adults. Prehospital comorbidities appear to be an important factor in children.	Shekerdemian LS, Mahmood NR, Wolfe KK, et al. Characteristics and Outcomes of Children With Coronavirus Disease 2019 (COVID-19) Infection Admitted to US and Canadian Pediatric Intensive Care Units [published online 2020 May 11]. JAMA Pediatrics. doi:10.1001/jamapediatrics.2020.1948
Child, multi-system inflammatory syndrome, Kawasaki Disease, IVIG, tocilizumab, India	10-May-20	Hyper-inflammatory Syndrome in a Child With COVID-19 Treated Successfully With Intravenous Immunoglobulin and Tocilizumab	Indian Pediatrics	Clinical Case Letter	In this case report, an 8-year-old boy was admitted to a local hospital with a 4-day history of fever, cough, and throat pain. On admission, RT-PCR for SARS-CoV-2 was negative. The patient's fever and respiratory symptoms worsened, despite empirical antibiotic therapy, so he was admitted to a referral hospital. Examination showed fever, hypotension, generalized skin rash, bulbar conjunctivitis, cracked lips, strawberry tongue, edema of limbs, tender hepatomegaly and abdominal distention. Investigations showed low hemoglobin, neutrophil predominant leukocytosis, elevated platelet count and erythrocyte sedimentation rates, hyper-ferritinemia, hypoalbuminemia, hyponatremia, and 2+ proteinuria. Repeat nasopharyngeal RT-PCR was positive, and multiplex PCR of nasopharyngeal aspirate detected Coronavirus OC43 and Human Rhino/Enterovirus. Initial differential diagnoses included pneumonia with septic shock, COVID-19 pneumonitis, Kawasaki Disease, and toxic shock syndrome. Following treatment with IVIG and tocilizumab, the patient's fever spikes settled, and inflammatory parameters decreased to baseline. He recovered completely after two weeks of illness. A recent case definition for "Pediatric multisystem inflammatory syndrome temporally associated with COVID-19" has been suggested and is described in this report. The immunopathology behind this phenomenon remains unknown.	This case report adds to growing recognition of a small number of children presenting with a multisystem inflammatory syndrome, sharing features with Kawasaki Disease, that may be associated with COVID-19. Tocilizumab may prove to be an effective second line agent in IVIG refractory children with this hyper-inflammatory syndrome.	Balasubramanian S, Nagendran TM, Ramachandran B, Ramanan AV. Hyper-inflammatory Syndrome in a Child With COVID-19 Treated Successfully With Intravenous Immunoglobulin and Tocilizumab [published online 2020 May 10]. Indian Pediatr. 2020;S097475591600180.
Nutritional status, food insecurity, routine nutrition services, micronutrient supplementa-tion, vulnerable populations	10-May-20	COVID-19 Pandemic - Are We Heading From Health Crisis Towards An Unprecedented Nutrition Crisis?	Current Topics in Medicinal Chemistry	Editorial	The persisting COVID-19 pandemic will have long-lasting effects on the masses i.e. on nutritional status, health, economies and the global food chain. Necessary steps to maintain and promote healthy nutritional status include effective integration of nutrition-supportive measures into COVID-19 action plans, while safeguarding prevailing nutrition programs, particularly for vulnerable populations (children, pregnant women, and the elderly). In addition, awareness must be generated through mobile phone surveys and nutrition counselling through media, regarding the importance of high-quality diets, appropriate infant and young child feeding practices, optimal breastfeeding techniques, and dietary diversity. Keeping in mind the predictable upsurge in malnutrition, due to food insecurity and diversion of healthcare resources away from nutrition programs and towards COVID-19, it is important to provide timely screening, referral services, and micronutrient supplements to vulnerable populations.	This editorial highlights concerns related to and potential strategies to mitigate the growing nutritional crisis due to the food insecurity and disruptions in routine service delivery caused by the COVID-19 pandemic, particularly for vulnerable populations.	Kumar Y, Jain A. COVID-19 Pandemic - Are We Heading From Health Crisis Towards An Unprecedented Nutrition Crisis? [published online 2020 May 10]. Curr Top Med Chem. doi:10.2174/1568026620999200511092629

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Children, emergency department, respiratory infection clinic, asthma, Melbourne, Australia	10-May-20	SARS-CoV-2 Testing and Outcomes in the First 30 Days After the First Case of COVID-19 at an Australian Children's Hospital	Emergency Medicine Australia	Original Research	In this retrospective cohort study at a tertiary children's hospital in Melbourne, Australia, early data were collected on 433 pediatric patients (0-18 years) who presented to the Emergency Department (331, 65%) or Respiratory Infection Clinic (102, 24%) and were tested for SARS-CoV-2, between March 21 and April 19, 2020. SARS-CoV-2 was detected in 4 (0.9%) patients, none of whom were admitted to the hospital or developed severe disease. Of these SARS-CoV-2 positive patients, 1/4 (25%) had a comorbidity, which was asthma. Of the SARS-CoV-2 negative patients, 196/429 (46%) had comorbidities. Risk factors (e.g. contact history with confirmed cases or overseas travel) for COVID-19 were identified in 4/4 SARS-CoV-2 positive patients and 47/429 (11%) SARS-CoV-2 negative patients.	At a tertiary children's hospital in Australia, early data show very low rates of SARS-CoV-2 positive cases in children, none of whom developed severe disease.	Ibrahim LF, Tosif S, McNab S, et al. SARS-CoV-2 Testing and Outcomes in the First 30 Days after the First Case of COVID-19 at an Australian Children's Hospital [published online 2020 May 10]. Emerg Med Australas. doi:10.1111/1742-6723.13550
Child, Kawasaki disease shock syndrome, hypotension, inflammatory markers, USA	9-May-20	Incomplete Kawasaki Disease in a Child With Covid-19	Indian Pediatrics	Clinical Case Letter	This case report describes a 5-year-old previously healthy African American male admitted to the pediatric inpatient floor with daily fever for 8 days. He had a history of rash, swelling, conjunctivitis, decreased appetite, diarrhea, dysuria, and abdominal pain. He had been treated with cefdinir for positive rapid streptococcal antigen test 4 days prior, without clinical improvement. Physical examination showed dry, cracked, erythematous lips, non-exudative conjunctivitis, and bilateral cervical lymphadenopathy but no rash. Clinically, he met criteria for incomplete Kawasaki disease (KD). Initial laboratory workup was significant for leukocytosis, thrombocytopenia, elevated inflammatory markers, hyponatremia, pyuria, hypoalbuminemia, elevated liver enzymes, elevated troponins, and negative rapid influenza A/B antigens. SARS-CoV-2 RNA was detected on RT-PCR from his nasopharyngeal swab. Echocardiogram showed a small global pericardial effusion. He was transferred to the PICU due to hypotension and received fluid boluses and IV immunoglobulin. He was briefly supported with high flow nasal cannula for tachypnea. The patient recovered with supportive therapy for COVID-19 and was discharged after 6 days. Association between COVID-19 and KD shock syndrome has been speculated but warrants further investigation.	In this case report, a 5-year-old child with SARS-CoV-2 infection developed hypotension with elevated inflammatory markers, indicating Kawasaki Disease shock syndrome (KDSS). The association between COVID-19 and KDSS warrants further investigation.	Rivera-Figueroa EI, Santos R, Simpson S, Garg P. Incomplete Kawasaki Disease in a Child with Covid-19 [published online 2020 May 9]. Indian Pediatr. 2020;S097475591600179.
Pregnancy, early postpartum, intensive care, mechanical ventilation, maternal morbidity, non-pregnant women, Sweden	9-May-20	Severe Maternal Morbidity and Mortality Associated With COVID-19: The Risk Should Not Be Down-Played	Acta Obstetricia et Gynecologica Scandinavica	Special Editorial	In a recent report released by the Public Health Agency of Sweden, between Match 19 and April 10, 2020, a total of 53 women with COVID-19 (range: 20-45 years) received intensive care; of these, 13 were or had recently been pregnant. 6/13 pregnant and early postpartum women required invasive mechanical ventilation. An analysis based on an estimate of the total number of pregnant and non-pregnant women in the population of Sweden revealed that the relative risk (RR) for pregnant and early postpartum women (<1 week) with COVID-19 to receive intensive care was 5.4 (95% CI 2.89-10.08) and to require invasive mechanical ventilation was 4.0 (95% CI 1.75-9.14), compared to non-pregnant women of similar age. This risk remained higher (RR 3.5; 95% CI 1.86-6.52) even after accounting for 50% more pregnancies in the denominator to include possible miscarriages and intrauterine deaths. Although the results are based on a relatively small number of cases, the potential elevated risk of maternal morbidity and mortality is significant and should not be ignored.	The authors estimate relative risks of pregnant and early postpartum women with COVID-19 to require intensive care and mechanical ventilation, compared to their non-pregnant counterparts in Sweden.	Westgren M, Pettersson K, Hagberg H, Acharya G. Severe maternal morbidity and mortality associated with COVID-19: The risk should not be down-played [published online, 2020 May 9]. Acta Obstet Gynecol Scand. 2020. doi:10.1111/aogs.13900

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Children, hygiene, asymptomatic transmission, face masks	9-May-20	To mask or not to mask children to overcome COVID-19.	European Journal of Pediatrics	Original Article	To reduce the role of asymptomatic or poorly symptomatic people in COVID-19 transmission, universal use of face masks in addition to hand hygiene and safety distance seems extremely useful. Consequently, preparing the healthy child to use face masks is strongly needed. In addition to the need for masks available in different sizes, the use of masks in children must be preceded by parental and school-based guidance on issues of hygiene, with the aim of ensuring cooperation of children.	Children must be appropriately guided to learn how to use face masks, in order to help reduce asymptomatic COVID-19 transmission.	Esposito S, Principi N. To mask or not to mask children to overcome COVID-19 [published online 2020 May 9]. Eur J Pediatr. doi:10.1007/s00431-020-0367-9
Children, chilblain-like lesions, peak incidence, Spain	9-May-20	Chilblains in Children in the Setting of COVID-19 Pandemic	Pediatric Dermatology	Original Article	Acral lesions on the hands and feet, closely resembling chilblains, have been observed during the peak incidence of the COVID-19 pandemic. In this retrospective review of 22 children and adolescents with chilblain-like lesions in Madrid, Spain, all had lesions of the toes or feet, with 3 also having lesions of the fingers. Pruritus and mild pain were the only skin symptoms elicited, and only 10 had mild respiratory and/or GI symptoms. None had fever. Coagulation tests, hemogram, serum chemistry and lupus anticoagulant were normal in all patients tested. One out of 16 tested cases had elevated D-dimer results, but without systemic symptoms or other lab anomalies. SARS-CoV-2 detection by PCR was positive in 1 out of 19 cases tested. Skin biopsies obtained in 6 patients were consistent with chilblains. On follow-up, all cases showed spontaneous marked improvement or complete healing.	Acute chilblain-like lesions in children and adolescents are reported during a period of peak COVID-19 incidence in Madrid, Spain. These lesions are mildly symptomatic, often requiring no therapy.	Andina D, Noguera-Morel L, Bascuas-Arribas M, et al. Chilblains in children in the setting of COVID-19 pandemic [published online, 2020 May 9]. Pediatr Dermatol. 2020. doi:10.1111/pde.14215
Vitamin C, ascorbic acid, systematic review	8-May-20	Vitamin C for the treatment of COVID-19: A living systematic review	medRxiv	Preprint (not peer reviewed)	This living systematic review aims to provide a timely, rigorous and continuously updated summary of the evidence available on the role of vitamin C in the treatment of patients with COVID-19. Results will be pooled using meta-analysis and the GRADE system will be applied to assess the certainty of evidence for each outcome. A living, web-based version of this review will be openly available during the COVID-19 pandemic and changed whenever there are substantial updates.	The authors introduce a living, web-based systematic review that will provide updated summaries of available evidence on the use of vitamin C in treating COVID-19.	Baladia E, Pizarro AB, Rada G. Vitamin C for the treatment of COVID-19: A living systematic review [published online 2020 May 8]. medRxiv. doi:10.1101/2020.04.28.20083360
Children, pediatric morbidity and mortality, ICU admission	8-May-20	COVID-19 Infection in Children: Estimating Pediatric Morbidity and Mortality	medRxiv	Preprint (not peer reviewed)	Data on pediatric cases were available from government websites for 23 of 70 countries with a minimum of 1000 reported cases by April 13, 2020. Of 424,978 cases in these 23 countries, 8113 (1.9%) occurred in children. Nine publications provided data from 4251 cases in 4 additional countries. Combining data from the websites and publications, admission occurred in 330 of 2361 cases (14%) where data were provided. The ICU admission rate was 2.2% of confirmed cases (44/2031) and 7.2% of admitted children (23/318), where data were provided on these parameters. Death was reported for 15 cases. The true incidence of pediatric infection and disease will only be known once testing is expanded to individuals with less severe or no symptoms.	Children accounted for 1.9% of confirmed cases reported from both publications and government websites. Admission rates vary from 0.3 to 10% of confirmed cases, with about 7% of admitted children requiring ICU care.	Forbes MB, Mehta K, Kumar K, et al. COVID- 19 Infection in Children: Estimating Pediatric Morbidity and Mortality [published online 2020 May 8]. medRxiv. doi:10.1101/2020.05.05.20091751
Human milk, immune response, secretory IgA antibodies	8-May-20	Evidence of a significant secretory-IgA-dominant SARS-CoV-2 immune response in human milk following	medRxiv	Preprint (not peer reviewed)	The extent of the human milk immune response to SARS-CoV-2 is unknown. This response is critical for infants and young children, who experience mild COVID-19 disease but are likely responsible for significant virus transmission. Perhaps even more significant is the fact that milk anti-bodies (Abs) could be purified and used as a COVID-19 therapeutic, given they would likely be of the secretory (s) class and highly resistant to proteolytic degradation in respiratory tissue. In this preliminary report, 15 milk samples obtained from donors previously-infected with SARS-CoV-2, as well as 10 negative control	These data indicate that there is strong sIgA-dominant SARS-CoV-2 immune response in human milk after infection.	Fox A, Marino J, Amanat F, et al. Evidence of a significant secretory-IgA-dominant SARS-CoV-2 immune response in human milk following recovery from COVID-19 [published online 2020 May 8].

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		recovery from COVID-19			samples obtained pre-pandemic, were tested for reactivity to the Receptor Binding Domain of the SARS-CoV-2 Spike protein by ELISA assays measuring IgA, IgG, IgM, and secretory Ab. 80% of samples obtained post-pandemic exhibited IgA reactivity, and all these samples were also positive for secretory Ab reactivity, suggesting the IgA is predominantly sIgA. COVID-19 group mean optical density (OD) values of undiluted milk were significantly greater for IgA (p<0.0001), secretory-type Abs (p<0.0001), and IgG (p=0.017), but not for IgM, compared to pre-pandemic group mean values.		medRxiv. doi:10.1101/2020.05.04.20089995
Pediatrics, procalcitonin, biomarkers, area under curve, differential diagnosis, viral co-infection	8-May-20	Clinical features of suspected pediatric patients with 2019 novel coronavirus infection and the role of procalcitonin in early differential diagnosis	medRxiv	Preprint (not peer reviewed)	As a traditional biomarker, procalcitonin (PCT) has shown superior value in differentiating bacterial and viral infections as well as bacterial co-infections. However, the role of PCT in differentiating between viruses or viral co-infections in children remains unknown. This retrospective analysis aims to investigate the role of PCT in early differential diagnosis of COVID-19 in children. Of 77 suspected pediatric cases of COVID-19, 39 (50.6%) were confirmed. Of these, 4 (5.2%) had viral co-infection. Compared with the non-COVID-19 group (n=33) and the co-infection group (n=4), PCT of the COVID-19 confirmed group (n=35) was significantly reduced (0.05ng/ml [0.029-0.076] vs 0.103ng/ml [0.053-0.21]; P<.001 and vs. 0.144ng/ml [0.109-2.26]; P=.003). The area under curve (AUC) of the overall model is 0.817 ([95%CI] [0.719-0.916]; P<.001). The AUC of PCT is 0.792 ([0.688-0.896]; P<.001). The cut-off value is 0.1ng/ml.	The authors of this study conclude that, with moderate efficacy, PCT can provide an important basis for differentiating COVID-19 alone, other viral infection, or viral coinfection.	Peng D, Zhang J, Xu Y, Liu Z, Wu P. Clinical features of suspected pediatric patients with 2019 novel coronavirus infection and the role of procalcitonin in early differential diagnosis [published online 2020 May 8]. medRxiv. doi:10.1101/2020.04.07.20057315
Pregnancy, labor, social distancing, social support	8-May-20	Coronavirus Disease 2019 (COVID-19) and Pregnancy Combating Isolation to Improve Outcomes	Obstetrics & Gynecology	Current Commentary	With the current global pandemic, new challenges arise as social distancing and isolation have become the standard for safety. Evidence supports the protective benefits of social connections and support during pregnancy and labor. As health care professionals take appropriate precautions to protect patients and themselves from infection, there must be a balance to ensure that the importance of social and emotional support during important milestones, such as pregnancy and childbirth, are not neglected. Resources are available to help pregnant women, and technology represents an opportunity for innovation in providing care.	Social and emotional support have protective benefits during pregnancy and labor and should be preserved in an era of social distancing measures.	Jago CA, Singh SS, Moretti F. Coronavirus Disease 2019 (COVID-19) and Pregnancy Combating Isolation to Improve Outcomes [published online 2020 May 8]. Obstet Gynecol. doi:10.1097/AOG.0000000000003946
Pregnancy, hospitalization, ARDS, preterm delivery, cardiac arrest, United States	8-May-20	Clinical course of severe and critical COVID-19 in hospitalized pregnancies: a US cohort study	American Journal of Obstetrics & Gynecology MFM	Original Research	This cohort study presents 64 pregnant women with COVID-19, hospitalized at 12 U.S. institutions between March 5 and April 20, 2020. 44/64 (69%) had severe disease, and 20/64 (31%) had critical disease. The following pre-existing comorbidities were observed: 25% had a pulmonary condition, 17% had cardiac disease, and the mean BMI was 34 kg/m^2. Gestational age was a mean of 29±6 weeks at symptom onset and 30±6 weeks at hospital admission. The median duration of hospital stay was 6 days for severe and 10.5 days for critical patients (p=0.01). In women with critical disease, prone positioning was performed in 20% of cases, the rate of ARDS was 70%, and re-intubation was necessary in 20%. There was one case of maternal cardiac arrest, but no cases of cardiomyopathy and no maternal deaths. 32 (50%) women in this cohort delivered during the course of hospitalization. 15/17 (88%) of pregnant women with critical COVID-19 had preterm delivery, 94% of them via cesarean. There were no stillbirths, neonatal deaths, or cases of vertical transmission.	In this study of severe and critical COVID-19 in pregnant women, there was a high rate of ARDS, one case of cardiac arrest, but no deaths reported.	Pierce-Williams R, Burd J, Felder L, et al. Clinical course of severe and critical COVID-19 in hospitalized pregnancies: a US cohort study [published online 2020 May 8]. AJOG MFM. doi:10.1016/j.ajogmf.2020.100134

Key Terms	Date Published	Title	Journal / Source	Type of Publication	Summary & Key Points	Specific Observations	Full Citation
Pregnancy, placental swab, fetal membrane swab, intrapartum viral exposure, vertical transmission, New York	8-May-20	Detection of SARS-COV-2 in Placental and Fetal Membrane Samples	American Journal of Obstetrics & Gynecology MFM	COVID-19 Pregnancy Research	Of 32 COVID-19 positive pregnant patients who gave birth between March 1 and April 20, 2020 at NYU Langone Health, placental or membrane swabs were collected from 11 patients. Placental swabs were obtained from the amniotic surface after clearing the surface of maternal blood. Membrane swabs were obtained from between the amnion and chorion after manual separation of the membranes. Three of 11 swabs were positive for SARS-CoV-2 RNA on RT-PCR. None of the neonates tested positive for SARS-CoV2 on days of life 1 through 5, and none displayed symptoms of COVID-19. While there were no clinical signs of vertical transmission, these findings raise the possibility of intrapartum viral exposure. Given the mixing of maternal and fetal fluid and tissue during delivery, the origin of detected SARS-CoV-2 RNA may represent contamination from maternal blood, amniotic fluid, or COVID-19 infection of the membranes and amniotic sac. For infants who were delivered vaginally, contamination with vaginal secretions is also a possible source. Many neonates in this study were born via cesarean section, with decreased length of exposure to potentially contaminated tissues.	SARS-CoV-2 RNA was detected in 3/11 placental or membrane swab samples, suggesting the possibility of intrapartum viral exposure. However, no neonates tested positive for COVID-19 in this study.	Penfield CA, Brubaker SG, Limaye MA, et al. Detection of SARS-COV-2 in Placental and Fetal Membrane Samples [published online 2020 May 8]. AJOG MFM. doi:10.1016/j.ajogmf.2020.100133
Postpartum death, maternal mortality, multi-organ failure, cardiopulmonary arrest, New York	8-May-20	A Postpartum Death Due to Coronavirus Disease 2019 (COVID-19) in the United States	Obstetrics & Gynecology	Case Report	A 36-year-old patient at 37 weeks' gestation presented with 1-week history of shortness of breath, fever, cough, and sore throat, to a hospital in Queens, New York. Within 3 hours of admission, she experienced respiratory distress, required intubation, and underwent cesarean delivery and transfer to the intensive care unit. She subsequently decompensated, with multiorgan failure, sepsis, and cardiopulmonary arrest within 36 hours of initial presentation, despite aggressive supportive care and investigational therapies. The pathogenesis leading to rapid deterioration is unknown.	In this case report from Queens, New York, a third trimester pregnant patient with COVID-19 experienced rapid onset of critical complications that proved fatal, despite an indolent presentation.	Vallejo V, Ilagan JG. A Postpartum Death Due to Coronavirus Disease 2019 (COVID-19) in the United States [published online, 2020 May 8]. Obstet Gynecol. 2020. doi:10.1097/AOG.0000000000003950
Children, age-related susceptibility, host factors, protective immunity	8-May-20	Lessons From COVID-19 in Children: Key Hypotheses to Guide Preventative and Therapeutic Strategies	Clinical Infectious Diseases	Review Article	The COVID-19 pandemic reveals a peculiar trend of milder disease and lower rates of case fatality in children compared to adults. Consistent epidemiologic evidence of reduced severity of infection in children across different populations and countries suggests there are underlying biologic differences between children and adults that mediate differential disease pathogenesis. The current review summarizes the current knowledge of pediatric clinical disease, role in transmission, risks for severe disease, protective immunity, as well as novel therapies and vaccine trials for children. The authors define key hypotheses and areas for future research that can use the pediatric model of disease, transmission, and immunity to develop preventive and therapeutic strategies for people of all age groups.	Authors review hypotheses, related to host factors and protective immunity between children and adults, that may explain differences in case fatality and severity of COVID-19 disease.	Singh T, Heston SM, Langel SN, et al. Lessons from COVID-19 in children: Key hypotheses to guide preventative and therapeutic strategies [published online, 2020 May 8]. Clin Infect Dis. 2020. doi:10.1093/cid/ciaa547
Pregnancy, ARDS, preterm delivery, placental pathology, neonatal serology, San Francisco, CA	8-May-20	Acute Respiratory Distress Syndrome in a Preterm Pregnant Patient With Coronavirus Disease 2019 (COVID-19)	Obstetrics & Gynecology	Case Report	This case report describes a pregnant woman at 28 weeks' gestation, who developed acute respiratory distress syndrome (ARDS) from SARS-CoV-2 infection. Her medical history was significant for moderate asthma, gestational diabetes mellitus, obesity, and three prior cesarean deliveries. The patient's deteriorating respiratory condition prompted uncomplicated cesarean delivery; her oxygenation and respiratory mechanics improved within hours of delivery, though she required prolonged mechanical ventilation until postpartum day 10. After birth, the newborn was resuscitated and intubated for respiratory distress; he was clinically stable at day 16 of life. Neonatal oral, nasopharyngeal, and rectal swabs for SARS-	In this case report, early delivery improved respiratory function in a pregnant patient with ARDS requiring positive-pressure ventilation. A preterm male neonate was delivered via cesarean section and tested negative for both	Blauvelt CA, Chiu C, Donovan AL, et al. Acute Respiratory Distress Syndrome in a Preterm Pregnant Patient With Coronavirus Disease 2019 (COVID-19) [published online, 2020 May 8]. Obstet Gynecol. 2020.

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					CoV-2, as well as COVID-19 IgG and IgM, were all negative. Placental pathology showed acute chorioamnionitis, with no histologic evidence of other placental infections.	SARS-CoV-2 viral RNA on RT-PCR and COVID-19 serologies.	doi:10.1097/AOG.0000000000003949
Maternal psychological stress, fetal growth, neuro-developmental disorders	8-May-20	The COVID-19 Pandemic, Psychological Stress During Pregnancy, and Risk of Neurodevelopmental Disorders in Offspring: A Neglected Consequence	Journal of Psychosomatic Obstetrics & Gynecology	Letter to the Editor	Psychological stress is an emerging challenge of the COVID-19 pandemic and may be more prevalent among pregnant women than other individuals, although data are lacking. Maternal psychological distress (e.g. stress, anxiety, and depression) has been found to be a risk factor for child or adult neurodevelopmental disorders, such as attention deficit hyperactivity disorder, autism spectrum disorder, schizophrenia spectrum disorders, antisocial behavior and depressive symptoms. Psychosocial stress can augment maternal inflammation and changes in the hypothalamo-pituitary-adrenal (HPA)-axis related hormones. These changes consequently impact fetal neural development and may be involved in the etiopathogenesis of neurodevelopmental disorders of offspring.	The authors suggest that psychological stress during the COVID-19 pandemic during pregnancy may have an adverse impact on fetal growth and neurodevelopmental disorders.	Abdoli A, Falahi S, Kenarkoohi A, et al. The COVID-19 pandemic, psychological stress during pregnancy, and risk of neurodevelopmental disorders in offspring: a neglected consequence [published online, 2020 May 8]. J Psychosom Obstet Gynaecol. 2020;1-2. doi:10.1080/0167482X.2020.1761321
Children, adolescents, clinical characteristics, preliminary data, Italy	7-May-20	Multicentre Italian Study of SARS-CoV-2 Infection in Children and Adolescents, Preliminary Data as at 10 April 2020	European Surveillance	Rapid Communication	This report presents preliminary results of an Italian multi-center study of 168 laboratory-confirmed pediatric cases of COVID-19 (median age: 2.3 years, range: 1 day-17.7 years, 55.9% male), of which 67.9% were hospitalized and 19.6% had comorbidities. 67.3% (113/168) of children had at least one parent who tested positive for SARS-CoV-2 infection. All but four (2.5%) enrolled children were symptomatic. Fever was the most common symptom; 31 children developed gastrointestinal symptoms, and 5 had seizures. Over the course of hospitalization, 33 children (19.6%) developed complications, such as interstitial pneumonia (n=26), severe acute respiratory illness (n=14) and peripheral vasculitis (n=1); two of the 33, a preterm neonate and a 2-month-old infant with congenital heart disease, required intensive care. Viral co-infection was documented in 10 children (5.9%). In total, 49 children received experimental treatments. All patients in the study recovered.	This report presents preliminary data from a multi-center study of pediatric COVID-19 cases in Italy, confirming low case fatality and favorable clinical course in children.	Garazzino S, Montagnani C, Donà D, et al. Multicentre Italian study of SARS-CoV-2 infection in children and adolescents, preliminary data as at 10 April 2020. Euro Surveill. doi:10.2807/1560-7917.ES.2020.25.18.2000600
Pregnancy, neonatal infection, emergency cesarean section, London, UK	7-May-20	Re: Novel Coronavirus COVID-19 in late pregnancy: outcomes of first nine cases in an inner city London hospital	European Journal of Obstetrics & Gynecology and Reproductive Biology	Correspondence	The authors report on 9 cases of laboratory-confirmed COVID-19 in mothers who delivered at an inner-city hospital in London, between March 7 and April 22, 2020. The median age and gestation at delivery were 31 years (range 18-39 years) and 39 weeks (range 27-39 weeks) respectively. 7/9 (89%) women had mild to moderate prodromal symptoms that warranted high level of suspicion for screening. 2 of the 9 women delivered via emergency caesarean section (CS) due to deteriorating maternal respiratory function; accompanying lymphopenia was a notable clinical feature in these cases. Of the remaining 7 women, 1 mother had a vaginal delivery, 6 underwent elective CS for obstetric indications, while an emergency CS was performed in 1 woman for suboptimal cardiotocography. All neonates were immediately isolated from mothers at birth; only 1 neonate (born to the most respiratory-compromised mother) developed signs of pneumonia on day 6 of life and was confirmed to have SARS-CoV-2 based on nasopharyngeal RT-PCR.	In this case series of 9 mothers with COVID-19 from London, 2 women with deteriorating respiratory function delivered via emergency cesarean section. One neonate tested positive for SARS-CoV-2 infection.	Govind A, Essien S, Kartikeyan A, et al. Re: Novel Coronavirus COVID-19 in late pregnancy: outcomes of first nine cases in an inner city London hospital [published online, 2020 May 7]. Eur J Obstet Gynecol Reprod Biol. 2020;doi:10.1016/j.ejogrb.2020.05.004

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Pregnancy, hospitalization, ICU admission, non-pregnant women, New York State	7-May-20	Intensive Care Unit Admissions for Pregnant and Non-Pregnant Women with COVID-19	American Journal of Obstetrics & Gynecology	Research Letter	Of all acutely symptomatic patients evaluated at a large hospital system in New York State, between March 2 and April 9, 2020, 1,168 symptomatic patients were diagnosed with COVID-19. Of these, 332 (28.4%) were non-pregnant women, and 82 (7.0%) were pregnant women. Of these pregnant symptomatic patients with diagnosed COVID-19, 2.8% had only mild respiratory disease and were admitted for obstetrical indications. In total, 50 non-pregnant women (15.1%, 50/332) and 8 pregnant women (9.8%, 8/82) were admitted to the ICU for worsening respiratory status, a difference that was not statistically significant (p=0.22).	The authors conclude that hospitalized pregnant women with COVID-19 are not at increased risk for ICU admission compared to their non-pregnant counterparts.	Blitz MJ, Grünebaum A, Tekbali A, et al. Intensive Care Unit Admissions for Pregnant and Non-Pregnant Women with COVID-19 [published online 2020 May 7]. AJOG. doi:10.1016/j.ajog.2020.05.004
Children, neonates, pregnancy, clinical surveillance, Public Health England, UK	7-May-20	Prioritising Paediatric Surveillance During the COVID-19 Pandemic	Archives of Disease in Childhood	Editorial	This editorial describes efforts to collect surveillance data by Public Health England (PHE), which receives electronic notifications of all confirmed COVID-19 cases in children, from National Health Service (NHS) hospital laboratories in the UK. PHE is also working on a collaborative effort to conduct clinical surveillance of COVID-19 in neonates from birth up to 28 days of life through the British Pediatric Surveillance Unit, which will be linked to the UK Obstetric Surveillance System. Lastly, PHE is conducting sample collections to assess risk of vertical transmission in pregnant women with COVID-19, as well as seroprevalence surveys in children.	Public Health England is an executive agency, working in collaboration with the UK health system, to conduct clinical surveillance of COVID-19 in children, neonates, and pregnant women.	Ladhani SN, Amin-Chowdhury Z, Amirthalingam G, et al. Prioritising paediatric surveillance during the COVID-19 pandemic [published online, 2020 May 7]. Arch Dis Child. 2020. doi:10.1136/archdischild-2020-319363
Children, primary care, routine, care, International Pediatric Association	7-May-20	Promoting and Supporting Children's Health and Healthcare During COVID-19 - International Paediatric Association Position Statement	Archives of Disease in Childhood	Original Research	This paper provides recommendations from the International Pediatric Association (IPA) for children's health and healthcare during COVID-19. The IPA is a membership organization of 169 pediatric societies, which includes 144 national pediatric societies, 10 regional pediatric societies, and 13 international pediatric specialty societies. The IPA outlines priorities for preserving newborn, child, and adolescent health during the COVID-19 crisis and beyond, where social distancing and lockdowns threaten access to routine care, immunization, and preventive services. The authors also recognize the need for specific strategies to reach children and youth at greatest risk, including those in low- and middle-income countries, as well as in fragile settings such as refugee camps.	This paper summarizes recommendations from the International Pediatric Association in preserving newborn, child, and adolescent health, by maintaining systems of primary care during the COVID-19 pandemic.	Klein JD, Koletzko B, El-Shabrawi MH, et al. Promoting and supporting children's health and healthcare during COVID-19 - International Paediatric Association Position Statement [published online, 2020 May 7]. Arch Dis Child. 2020. doi:10.1136/archdischild-2020-319370
Pregnancy, obstetric practice, implementation, New York, USA	7-May-20	Caring for Pregnant Patients with COVID-19: Practical Tips Getting from Policy to Practice	American Journal of Perinatology	Clinical Opinion	Authors from New York have experience caring for over 80 COVID-19 infected pregnant women at their institution and have encountered many challenges in applying new national standards for care. In this article, they review how to change outpatient and inpatient practices, as well as develop and disseminate new hospital protocols, and highlight the psychosocial challenges for pregnant patients and their providers.	Authors offer a blueprint for implementation of new standards of care for obstetric practice, to help providers and hospitals prepare as the number of COVID-19 cases increases in the United States.	London V, McLaren R Jr, Stein J, et al. Caring for Pregnant Patients with COVID-19: Practical Tips Getting from Policy to Practice [published online, 2020 May 7]. Am J Perinatol. 2020. doi:10.1055/s-0040-1710539

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Pregnancy, preterm neonate, breast milk sample, Belgium	7-May-20	COVID-19 in a 26-week preterm neonate	Lancet Child & Adolescent Health	Case Report	An extremely preterm female neonate (26 gestational weeks + 4 days) was born at a tertiary level hospital in Brussels, Belgium, on March 1, 2020. The mother had been referred from a peripheral hospital for pre-eclampsia and suspected cholecystitis. During hospitalization, the mother developed HELLP (hemolysis, elevated liver enzymes, and low platelet count) syndrome and intramuscular corticosteroids were administered for fetal pulmonary maturation. The neonate was delivered by cesarean section 48 hours later and transferred to the NICU, where she received non-invasive intermittent positive pressure ventilation and surfactant therapy. Despite a pneumothorax requiring drainage, the neonate remained stable in a closed incubator throughout her admission. On day 6 after delivery, the mother's nasopharyngeal swab tested positive for SARS-CoV-2, and the neonate tested positive the following day. Prior to the mother's diagnosis, the neonate had received maternal expressed breast milk, which had tested negative for SARS-CoV-2. RT-PCR testing of the neonate's nasopharyngeal swab was positive 7 days after the initial positive test and tested negative after 14 days; the mother tested negative only after 21 days.	This case study describes an extremely preterm neonate, born to a mother with COVID-19. Both were diagnosed with SARS-CoV-2 following delivery and remained clinically stable. A maternal breast milk sample tested negative for SARS-CoV-2 RNA.	Piersigilli F, Carkeek K, Hocq C, van Grambezen B, Hubinont C, Chatzis O et al. COVID-19 in a 26-week preterm neonate [published online 2020 May 7]. Lancet Child & Adol Health. doi:10.1016/S2352-4642(20)30140-1
Pregnancy, vaginal swab, rectal swab, perineal contamination, cesarean vs. natural delivery	7-May-20	SARS-CoV-2 Possible Contamination of Genital Area: Implications for Sexual and Vertical Transmission Routes	Journal of the European Academy of Dermatology and Venereology	Letter to Editor	The SARS-CoV-2 virus can be transmitted from person to person, directly or indirectly, via the respiratory, oro-fecal and probably sexual routes. However, mother-to-child transmission through the placenta probably does not occur, or likely occurs very rarely. This letter proposes a decision algorithm that takes into account these possible routes of transmission. Routine RT-PCR assays for SARS-CoV-2 detection should be performed in all pregnant women, on nasopharyngeal, vaginal, and rectal swabs. The possibility of perineal contamination, including the vulvar-vaginal area, should also be considered. The authors suggest cesarean delivery should be performed if SARS-CoV-2 is detected on vaginal or rectal swab; natural delivery could be otherwise permitted, since it has several advantages for maternal and neonatal health over cesarean section.	The authors suggest that cesarean delivery should be performed if SARS-CoV-2 viral RNA is detected in either vaginal or rectal swabs from a pregnant woman. Otherwise, natural delivery should be prioritized.	Delfino M, Guida M, Patrì A, Spirito L, Gallo L, Fabbrocini G. SARS-CoV-2 possible contamination of genital area: implications for sexual and vertical transmission routes [published online, 2020 May 7]. J Eur Acad Dermatol Venereol. 2020. doi:10.1111/jdv.16591
Children, pediatric immune system, asymptomatic carrier	7-May-20	COVID-19 in Newborns and Infants-Low Risk of Severe Disease: Silver Lining or Dark Cloud?	American Journal of Perinatology	Clinical Opinion	Data from China and the United States suggest a low prevalence of COVID-19 among neonates, infants, and children, with those affected not suffering from severe disease. In this article, the authors consider different theories to explain why this novel agent is sparing neonates, infants, and young children. These theories include the protective role of fetal hemoglobin in neonates; immature ACE2 interfering with viral entry into host cells; cross-immunity with other viral agents common in childhood; incomplete development of natural immunity leading to reduced risk for systemic inflammatory response syndrome (i.e. cytokine storm); differences in humoral immunity; and more efficient T-cells. The low severity of SARS-CoV-2 infection in the pediatric population is associated with a high incidence of asymptomatic or mildly symptomatic infection, making them efficient carriers and potentially major players in SARS-CoV-2 transmission to vulnerable adults.	Various features of the pediatric immune system are discussed to provide explanations for lower rates of infection and severe COVID-19 among children. Since most pediatric cases are asymptomatic, children are likely to be efficient carriers of infection according to the authors.	Rawat M, Chandrasekharan P, Hicar MD, Lakshminrusimha S. COVID-19 in Newborns and Infants-Low Risk of Severe Disease: Silver Lining or Dark Cloud? [published online, 2020 May 7]. Am J Perinatol. 2020. doi:10.1055/s-0040-1710512

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Neonatal emergency transport system, standardized operational procedures, Italy	7-May-20	Neonatal Emergency Transport System During COVID-19 Pandemic in the Veneto Region: Proposal for Standard Operating Procedures	Pediatric Research	Correspondence	Neonatal Emergency Transport Service (NETS) is an essential service, especially during the COVID-19 pandemic. This report from the Veneto region of Italy presents the first recommendations available on how to reorganize NETS in order to centralize SARS-CoV-2 positive newborns and protect low-risk patients. The authors identify safe, standardized, operational procedures that are crucial for recognizing cases of SARS-CoV-2 infection in newborns, creating a pathway for the best stabilization and ambulance transport, and minimizing the risk of contamination while providing the best possible care for the newborn.	This report from Italy outlines standardized operational procedures for reorganizing a Neonatal Emergency Transport Service during the COVID-19, in order to minimize contamination risk and better stabilize potentially infected newborns.	Cavicchiolo ME, Doglioni N, Ventola MA, et al. Neonatal emergency transport system during COVID-19 pandemic in the Veneto Region: proposal for standard operating procedures [published online, 2020 May 7]. Pediatr Res. 2020. doi:10.1038/s41390-020-0937-z
Children, hospitalization, clinical characteristics, multicenter study, China	7-May-20	Children hospitalized for coronavirus disease 2019 (COVID-19): a multicenter retrospective descriptive study.	Journal of Infection	Letter to the Editor	Reports analyzing pediatric patients with COVID-19, particularly outside Wuhan, China, are limited. This letter presents data on 46 hospitalized children (≤18 years), with SARS-CoV-2 positive RT-PCR results of throat swabs, from 4 tertiary-care hospitals in Guangdong, Hunan, and Hubei provinces, China between January 9 and March 9, 2020. The median age of children was 8 years (IQR: 4-14 years), and 32 children (70%) had at least one infected family member. All cases were non-severe by clinical examination, and no children had comorbidities. 22 children (48%) were asymptomatic at onset; none experienced gastrointestinal symptoms. 20 children (43%) had chest imaging abnormalities. None required mechanical ventilation or intensive care. All have been discharged, as of March 9. The median length of hospital stay was 15 days. Four children had positive rectal swabs but negative throat swabs after recovery.	This case series reports on 46 hospitalized children with SARS-CoV-2 infection from hospitals in 3 provinces of China, who had mild symptoms and favorable clinical course.	Zhang V, Liu S, Zhang J et al. Children hospitalized for coronavirus disease 2019 (COVID-19): a multicenter retrospective descriptive study [published online 2020 May 7]. Journal of Infection. doi:10.1016/j.jinf.2020.04.045
Children, asymptomatic, hyperinflammatory syndrome, Kawasaki disease shock syndrome, child mortality, UK	7-May-20	Hyper-inflammatory shock in children during COVID-19 pandemic	The Lancet	Correspondence	During a period of 10 days in mid-April 2020, South Thames Retrieval Service (London, UK) noted an unprecedented cluster of eight children with hyperinflammatory shock, showing features similar to Kawasaki disease shock syndrome. Six of the eight children were of Afro-Caribbean descent, and five were boys. All children except one were well above the 75th centile for weight. Four children had known family exposure to COVID-19. All tested negative for SARS-CoV-2 infection during the course of hospitalization. Clinical presentations included unrelenting fever, variable rash, conjunctivitis, peripheral edema, and generalized extremity pain with significant gastrointestinal symptoms. All progressed to warm, vasoplegic shock, requiring hemodynamic support and mechanical ventilation for cardiovascular stabilization. One child developed arrhythmia with refractory shock and died from a large cerebrovascular infarct. Since discharge of the remaining patients, two of the children have tested positive for SARS-CoV-2 infection (including the child who died, in whom SARS-CoV-2 was detected postmortem).	A clinical picture of hyperinflammatory syndrome, with multiorgan involvement similar to Kawasaki disease shock syndrome, may represent a new phenomenon affecting previously asymptomatic children with SARS-CoV-2 infection.	Riphagen S, Gomez X, Gonzalez-Martinez C, Wilkinson N, Theocharis P. Hyperinflammatory shock in children during COVID-19 pandemic [published online 2020 May 7]. Lancet. doi:1.1016/S0140-6736(20)31094-1

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Children, clinical trial enrollment, pediatric treatment	7-May-20	Inclusion of Children in Clinical Trials of Treatments for Coronavirus Disease 2019 (COVID-19)	JAMA Pediatrics	Viewpoint	Clinical trials of several therapies for COVID-19 are being rapidly designed or already enrolling patients, but few are currently enrolling children. Between February 1 and April 11, 2020, there were 275 COVID-19 interventional clinical trials registered on ClinicalTrials.gov, of which only 30 were open to any patients younger than 18 years. In addition, global large-scale trials by the National Institutes of Health and WHO plan to enroll only adults. The exclusion of children from COVID-19 clinical trials is a lost opportunity to generate timely knowledge to guide treatment of pediatric populations. Simple extrapolation from adult to pediatric patients may not account for developmental differences in pathophysiology and drug metabolism, leaving children vulnerable to ineffective dosing or possibly unsafe treatments. Past experience demonstrates that it is possible to enroll children in clinical trials during epidemics, like the 2014 Ebola epidemic.	The exclusion of children from the majority of clinical trials for COVID-19 therapies may lead to ineffective dosing or unsafe treatments, due to a lack of evidence in pediatric populations.	Hwang TJ, Randolph AG, Bourgeois FT. Inclusion of Children in Clinical Trials of Treatments for Coronavirus Disease 2019 (COVID-19) [published online 2020 May 7]. JAMA. doi:10.1001/jamapediatrics.2020.1888
Child, liver transplant, immuno-suppression, EBV co-infection, Italy	6-May-20	Child With Liver Transplant Recovers From COVID-19 Infection. A Case Report	Archives de Pédiatrie	Short Communication	A 55-month-old girl presented with asymptomatic Epstein-Barr Virus (EBV) primary infection five months after undergoing liver transplantation (from her father, who was EBV positive). In mid-March 2020, the child developed rhinitis shortly after her mother developed symptoms of later confirmed COVID-19. Two days later, the child developed fever, cough, and polypnea; three days later, she was referred to a hospital where she was diagnosed with COVID-19 on a nasopharyngeal swab. On admission, she had polypnea but no other signs of respiratory distress. She had no inflammatory syndrome and recovered from COVID-19 despite the high level of immunosuppression caused by her tacrolimus treatment to prevent transplant rejection.	To the authors' knowledge, this is the first case report of COVID-19 in an immunosuppressed pediatric patient with liver transplantation and confirmed co-infection with Epstein-Barr virus (EBV).	Morand A, Roquelaure B, Colson P, et al. Child with liver transplant recovers from COVID-19 infection. A case report [published online 2020 May 6]. Arch Pediatr. doi:10.1016/j.arcped.2020.05.004
Pregnancy, neonates, maternity care, clinical practice guidelines	6-May-20	Review of clinical practice guidelines for the care of pregnant women (and their babies) during COVID-19	Cochrane Pregnancy and Childbirth	Review	The authors of this review have developed a protocol to identify, collate and summarize national clinical practice guideline recommendations that address 14 key questions related to the care of pregnant women (and their newborns) during the COVID-19 pandemic. Nineteen countries with >10,000 confirmed COVID-19 cases were included, and two reviewers from each country searched for country-specific clinical practice guidelines. The consensus level across countries was set at 80% (i.e. where 80% of countries with a guideline that addressed the question made the same recommendation). Key findings are organized by COVID-19 status in pregnant women.	This review presents consensus recommendations on maternity care from 19 countries with >10,000 confirmed COVID-19 cases. Importantly, there was a lack of consensus on a variety of issues between issued guidelines.	Devane D, Kellie F, Finucane E, et al. on behalf of the Cochrane Pregnancy and Childbirth COVID Group. Review of clinical practice guidelines for the care of pregnant women (and their babies) during COVID-19 [published online 2020 May 6]. Cochrane.
Infant, anal swab, throat swab, hospitalization, Brazil	6-May-20	An infant with a mild SARS-CoV-2 infection detected only by anal swabs: a case report	The Brazilian Journal of Infectious Diseases	Case Report	This case report presents an 8-month-old infant, who was hospitalized with 1-day history of non-productive cough and runny nose. Chest CT showed no abnormal findings. The patient's anal swab was positive for SARS-CoV-2 via RT-PCR on day 2 after admission and remained positive for 8 days. Throat swabs were persistently negative throughout the hospital stay. Mild and asymptomatic cases of COVID-19, especially in children, might present with RT-PCR negative nasal/pharyngeal swabs and RT-PCR positive anal swabs. These patients are potential sources of infection via fecal–oral transmission.	This brief case report describes a hospitalized infant SARS-CoV-2 infection, confirmed in anal swab samples, which remained positive for 8 days. Throat swab samples were negative throughout the patient's hospital stay.	Li J, Feng J, Liu TH, Xu FC, Song GQ. An infant with a mild SARS-CoV-2 infection detected only by anal swabs: a case report [published online, 2020 May 6]. Braz J Infect Dis. doi:10.1016/j.bjid.2020.04.009

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Pregnancy, postpartum respiratory distress, decompensation, neonates, Canada	6-May-20	Postpartum exacerbation of antenatal COVID-19 pneumonia in 3 women	Canadian Medical Association Journal	Original Article	In this case series, 3 women with histories of COVID-19 exposures were admitted in their third trimester for delivery. All women delivered by cesarean section, and all newborns tested negative for SARS-CoV-2 on RT-PCR. Between 28-81 hours postpartum, all women showed postpartum respiratory distress with deoxygenation and sudden clinical decompensation, associated with lymphopenia, elevated CRP, and changes in chest CT consistent with SARS-CoV-2 infection. The authors hypothesize that the develop of serious symptoms after delivery may be due to hemodynamic, immunologic and plasma volume changes that interfered with normal hormonal and diuresis changes postpartum. These changes may have predisposed to further changes in pulmonary vasculature and decompensation, particularly in immunocompromised hosts with COVID-19, who have systemic inflammatory changes.	Three reported cases of pregnant women with COVID-19 show that normal peripartum chest CT, in the presence of mild symptoms, does not preclude an abrupt postpartum decompensation.	An P, Wood BJ, Li W, Zhang M, Ye Y. Postpartum exacerbation of antenatal COVID-19 pneumonia in 3 women [published online, 2020 May 6]. CMAJ. 2020. doi:10.1503/cmaj.200553
Infants, neonates, preterm delivery, pediatric intensive care, UK	6-May-20	COVID-19 in Neonates and Infants: Progression and Recovery	The Pediatric Infectious Diseases Journal	Brief Report	This case series reports on 8/70 (11.4%) SARS-CoV-2 positive infants (range: 5 days-12 months), who were tested between March 10 and April 17, 2020. 5/8 (63%) developed fever, 4/8 (50%) had lower respiratory tract involvement, 2/8 (25%) had neutropenia and thrombocytosis, and 4/8 infants (50%) were treated for suspected sepsis with broad-spectrum antibiotics. Only 1/8 (13%) required pediatric intensive care following premature delivery at 34 weeks' gestation; the neonate was still able to be breastfed after delivery. All patients were eventually discharged.	In this case series of neonates and infants, cases of COVID-19 ranged from asymptomatic to moderately severe; all recovered quickly and were asymptomatic by discharge.	Ng KF, Bandi S, Bird PW, Wei-Tze Tang J. COVID-19 in Neonates and Infants: Progression and Recovery [published online, 2020 May 6]. Pediatr Infect Dis J. 2020. doi:10.1097/INF.0000000000002738
Children, risk factors, inflammatory biomarkers, lung segment involvement, China	6-May-20	The Risk of Children Hospitalized With Severe COVID-19 in Wuhan	The Pediatric Infectious Diseases Journal	Original Studies	This retrospective case-control study of children with SARS-CoV-2 infection, at Wuhan Children's Hospital, analyzed risk factors associated with the development and progression of COVID-19. Of 260 children admitted by March 14, 2020, 8 children were diagnosed with severe COVID-19 pneumonia and included in this study. Thirty-five children with non-severe COVID-19 infection, matched for age, sex and date of admission, were randomly selected from hospital admissions. In severe cases, the most common symptoms were dyspnea (87.5%), fever (62.5%) and cough (62.5%). White blood cell count was significantly higher in severe children than non-severe children. Levels of inflammatory bio-makers, such as CRP, IL-6, IL-10 and D-dimer, were elevated in severe children compared with non-severe children on admission. In addition, levels of total bilirubin and uric acid were clearly elevated in severe children compared with non-severe children on admission. All severe children displayed lesions on chest CT; more lung segments were involved in severe children than in non-severe children, which was the only risk factor associated with severe COVID-19 pneumonia in multivariable analysis.	In this case-control study comparing severe vs. non-severe cases of COVID-19 in children, the involvement of ≥3 lung segments was associated with greater risk of severe disease. Elevated inflammatory biomarkers, like IL-6, high total bilirubin, and D-dimer, were also identified as early risk factors for severe disease.	Wang Y, Zhu F, Wang C, et al. The Risk of Children Hospitalized With Severe COVID-19 in Wuhan [published online, 2020 May 6]. Pediatr Infect Dis J. 2020. doi:10.1097/INF.0000000000002739
Child, hematuria, multi-organ involvement, respiratory virus panel, Brazil	6-May-20	Hematuria Associated With SARS-CoV-2 Infection in a Child	The Pediatric Infectious Diseases Journal	Letters to the Editor	This case report describes a 10-year-old female, previously healthy, who was admitted to the emergency department with a one-day history of fever, mild respiratory symptoms, and hematuria. Urinalysis showed the presence of normally shaped red blood cells and renal ultrasound showed no abnormalities. The patient's nasopharyngeal swab specimen was positive for SARS-CoV-2 RNA and negative for all other respiratory viruses. The urine sample was negative for SARS-CoV-2 RNA. Nasopharyngeal RT-PCR tests remained positive on day 7 but negative on day 21 after onset of symptoms.	A case of mild COVID-19 in a 10-year-old child presented with mild respiratory symptoms and hematuria, suggesting the possibility of multi-organ involvement.	Almeida FJ, Olmos RD, Oliveira DBL, et al. Hematuria Associated With SARS-CoV-2 Infection in a Child [published online, 2020 May 6]. Pediatr Infect Dis J. 2020.

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					Hematuria and renal injury have been commonly described in viral respiratory infections, like influenza and adenovirus, and have been observed in adults hospitalized with COVID-19. Pediatricians should be aware of the possibility of similar presentations of multi organ involvement in children.		doi:10.1097/INF.0000000000002737
Children, co-infection, respiratory pathogens, China	6-May-20	Co-infection and Other Clinical Characteristics of COVID-19 in Children	Pediatrics	Peer-Reviewed Article (pre-publication release)	A total of 74 pediatric patients with RT-PCR confirmed COVID-19 were included in this study. None of the children had comorbidities. Of the 68 cases whose epidemiological data were complete, 65 (95.6%) cases were household contacts of adults. Cough (32.4%) and fever (27.0%) were the predominant symptoms of 44 (59.5%) symptomatic patients at illness onset. Abnormalities in leukocyte count were found in 23 (31.1%) children and 10 (13.5%) children presented with abnormal lymphocyte count. Of the 34 (46.0%) patients who had nucleic acid testing results for common respiratory pathogens, 19 (51.4%) showed co-infection with other pathogens other than SARS-CoV-2. Ten (13.5%) children had RT-PCR analysis for fecal specimens and 8 of them showed prolonged existence of SARS-CoV-2 RNA.	Pediatric COVID-19 patients presented with symptoms distinct from adults and were susceptible to co-infection with other respiratory pathogens. Persistent fecal shedding of viral RNA was found after respiratory specimens turned negative.	Wu Q, Xing Y, Shi L, et al. Co-infection and Other Clinical Characteristics of COVID-19 in Children [published online, 2020 May 6]. Pediatrics. 2020. doi:10.1542/peds.2020-0961
Children, pediatric emergency department attendance, UK	6-May-20	Where Have All the Children Gone? Decreases in Paediatric Emergency Department Attendances at the Start of the COVID-19 Pandemic of 2020	Archives of Disease in Childhood	Letter	Although children and young people (CYP, defined here as <16 years) can become infected with SARS-CoV-2, it appears that they are mainly asymptomatic or experience mild symptoms, resulting in a much smaller number of COVID-19 related emergency department (ED) attendances. This letter reports findings from a comparison of ED attendance data for CYP since the first reported cases of COVID-19 with the same weeks in 2019. There was a 5.6% decrease between February 2019 and February 2020, and a 30.4% decrease between March 2019 and March 2020 at a large district general hospital in Greater Manchester, UK. There was a 0.6% decrease between February 2019 and February 2020, and a 33.8% decrease between March 2019 and March 2020 at a regional children's hospital in the same area. The reasons why children were not attending likely reflect changing behaviors and concerns of their caregivers during the pandemic.	Based on Emergency Department (ED) attendance data from two hospitals in the UK, findings show that children are presenting to the ED at a lower rate during the pandemic (February and March 2020) compared to the same months in 2019.	Isba R, Edge R, Jenner R, Broughton E, Francis N, Butler J. Where have all the children gone? Decreases in paediatric emergency department attendances at the start of the COVID-19 pandemic of 2020 [published online, 2020 May 6]. Arch Dis Child. 2020. doi:10.1136/archdischild-2020-319385
Children, immune preparedness, innate immunity, natural antibodies, memory B cells	6-May-20	The immune system of children: the key to understanding SARS-CoV-2 susceptibility?	The Lancet Child & Adolescent Health	Comment	To date, there is no evidence to support a lower degree of expression or function of the SARS-CoV-2 receptor (namely ACE2) in children, who experience milder COVID-19 disease than adults. During the first years of life, frequent infections build the pool of memory T and B cells that will prevent reinfection by commonly encountered pathogens. Pediatric immune preparedness, fit to react to novel pathogens including SARS-CoV-2, might be based on the abundance of natural antibodies in children. These antibodies (mostly IgM) are generated independently of previous antigen encounters, have broad reactivity, and contain infection during the 2 weeks necessary for production of high-affinity antibodies and memory B cells. Preliminary results from a prospective study designed to test these hypotheses suggest an early polyclonal B-cell response with production of substantial numbers of plasmablasts (mostly IgM) in children. This response is not observed in adults with severe disease.	The immune preparedness of children, who are better equipped to respond to frequent, novel infection through innate immunity (e.g. natural IgM antibodies), may explain differences in COVID-19 susceptibility and disease course between children and adults.	Carsetti R, Quintarelli C, Quinti L, Mortari EP, Zumla A, Ippolito G et al. The immune system of children: the key to understanding SARS-CoV-2 susceptibility? [published online 2020 May 6]. Lancet Child & Adol Health. doi:10.1016/S2352-4642(20)30135-8

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Neonatal nutrition, breastfeeding, human milk banking	6-May-20	Maintaining safety and service provision in human milk banking: a call to action in response to the COVID-19 pandemic	The Lancet Child & Adolescent Health	Comment	A Virtual Communication Network of milk bank leaders formed on March 17, 2020, and now has more than 80 members from 34 countries. Data collated from regional and country leads show that more than 800,000 infants are estimated to receive donor milk worldwide annually. The group actively discusses COVID-19-specific challenges and has developed mitigation strategies to ensure donor milk safety and service continuation, which will shortly be made available as a publication. Unlike HIV, where transmission via breastfeeding was a source of infection, there is no evidence to support SARS-CoV-2 transmission from human milk, and the virus is inactivated by heat treatment. In line with WHO recommendations, the promotion of breastfeeding and a human milk diet, using donor milk bank resources, must be prioritized as an essential component of early newborn care.	A Virtual Communication Network of international milk bank leaders considers issues related to the provision of donor milk services during the COVID-19 pandemic and provides guidance around breastfeeding.	Shenker N, on behalf of the Virtual Collaborative Network of Human Milk Banks and Associations. Maintaining safety and service provision in human milk banking: a call to action in response to the COVID-19 pandemic [published online 2020 May 6]. Lancet Child & Adol Health. doi:10.1016/S2352-4642(20)30134-6
Fetal surgery, perinatal management, vertical transmission	6-May-20	Fetal Diagnosis and Therapy During the COVID-19 Pandemic: Guidance on Behalf of the International Fetal Medicine and Surgery Society	Fetal Diagnosis and Therapy	Original Paper	This review discusses potential modifications to obstetric management and fetal procedures in both SARS-CoV-2 negative and positive patients with fetal anomalies or disorders. Most fetal therapies are time sensitive and cannot be delayed. If personnel and resources are available, procedures of proven benefit should continue to be offered, acknowledging any fetal and maternal risks, including those to health care workers. There is, to date, minimal, unconfirmed evidence of spontaneous vertical transmission, though it may theoretically be increased with some procedures. It is important to know a mother's preoperative SARS-CoV-2 status to avoid or defer certain procedures while she is contagious. Some fetal conditions may alternatively be managed neonatally. Counseling regarding fetal interventions that carry the possibility of additional intra- or postoperative morbidity must be provided in the context of local resource availability.	Fetal interventions of proven benefit should continue to be offered, taking into account the added maternal and fetal risks presented by positive SARS-CoV-2 status.	Deprest J, Choolani M, Chervenak F, et al. Fetal Diagnosis and Therapy during the COVID-19 Pandemic: Guidance on Behalf of the International Fetal Medicine and Surgery Society [published online, 2020 May 6]. Fetal Diagn Ther. 2020;1-10. doi:10.1159/000508254
Children, clinical characteristics, epidemiology, chest CT lesions, discharge criteria, China	6-May-20	A Single-Center, Retrospective Study of COVID-19 Features in Children: A Descriptive Investigation	BMC Medicine	Research Article	Among 50 children with positive SARS-CoV-2 RT-PCR tests, admitted to Wuhan Children's Hospital, five had negative results initially but showed positive results in subsequent tests. Eight (16%) patients had lymphopenia, seven (14%) had thrombocytopenia, four (8%) had lymphocytosis, two (4%) had thrombocytosis, ten (20%) had elevated C-reactive protein, four (8%) had hemoglobin above, and six (12%) had below standard reference values. Seven (14%) of the 50 had no radiologic evidence of disease on chest CT. For the 43 patients who had abnormal CT findings, in addition to previously reported patterns of ground-glass opacity (67%), local patchy shadowing (37%), local bilateral patchy shadowing (21%), and lesion location of lower lobes (65%), other CT features showed an overwhelming number of pediatric patients with lesions in the subpleural area (95%), and 22 of the 28 lower lobe lesions were in the posterior segment (78%). Lesions were not completely absorbed in 67% of the 15 patients who received a chest CT at discharge, and 26% of these patients had CT lesions that were either unchanged or worse. All 15 patients had normal body temperatures, no clinical symptoms, and consecutive negative PCR tests at discharge.	This retrospective study concludes that CT is a powerful tool to detect and characterize COVID-19 pneumonia but has little utility in evaluating clinical recovery for children, prior to discharge.	Ma H, Hu J, Tian J, et al. A single-center, retrospective study of COVID-19 features in children: a descriptive investigation. BMC Med. 2020;18(1):123. Published 2020 May 6. doi:10.1186/s12916-020-01596-9

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Children, viral shedding, Kaplan-Meier analysis, China	5-May-20	Symptomatic Infection Is Associated With Prolonged Duration of Viral Shedding in Mild Coronavirus Disease 2019: A Retrospective Study of 110 Children in Wuhan	The Pediatric Infectious Diseases Journal	Original Studies (peer-reviewed)	Data from 110 children (median age: 6 years) with COVID-19 at Wuhan Children's Hospital, from January 30 to March 10, 2020, were analyzed retrospectively. The median period of viral SARS-CoV-2 RNA shedding, assessed via RT-PCR on throat or nasopharyngeal swab, was 15 days (IRQ: 11-20 days) as measured from illness onset to discharge. This period was shorter in asymptomatic patients (26.4%) compared with symptomatic patients (73.6%) (11 vs. 17 days). Multivariable regression analysis showed increased odds of symptomatic infection was associated with age <6 years (OR 8.9, 95% CI 2.6-31.4; p=0.001), hypersensitive C-reactive protein >3.0 mg/L (OR 4.89; 95% CI 1.1-21.8; p=0.037) and presenting pneumonia in chest radiologic findings (OR 8.5; 95% CI 2.7-26.6; p<0.001). Kaplan-Meier analysis revealed that symptomatic infection (p<0.001), fever (p=0.006), pneumonia (p=0.003) and lymphocyte counts <2.0×10^9/L (p=0.008) were associated with prolonged duration of viral RNA shedding in children with COVID-19.	In this study, prolonged duration of viral RNA shedding in children with COVID-19 was associated with symptomatic infection, fever, pneumonia and lymphocyte count of 2.0×10^9/L.	Lu Y, Li Y, Deng W, et al. Symptomatic Infection is Associated with Prolonged Duration of Viral Shedding in Mild Coronavirus Disease 2019: A Retrospective Study of 110 Children in Wuhan [published online, 2020 May 5]. Pediatr Infect Dis J. 2020. doi:10.1097/INF.0000000000002729
Children, super spreaders, transmission, community testing, family clusters, school closures	5-May-20	Children Are Not COVID-19 Super Spreaders: Time to Go Back to School	Archives of Disease in Childhood	Viewpoint	Early contact tracing data from Shenzhen, China appeared to confirm a role for children in COVID-19 transmission; however, in some regions where widespread community testing has been implemented (e.g. South Korea, Iceland), children are significantly underrepresented in the number of positive cases among the general populations. Thus, evidence is emerging that children could be less likely to become infected than adults. Alternatively, children could have a more transient upper respiratory infection with minimal viral shedding; data on family clusters have shown that children are not likely to be the index case in households. Currently, children do not appear to be super spreaders but until there is high-quality sero-surveillance data, these questions cannot be answered with certainty.	Based on studies of widespread community testing and family clusters, the authors argue that children do not appear to play a significant role in COVID-19 transmission.	Munro APS, Faust SN. Children are not COVID-19 super spreaders: time to go back to school [published online, 2020 May 5]. Arch Dis Child. 2020. doi:10.1136/archdischild-2020-319474
Children, renin-angiotensin-aldosterone system, cardiovascular disease, chronic kidney disease	5-May-20	ACE2, COVID-19, and ACE Inhibitor and ARB Use During the Pandemic: The Pediatric Perspective	Hypertension	Original Article	This review highlights the relationship of COVID-19 and the use of ACE inhibitors and angiotensin II receptor blockers (ARB) to treat chronic kidney and cardiovascular disease, from a pediatric perspective. A summary of the renin-angiotensin-aldosterone system and review of the literature pertaining to the ACE2/Angiotensin-(1-7) pathway in children are provided. Currently, there is no evidence that children who are taking ACE inhibitors or ARBs are at increased risk of SARS-CoV-2 infection or severe disease. Given the proven benefits of these medications, especially for youth with chronic conditions, many scientific societies affirm the continued use of these agents.	ACE inhibitors and angiotensin II receptor blockers have not been conclusively shown to increase risk of SARS-CoV-2 infection and should continue to be used in children with chronic conditions.	South AM, Brady TM, Flynn JT. ACE2, COVID-19, and ACE Inhibitor and ARB Use during the Pandemic: The Pediatric Perspective [published online, 2020 May 5]. Hypertension. 2020. doi:10.1161/HYPERTENSIONAHA.120.15291
Pregnancy, questionnaire, systematic screening, Italy	5-May-20	Effectiveness of a COVID-19 Screening Questionnaire for Pregnant Women at Admission to an Obstetric Unit in Milan	International Journal of Gynaecology & Obstetrics	Brief Communication	Sutton et al. reported on universal testing with nasopharyngeal swabs to detect severe SARS-CoV-2 infection in 215 women admitted for delivery at the Presbyterian Allen Hospital in New York, USA. However, this approach is only feasible in major hospitals in high-resource countries with efficient lab facilities in-house. An alternative approach is considered in this report from a COVID-19 maternity hub in Milan, Italy. This facility opted for systematic screening for SARS-CoV-2 using a specific questionnaire, administered at obstetrics admission; suspected cases underwent nasopharyngeal swab testing and were managed as suspected COVID-19 cases until results were available. Of 139 women screened (between April 1-9, 2020) using this questionnaire, 6 (4.3%) were considered suspected cases while the remaining 133 (95.7%) were not. Nasopharyngeal swab results were positive in 2 suspected cases and 1 woman with an unremarkable screening	A COVID-19 maternity hub in Milan, Italy employed a questionnaire to systematically screen for suspected cases of SARS-CoV-2 among pregnant women at obstetrics admission. This is an inexpensive and possibly effective tool in settings with	Tassis B, Lunghi G, Frattaruolo MP, Ruggiero M, Somigliana E, Ferrazzi E. Effectiveness of a COVID-19 screening questionnaire for pregnant women at admission to an obstetric unit in Milan [published online, 2020 May 5]. Int J Gynaecol Obstet. 2020. doi:10.1002/ijgo.13191

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					response. This screening approach may be less efficient in areas where the absolute rate of undetected COVID-19 cases would be markedly higher.	relatively lower incidence.	
Pregnancy, breast milk samples, vaginal secretions, China	5-May-20	Coronavirus Disease 2019 Among Pregnant Chinese Women: Case Series Data on the Safety of Vaginal Birth and Breastfeeding [link was not working on May 8, 2020 when posted]	BJOG	Case Series	In this single center cohort study, 13 pregnant women with SARS-CoV-2 infection, diagnosed between January 31 and March 9, 2020 at Renmin Hospital, Wuhan, China, were included. Of the 13 women, 5 were in their first trimester, 3 in their second trimester, and 5 in their third trimester. Of the 5 women during their third trimester who gave birth, all delivered live newborns. Among these 5 deliveries, the primary adverse perinatal outcomes included premature delivery (n = 2) and neonatal pneumonia (n = 2). One of 9 maternal stool samples was positive for SARS-CoV-2 on RT-PCR; all 13 vaginal secretion samples in addition to 5 neonatal throat swabs and 4 neonatal anal swabs were negative. However, 1 of 3 samples of breast milk was positive by viral nucleic acid testing.	Negative SARS-CoV-2 test results for vaginal secretion specimens, from pregnant women with COVID-19, suggest that vaginal delivery may be a safe option. However, a positive breast milk sample in this study warrants further study of the risk for viral contamination.	Wu Y, Liu C, Dong L, et al. Coronavirus disease 2019 among pregnant Chinese women: Case series data on the safety of vaginal birth and breastfeeding [published online, 2020 May 5]. BJOG. 2020. doi:10.1111/1471-0528.16276
Pregnancy, neonatal death, maternal hypoxia, ARDS, inflammatory storm, fetal myocardium, China	5-May-20	Critically Ill Pregnant Patient With COVID-19 and Neonatal Death Within Two Hours of Birth	International Journal of Gynaecology & Obstetrics	Brief Communication	Most pregnant women with COVID-19 appear to experience a milder clinical course. In contrast, the present report describes a critical case of COVID-19 in a 31-year-old pregnant woman, admitted to Xiaolan People's Hospital of Zhongshan at 35+2 weeks of pregnancy with no known comorbidity or history of chronic illness. Onset of symptoms in the patient began with a sore throat and dry cough for 4 days, followed by fever and dyspnea for half a day. Within 12 hours of hospitalization, the patient experienced rapid aggravation of disease, progressing to acute respiratory distress syndrome and septic shock. An emergency cesarean delivery was performed at the bedside, but the neonate died within two hours of birth. Maternal hypoxia may have caused sudden changes in the fetal intrauterine environment, while the inflammatory storm caused by maternal infection may have triggered a systemic immune response that attacked fetal organs. Biochemical examination of umbilical cord blood at birth revealed a marked increase in myocardial enzymes, suggesting severe damage to the fetal myocardium.	This case report describes neonatal death following emergency cesarean delivery in a pregnant woman with severe COVID-19, which progressed to ARDS and septic shock. Causes of death may relate to conditions of maternal hypoxia and inflammatory storm, leading to damage of fetal organs.	Li J, Wang Y, Zeng Y, et al. Critically ill pregnant patient with COVID-19 and neonatal death within two hours of birth [published online, 2020 May 5]. Int J Gynaecol Obstet. 2020. doi:10.1002/ijgo.13189
Pregnancy, breastfeeding, breast milk samples, whole vs. skim milk, Germany	4-May-20	Detection of SARS-CoV-2 in Human Breast Milk	medRxiv	Preprint (not peer reviewed)	Recent reviews show no evidence for SARS-CoV-2 in human breast milk, however sample sizes are small, and specimens have only been collected once from each mother. In this report, authors analyzed whole and skim milk (after removal of the lipid fraction) samples from 2 nursing mothers who were diagnosed with COVID-19 days after delivery of and room sharing, with each other and with their newborns. Newborn 1 tested positive for SARS-CoV-2 infection on day 8. Four milk samples from Mother 1, between day 12 and 14, all tested negative. In contrast, SARS-CoV-2 RNA was detected in milk samples from Mother 2 on days 10, 12, 13, and 14. A later sample from Mother 2 on day 25 was negative. Detection of viral RNA in the milk of Mother 2 coincided with mild COVID-19 symptoms and a SARS-CoV-2 diagnosis of Newborn 2 on day 11. Mother 2 wore a surgical mask beginning at symptom onset and followed safety precautions during handling and feeding of the neonate. Whether Newborn 2 was infected by breastfeeding or other modes of transmission remains unclear.	In this case study of two nursing mothers with COVID-19, both newborns tested positive for SARS-CoV-2 infection within 1-2 weeks of birth. SARS-CoV-2 RNA was only detected in one mother's consecutive breast milk samples.	Groß R, Conzelmann C, Müller J, Stenger S, Steinhart K, Kirchhoff F, Münch J. Detection of SARS-CoV-2 in Human Breast Milk [published online 2020 May 4]. medRxiv. doi:10.1101/2020.04.28.20075523

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Female reproductive system, pregnancy, renin-angiotensin system	4-May-20	Potential Influence of COVID-19/ACE2 on the Female Reproductive System	Molecular Human Reproduction	Review	The SARS-CoV-2 virus invades the target cell by binding to angiotensin-converting enzyme (ACE) 2 and modulates the expression of ACE2 in host cells. ACE2, a pivotal component of the renin-angiotensin system, exerts its physiological functions by modulating the levels of angiotensin II (Ang II) and Ang-(1-7). In this article, authors review existing literature on the distribution and function of ACE2 in the female reproductive system, hoping to clarify the potential harm of SARS-CoV-2 to female fertility. Available evidence suggests that ACE2 is widely expressed in the ovary, uterus, vagina and placenta. Therefore, the possibility of mother-to-child and sexual transmission exists. Ang II, ACE2 and Ang-(1-7) regulate follicle development and ovulation, modulate luteal angiogenesis and degeneration, and also influence the regular changes in endometrial tissue and embryo development. Taking these functions into account, by modulating the expression of ACE2 receptors, SARS-CoV-2 may disturb female reproductive functions.	Wide expression of the ACE-2 receptor in the ovary, uterus, vagina, and placenta suggest the possibility of mother-to-child and sexual transmission of SARS-CoV-2. Binding of SARS-CoV-2 virus to the ACE-2 receptor may disrupt female reproductive functions regulated by the renin-angiotensin system.	Jing Y, Run-Qian L, Hao-Ran W, et al. Potential influence of COVID-19/ACE2 on the female reproductive system [published online, 2020 May 4]. Mol Hum Reprod. 2020. doi:10.1093/molehr/gaaa030
Neonatal infection, hypoxemia, perioral cyanosis, poor sucking, maternal expressed milk, Italy	4-May-20	Early Neonatal SARS-CoV-2 Infection Manifesting With Hypoxemia Requiring Respiratory Support	Pediatrics	Case Report	On the second day after uncomplicated vaginal delivery of a male neonate, the mother developed fever without respiratory symptoms, and her nasopharyngeal swab was positive for SARS-CoV-2. A nasopharyngeal swab obtained on the same day was also positive for the neonate, who was isolated from his mother. After 48 hours of isolation, on day 5 of life, the neonate developed perioral cyanosis and poor sucking without signs of respiratory distress. Arterial blood gas analysis demonstrated moderate hypoxia. The neonate was admitted to the NICU and placed on 30% inspired oxygen via high-flow nasal cannula, and his condition improved. He was fed maternal expressed milk by nasogastric tube for 48 hours, after which he was able to be fully fed orally. On days 15 and 21 of life, his qualitative PCR for COVID-19 remained positive.	A case of COVID-19 in a 3-day-old neonate manifested with silent hypoxemia. The neonate was fed expressed maternal milk via nasogastric tube until he was able to be fed orally. The nasopharyngeal swab remained positive for more than two weeks, unlike previous reports showing rapid virologic clearance.	Sinelli MT, Paterlini G, Citterio M, Di Marco A, Fedeli T, Ventura ML. Early Neonatal SARS-CoV-2 Infection Manifesting With Hypoxemia Requiring Respiratory Support [published online, 2020 May 4]. Pediatrics. 2020. doi:10.1542/peds.2020-1121
Obesity, young age, ICU admission, USA	4-May-20	Obesity could shift severe COVID-19 disease to younger ages	Lancet	Correspondence	Obesity is an underappreciated risk factor for COVID-19 and is particularly relevant in the USA, where the prevalence of obesity is around 40%, versus a prevalence of 6.2% in China, 20% in Italy, and 24% in Spain. In a dataset of 265 patients (58% male) with COVID-19 admitted to the ICU at various university hospitals at 6 sites across the country, a significant inverse correlation between age and BMI was observed. In other words, younger individuals admitted to the ICU were more likely to be obese. The median BMI was 29.3kg/m^2, with 25% exceeding a BMI of 34.7kg/m^2. Obesity can restrict ventilation by impeding diaphragm excursion, impairs immune responses to viral infection, is pro-inflammatory, and induces diabetes and oxidant stress to adversely affect cardiovascular function. The authors conclude that in populations with a high prevalence of obesity, COVID-19 will affect younger populations more than previously reported.	Younger patients with COVID-19, admitted to ICUs across various university hospitals in the USA, were more likely to be obese than older patients. Obesity warrants further attention as a pro-inflammatory risk factor for COVID-19, especially in younger individuals.	Kass DA, Duggal P, Cingolani O. Obesity could shift severe COVID-19 disease to younger ages [published online 2020 May 4]. Lancet. doi:10.1016/S0140-6736(20)31024-2

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Pregnancy, antenatal, intrapartum, postpartum care, UK	4-May-20	Covid-19 and pregnancy	BMJ	Practice	The UK Royal College of Obstetricians and Gynaecologists (RCOG) recently published a set of guidelines related to COVID-19 in pregnancy, on April 17, 2020. This summary reviews the development of the guideline and key recommendations. The guideline itself summarizes the available evidence on the effects of COVID-19 on pregnant women and fetuses. It provides recommendations on the care of pregnant women with suspected or confirmed COVID-19 in the antepartum, intrapartum, and postnatal stages.	This brief summary reviews guidelines recently published by the UK Royal College of Obstetricians and Gynaecologists on caring for pregnant women with COVID-19.	Covid-19 and pregnancy. BMJ. 2020;369:m1672. Published 2020 May 4. doi:10.1136/bmj.m1672
Pediatric, neonatal resuscitation, basic life support	4-May-20	Interim Guidance for Basic and Advanced Life Support in Children and Neonates With Suspected or Confirmed COVID-19	Pediatrics	Scientific Statement	The American Heart Association, in collaboration with other organizations, has compiled interim guidance to help rescuers treat victims of cardiac arrest with suspected or confirmed COVID-19. The challenge is to ensure that patients with or without COVID-19 who experience cardiac arrest have the best possible chance of survival without compromising the safety of rescuers. The present statement applies specifically to pediatric and neonatal resuscitations, with situation- and setting-specific considerations.	These guidelines offer considerations for pediatric and resuscitation in suspected or confirmed COVID-19 patients.	Topjian A, Aziz K, Kamath-Rayne BD, et al. Interim Guidance for Basic and Advanced Life Support in Children and Neonates With Suspected or Confirmed COVID-19 [published online, 2020 May 4]. Pediatrics. 2020. doi:10.1542/peds.2020-1405
Pediatrics, ethical issues, ventilator allocation	4-May-20	Pediatric Ethical Issues During the COVID-19 Pandemic Are Not Just About Ventilator Triage	Acta Paediatrica	View	Administrators and providers worry about an overwhelming shortage in critical life-saving ventilators for adults during the COVID-19 pandemic. However, algorithms for ventilator allocation do not easily translate to pediatric medicine nor does ventilator allocation represent an urgent crisis for pediatric medicine. In this report, authors highlight underrecognized pediatric ethical concerns: other triage decisions for scarce resources (e.g. redeployment of skilled pediatric personnel to adult medicine), the negative psychosocial effects of the pandemic on children, including food insecurity, the moral and emotional toll on clinicians, and system inadequacies.	Attention has focused on triage decisions surrounding ventilator shortages for critically ill adult patients. In contrast, this report highlights ethical concerns specific to children during the COVID-19 pandemic.	Haward MF, Moore GP, Lantos J, Janvier A. Pediatric ethical issues during the COVID-19 pandemic are not just about ventilator triage [published online, 2020 May 4]. Acta Paediatr. 2020. doi:10.1111/apa.15334
Pediatric physicians, survey, Australia, New Zealand	4-May-20	COVID-19 and Paediatric Health Services: A Survey of Paediatric Physicians in Australia and New Zealand	Journal of Paediatrics and Child Health	Original Article	The aim of this study was to assess attitudes, readiness and confidence in the early stages of the COVID-19 pandemic through an online survey of pediatric physicians and sub-specialists across Australia and New Zealand, between March 17 and 24, 2020. Of 542 respondents (an estimated 11% of the pediatric physician workforce in Australia and New Zealand), a minority (36.6%) agreed that their national response had been well coordinated; the majority (92.7%) agreed that senior-level hospital administrators were taking the situation seriously. Most reported a good understanding of the natural history of COVID-19 in children, and knowledge of where to find local information. A large proportion of physicians (86.1%) were worried about becoming infected through their work; few (5.8%) reported that they would not come to work to avoid infection. Closure of school and childcares would reduce the ability to continue work at current capacity for 23.6% of respondents.	In this survey of pediatric physicians in Australia and New Zealand, most felt informed and were willing to work despite concerns about exposure at work.	Foley DA, Kirk M, Jepp C, et al. COVID-19 and paediatric health services: A survey of paediatric physicians in Australia and New Zealand [published online, 2020 May 4]. J Paediatr Child Health. 2020. doi:10.1111/jpc.14903

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Vertical transmission, congenital vs. perinatal transmission, placenta, breast milk samples, maternal antibodies	3-May-20	Evidence for and Against Vertical Transmission for SARS-CoV-2 (COVID-19)	American Journal of Obstetrics and Gynecology	Review (journal pre-proof)	Twelve articles, published between February 10 and April 4, 2020, reporting on 68 cases of maternal infection in the third trimester of pregnancy and deliveries of 71 neonates were identified. In these studies, SARS-CoV-2 viral nucleic acid was recovered by RT-PCR from nasal/throat swabs, sputum and feces of symptomatic patients, including neonates, but not from maternal vaginal swabs, amniotic fluid, placenta, cord blood, neonatal blood or breast milk samples. Understanding perinatal exposure, influenced by mode of delivery (e.g. exposure to maternal feces during vaginal delivery) and time interval from delivery to the diagnosis of neonatal infection (e.g. exposure to maternal respiratory secretions after birth), is crucial in differentiating congenital from perinatal infection. The low presence of viremia (observed in only 1% of symptomatic adults) decreases the likelihood of placental infection. In addition, the interpretation of IgM and IgG antibodies levels in cord and neonatal blood, in the context of serological evidence for vertical transmission, is also discussed in this review.	This review discusses published literature to date that support or refute the possibility of vertical transmission, both congenital and perinatal, of SARS-CoV-2 infection.	Lamouroux A, Attie-Bitach T, Martinovic J, Leruez-Ville M, Ville Y. Evidence for and against vertical transmission for SARS-CoV-2 (COVID-19) [published online, 2020 May 3]. Am J Obstet Gynecol. 2020. doi:10.1016/j.ajog.2020.04.039
Children, athletes, alveolar ventilation, immunological model	2-May-20	The First, Holistic Immunological Model of COVID-19: Implications for Prevention, Diagnosis, and Public Health Measures	Pediatric Allergy and Immunology	Review Article	In this proposed, immunological model of COVID-19, authors argue that the confrontation between SARS-CoV-2 and innate immunity is crucial in determining outcomes. Natural antibodies and other components of innate immunity are the first line of defense and must block the virus from spreading past the upper airways in the first 10-12 days from infection (5-7 days from disease onset), i.e. in the time required to prepare an efficient adaptive primary antibody response. Mannose Binding Lectin (MBL) plays a pivotal role in innate immunity as a pattern-recognition receptor and may inhibit interaction between SARS-CoV-2 and the ACE2 binding site. Serum MBL levels are distinctly higher in children (3-19 years) than adults and decline with age. In addition, natural IgM antibody levels have been shown to reach adult values in children 5 to 10 years old and decline with age, especially after the early 40s.	Authors describe key features of innate immunity (e.g. Mannose Binding Lectin, natural IgM antibodies), which form the first line of defense against viral infection and may serve a protective role in children.	Matricardi PM, Dal Negro RW, Nisini R. The first, holistic immunological model of COVID-19: implications for prevention, diagnosis, and public health measures [published online, 2020 May 2]. Pediatr Allergy Immunol. 2020. doi:10.1111/pai.13271
Neonates, postnatal infection, NICU, respiratory support modalities	2-May-20	COVID-19 and Neonatal Respiratory Care: Current Evidence and Practical Approach	American Journal of Perinatology	Review Article	Authors comprehensively review current evidence regarding COVID-19 perinatal transmission, respiratory outcomes of neonates born to mothers with COVID-19 and infants with documented SARS-CoV-2 infection, and the evidence for using different respiratory support modalities and aerosol-generating procedures in this specific population. The results demonstrated that to date, neonatal COVID-19 infection is uncommon, generally acquired postnatally, and associated with favorable respiratory outcomes. The reason why infants display a milder spectrum of disease remains unclear. Nonetheless, the risk of severe or critical illness in young patients exists. Currently, the recommended respiratory approach for infants with suspected or confirmed infection is not evidence based but should include all routinely used types of support, with the addition of viral filters, proper personal protective equipment, and separation of infants with suspected or confirmed COVID-19 from their mothers and placement in isolation rooms, ideally with negative pressure.	This report outlines current evidence on neonatal COVID-19, including recommended approaches for respiratory support for neonates with suspected or confirmed infection.	Shalish W, Lakshminrusimha S, Manzoni P, Keszler M, Sant'Anna GM. COVID-19 and Neonatal Respiratory Care: Current Evidence and Practical Approach [published online, 2020 May 2]. Am J Perinatol. 2020. doi:10.1055/s-0040-1710522

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Neonatal, late onset infection, pregnancy, breastfeeding, maternal antibodies, Italy	2-May-20	Neonatal Late Onset Infection With Severe Acute Respiratory Syndrome Coronavirus 2	American Journal of Perinatology	Short Communication	This observational study aimed to evaluate post-discharge SARS-CoV-2 status of newborns (born to pregnant women with COVID-19) who were negative for SARS-CoV-2 infection at birth. Of seven pregnant women with documented SARS-CoV-2 infection, one woman had a spontaneous abortion at 8 weeks of gestational age, four women recovered and are still in follow-up, and two women delivered, at term and pre-term respectively. At birth and 3 days of life, both neonates were negative for SARS-CoV-2 infection. At the 15-day follow-up, one newborn tested positive on nasopharyngeal swab, although he was asymptomatic. This newborn had been breastfed by his mother, who wore a mask while recovering from COVID-19. Since breast milk samples tested negative, respiratory secretions were the likely source of late-onset neonatal infection. Authors speculate that SARS-CoV-2 IgG antibodies (documented at birth in neonatal blood) protected the newborn from symptomatic infection, preserving the benefits of breastfeeding. At follow-up, the second newborn tested negative for SARS-CoV-2 on nasopharyngeal and rectal swabs and had been fed expressed milk by his father. These findings highlight the importance of long-term follow-up of newborns to mothers with COVID-19 in pregnancy.	This case report describes one case of late-onset, asymptomatic neonatal infection, following delivery by a COVID-19 positive mother. It is possible that maternal SARS-CoV-2 IgG antibodies, documented in neonatal blood at birth, protected the newborn from a symptomatic course of infection.	Buonsenso D, Costa S, Sanguinetti M, et al. Neonatal Late Onset Infection with Severe Acute Respiratory Syndrome Coronavirus 2 [published online, 2020 May 2]. Am J Perinatol. 2020. doi:10.1055/s-0040-1710541
Infant, malnutrition, critical disease, T cell counts, nasopharyngeal viral shedding	1-May-20	A Typical Case of Critically Ill Infant of Coronavirus Disease 2019 With Persistent Reduction of T Lymphocytes	The Pediatric Infectious Disease Journal	Original Studies	This case presents a critically ill, 8-month-old male infant with COVID-19 and a history of poor growth and malnutrition, in addition to past neonatal cardiac surgery and two episodes of pneumonia in early infancy. Once admitted to the hospital, he developed life-threatening clinical features of COVID-19, including high fever, septic shock, recurrent apnea, petechiae and acute kidney injury and persistent reduction of CD3+, CD4+ and CD8+ T cells. The duration of nasopharyngeal virus shedding lasted 49 days despite administration of lopinavir/ritonavir for 8 days. CD3+, CD4+ and CD8+ T cell counts were partially recovered 68 days post-disease onset. Nucleic acid tests and serum antibody levels for SARS-CoV-2 in the infant's mother, who kept intimate contact with the infant, were negative despite inconsistent personal protection.	A persistent reduction of CD4+ and CD8+ T cells as well as prolonged nasopharyngeal viral SARS-CoV-2 shedding were key clinical features of a critically ill infant with COVID-19 in this case study.	Qiu L, Jiao R, Zhang A, et al. A Typical Case of Critically Ill Infant of Coronavirus Disease 2019 With Persistent Reduction of T Lymphocytes [published online, 2020 May 1]. Pediatr Infect Dis J. 2020. doi:10.1097/INF.0000000000002720
Pregnancy, maternal morbidity, critical care, mechanical ventilation, USA	1-May-20	Care of Critically Ill Pregnant Patients With COVID-19: A Case Series	American Journal of Obstetrics and Gynecology	Research Letter	This retrospective, multi-center case series describes 5 symptomatic pregnant women with positive SARS-CoV-2 testing and requiring critical care. Women were in their late second (n=3) or third (n=2) trimester. At the end of the study period, 1 woman is still critically ill and hasn't delivered, 3 had uncomplicated cesarean delivery, and 1 was discharged and is receiving close outpatient follow up. Intubation timing ranged from 7-14 days from symptom onset in these cases. Various oxygen delivery methods, including high flow nasal cannula, noninvasive positive pressure ventilation, and endotracheal intubation, can all be utilized safely in pregnancy. For intubated patients with COVID-19, timing of delivery must balance maternal and neonatal risk and benefit, with delivery considered a potential tool to improve ventilation due to physiologic changes associated with pregnancy. There is limited evidence to guide specific management around fetal monitoring, administration of antenatal corticosteroids, and delivery in patients with COVID-19.	This case series presents strategies for management of critically ill pregnant women with COVID-19, using various oxygen delivery methods.	Hirshberg A, Kern-Goldberger AR, Levine LD, et al. Care of critically ill pregnant patients with COVID-19: a case series [published online, 2020 May 1]. Am J Obstet Gynecol. 2020. doi:10.1016/j.ajog.2020.04.029

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Immuno-compromised children, immuno-modulatory therapy, UK NICE	1-May-20	Covid-19 Is No Worse in Immunocompromised Children, Says NICE	BMJ	News	The UK National Institute for Health and Care Excellence (NICE) recently issued a guideline, stating that "COVID-19 usually causes a mild, self-limiting illness in children and young people, even in those who are immunocompromised." NICE advises continuation of usual treatment with reduced face-to-face contact where safely possible, as well as discussion between patients and providers regarding the risks and benefits of initiating immuno-modulatory therapies. Patients taking drugs that affect the immune response may have atypical presentations of COVID-19; for example, patients taking prednisolone may not develop fever. In addition, the guidelines warn against the use of empirical antibiotics, unless there is clinical suspicion of bacterial infection or co-infection.	This news report describes recent rapid guidelines from the UK on caring for immuno-compromised children during the COVID-19 pandemic. Existing data suggests that immuno-compromised children are not at higher risk for severe disease.	Wise J. Covid-19 is no worse in immunocompromised children, says NICE. BMJ. 2020;369:m1802. Published 2020 May 1. doi:10.1136/bmj.m1802
Child, sickle cell disease, acute chest syndrome, anti-human IL-6 receptor monoclonal antibody	1-May-20	Dramatic Improvement After Tocilizumab of a Severe COVID-19 in a Child With Sickle Cell Disease and Acute Chest Syndrome	American Journal of Hematology	Correspondence	Tocilizumab (TCZ) was administered to a 16-year-old girl with homozygous sickle cell disease (SCD) who developed severe COVID-19 associated with acute chest syndrome and pulmonary embolism. On admission, levels of C-reactive protein, lactate dehydrogenase, and D-dimer were increased. The patient required non-invasive ventilation, red blood cell exchange transfusion followed by simple transfusion, and anticoagulation. Plasma levels of pro-inflammatory IL-6 were extremely high and increased further, after TCZ injection, before decreasing. The patient's respiratory status, as well as CT pulmonary angiography imaging, improved dramatically following TCZ treatment.	Tocilizumab, an anti-human IL-6 receptor monoclonal antibody, appears to be safe and effective treatment for severe COVID-19 and acute chest syndrome in children with sickle cell disease.	Odièvre MH, de Marcellus C, Ducou Le Pointe H, et al. Dramatic improvement after Tocilizumab of a severe COVID-19 in a child with sickle cell disease and acute chest syndrome [published online, 2020 May 1]. Am J Hematol. 2020. doi:10.1002/ajh.25855
Neonatal management, infection control, telehealth, routine follow-up, China	1-May-20	Neonatal Management During the Coronavirus Disease (COVID-19) Outbreak: The Chinese Experience	NeoReviews	Article	This article reviews published information from Chinese pediatric and neonatal societies regarding their approach to neonatal management during the 2019-2020 COVID-19 outbreak in China. These approaches include consensus guidelines focused on perinatal infection prevention and high-risk neonatal transport, as well as strategies for transitioning routine neonatal outpatient follow-up to an online program.	This review summarizes infection control measures and telehealth strategies for routine, neonatal follow-up, published by Chinese pediatric and neonatal societies.	Ma X, Zhu J, Du L. Neonatal Management During the Coronavirus Disease (COVID-19) Outbreak: The Chinese Experience. Neoreviews. 2020;21(5):e293-e297. doi:10.1542/neo.21-5-e293
Pediatric pulmonology, pediatric care, podcast	1-May-20	Brief Report: International Perspectives on the Pediatric COVID-19 Experience	Pediatric Pulmonology	Commentary	On March 31, 2020, the International Committee of the American Thoracic Society Pediatrics Assembly recorded an online podcast, during which pediatric pulmonologists worldwide shared their experience on COVID-19 in children. The aim was to share personal experience in organizing pediatric care in different health care settings globally, protecting health care workers, and isolation practices. This manuscript summarizes the common themes of the podcast which centered around three main topics: more benign clinical disease and progression in pediatric cases compared to adults, a strong need for strategies to protect health care workers, and social or economic disparities as a barrier to successful pandemic control.	International pediatric pulmonologists discuss clinical characteristics of COVID-19 in children, strategies to protect health care workers, and the role of socioeconomic disparities in the pandemic.	Yilmaz O, Gochicoa-Rangel L, Blau H, et al. Brief report: International perspectives on the pediatric COVID-19 experience [published online, 2020 May 1]. Pediatr Pulmonol. 2020. doi:10.1002/ppul.24800
Children, age-related susceptibility, thymus, adaptive immune system,	1-May-20	Why the SARS-Cov-2 Has Prolonged Spreading Time in Children?	Pediatric Pulmonology	Letter to the Editor	Aging presents structural and functional loss, affecting the immune system. Thymus hypoplasia and the gradual decrease in both function and number of T cell/T_{reg} cells in the elderly increase susceptibility to viral infections. In contrast, in children, the thymus is active and associated with an adequate adaptive immune response, shaped dynamically by vaccines and common viral infections in childhood. This controlled and organized immune response protects children from severe tissue damage but also makes viral elimination	This letter argues that a functional thymus and a controlled, adaptive immune response prevents children from COVID-19 related tissue damage but contributes	Yurttutan S, İpek S, Güllü UU. Why the SARS-Cov-2 has prolonged spreading time in children? [published online, 2020 May 1]. Pediatr Pulmonol. 2020. doi:10.1002/ppul.24795

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prolonged viral elimination					more difficult, resulting in prolonged elimination time as observed in existing case studies.	to prolonged viral elimination time.	
Children, pediatric emergency department, clinical characteristics, epidemiology, Italy	1-May-20	Children with Covid-19 in Pediatric Emergency Departments in Italy	New England Journal of Medicine	Correspondence	The Coronavirus Infection in Pediatric Emergency Departments (CONFIDENCE) study involved a cohort of 100 Italian children (<18 years) with COVID-19, confirmed by RT-PCR testing of nasal or nasopharyngeal swabs. Children (median age 3.3 years, range 0-27.5 years) were assessed between March 3 and March 27, 2020 in 17 pediatric emergency departments. Exposure to SARS-CoV-2 from an unknown source or from a source outside the child's family accounted for 55% of the cases of infection. Common symptoms were cough (44%) and no feeding or difficulty feeding (23%). Among the entire cohort, 21% of patients were asymptomatic, 58% had mild disease, 19% had moderate disease, 1% had severe disease, and 1% were in critical condition. Of the 9 patients who received respiratory support, 6 had coexisting conditions. No deaths were reported.	Most children with COVID-19 in this Italian cohort had mild disease; no deaths were reported. The incidence of transmission through family cluster exposure was lower in this cohort, compared to previously studied cohorts in other countries.	Parri N, Lenge M, Buonsenso D. Children with Covid-19 in Pediatric Emergency Departments in Italy [published online, 2020 May 1]. NEJM. doi:10.1056/NEJMc2007617
Pregnancy, mother-newborn separation, breastfeeding, infection control, prenatal clinics	1-May-20	Coronavirus Disease 2019 (COVID-19) and Pregnancy: Responding to a Rapidly Evolving Situation	Obstetrics & Gynecology	Current Commentary	Although guidelines for pregnant women have been rapidly developed based on the best available evidence, additional information is critically needed to inform key decisions, such as whether pregnant health care workers should receive special consideration, whether to temporarily separate infected mothers and their newborns, and whether it is safe for infected women to breastfeed. Some current recommendations are well supported, based largely on what we know from seasonal influenza: patients should avoid contact with ill persons, avoid touching their face, cover coughs and sneezes, wash hands frequently, disinfect contaminated surfaces, and stay home when sick. Prenatal clinics should ensure all pregnant women and their visitors are screened for fever and respiratory symptoms, and symptomatic women should be isolated from well women and required to wear a mask. The authors recommend that as COVID-19 rapidly spreads, obstetricians must keep up to date on the latest information.	This review discusses current guidelines for infection control in pregnant women.	Rasmussen SA, Jamieson DJ. Coronavirus Disease 2019 (COVID-19) and Pregnancy: Responding to a Rapidly Evolving Situation. Obstet Gynecol. 2020;135(5):999-1002. doi:10.1097/AOG.0000000000003873