# Evidence Search Service Results of your search request

## Covid-19 in children

**ID of request:** 22570  
**Date of request:** 2nd April, 2020  
**Date of completion:** 9th April, 2020

If you would like to request any articles or any further help, please contact:  Igor Brbre at [igor.brbre@nhs.net](mailto:igor.brbre@nhs.net)

Please acknowledge this work in any resulting paper or presentation as: Evidence search: Covid-19 in children. Igor Brbre. ( 9th April, 2020). BRIGHTON, UK: Brighton and Sussex Library and Knowledge Service.

**Sources searched**  
EMBASE (112)  
MEDLINE (91)  
PubMed (1)

**Date range used** (5 years, 10 years): Dec 2019 - Apr 2020   
**Limits used** (gender, article/study type, etc.): none   
**Search terms and notes** (full search strategy for database searches below):

Relevant natural language and controlled vocabulary terms were identified, selected and combined. Search strategies were adapted to the search facilities of the medical information resources used. Medline and Embase searched via HDAS. Results were de-duplicated, no screening performed. Full search strategy below.

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### [C. Search History](#SearchHistory)

## A. Systematic Reviews

#### Wiley

**Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults.** (2020)

Ludvigsson Jonas F.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=10a7c4eb3529065ec4f0cae96330e8cc)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=0894b1ceb395fad4cf6e77f26abc7ede)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=f4102bdbe9b1f36279e6571658bbeb43)

AIMThe coronavirus disease 2019 (COVID-19) pandemic has affected hundreds of thousands of people. Data on symptoms and prognoses in children are rare.METHODSA systematic literature review was carried out to identify papers on COVID-19, which is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), using the Medline and EMBASE databases between 1 January and 18 March 2020.RESULTSThe search identified 45 relevant scientific papers and letters. The review showed that children have so far accounted for 1-5% of diagnosed COVID-19 cases, they often have milder disease than adults and deaths have been extremely rare. Diagnostic findings have been similar to adults, with fever and respiratory symptoms being prevalent, but fewer children seem to have developed severe pneumonia. Elevated inflammatory markers were less common in children and lymphocytopenia seemed rare. Newborn infants have developed symptomatic COVID-19, but evidence of vertical intrauterine transmission was scarce. Suggested treatment included providing oxygen, inhalations, nutritional support and maintaining fluids and electrolyte balances.CONCLUSIONSCOVID-19 has occurred in children, but they seemed to have a milder disease course and better prognoses than adults. Deaths were extremely rare.

**Potential interventions for novel coronavirus in China: A systematic review** (2020)

Zhang L., Liu Y.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=4af988271a7dd26aa092b53c3b5f6d9e)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=ac58710e2ee27bf9a94bfbf570c3a821)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=af0dc2be3461a04085c0b02668586754)

An outbreak of a novel coronavirus (COVID-19 or 2019-CoV) infection has posed significant threats to international health and the economy. In the absence of treatment for this virus, there is an urgent need to find alternative methods to control the spread of disease. Here, we have conducted an online search for all treatment options related to coronavirus infections as well as some RNA-virus infection and we have found that general treatments, coronavirus-specific treatments, and antiviral treatments should be useful in fighting COVID-19. We suggest that the nutritional status of each infected patient should be evaluated before the administration of general treatments and the current children's RNA-virus vaccines including influenza vaccine should be immunized for uninfected people and health care workers. In addition, convalescent plasma should be given to COVID-19 patients if it is available. In conclusion, we suggest that all the potential interventions be implemented to control the emerging COVID-19 if the infection is uncontrollable.<br/>Copyright © 2020 Wiley Periodicals, Inc.

## B. Original Research

1. **2019-nCoV (Wuhan virus), a novel Coronavirus: human-to-human transmission, travel-related cases, and vaccine readiness.**  
   Ralph Robyn Journal of infection in developing countries 2020;14(1):3-17.

On 31 December 2019 the Wuhan Health Commission reported a cluster of atypical pneumonia cases that was linked to a wet market in the city of Wuhan, China. The first patients began experiencing symptoms of illness in mid-December 2019. Clinical isolates were found to contain a novel coronavirus with similarity to bat coronaviruses. As of 28 January 2020, there are in excess of 4,500 laboratory-confirmed cases, with > 100 known deaths. As with the SARS-CoV, infections in children appear to be rare. Travel-related cases have been confirmed in multiple countries and regions outside mainland China including Germany, France, Thailand, Japan, South Korea, Vietnam, Canada, and the United States, as well as Hong Kong and Taiwan. Domestically in China, the virus has also been noted in several cities and provinces with cases in all but one provinence. While zoonotic transmission appears to be the original source of infections, the most alarming development is that human-to-human transmission is now prevelant. Of particular concern is that many healthcare workers have been infected in the current epidemic. There are several critical clinical questions that need to be resolved, including how efficient is human-to-human transmission? What is the animal reservoir? Is there an intermediate animal reservoir? Do the vaccines generated to the SARS-CoV or MERS-CoV or their proteins offer protection against 2019-nCoV? We offer a research perspective on the next steps for the generation of vaccines. We also present data on the use of in silico docking in gaining insight into 2019-nCoV Spike-receptor binding to aid in therapeutic development. Diagnostic PCR protocols can be found at https://www.who.int/health-topics/coronavirus/laboratory-diagnostics-for-novel-coronavirus.

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1. **2019-novel coronavirus outbreak: A new challenge**  
   Lupia T. Journal of global antimicrobial resistance 2020;:No page numbers.

OBJECTIVES: Following the public health emergency declared by the World Health Organization and the recent outbreak by 2019-nCoV in China and through other 29 countries, we aimed to summarize the clinical aspects of novel beta-coronavirus infection and its possible clinical presentations together with suggested therapeutic algorithms for patients who may require antibiotic treatment. <br/>METHOD(S): We reviewed the currently available literature of microbiologically confirmed infections by 2019-ConV (or COVID-19) occurred at the time of writing (13 February 2020). A literature search was performed using the PubMed database and the Cochrane library. Search terms included "novel coronavirus" or "2019-nCoV" or "COVID-19". <br/>RESULT(S): Published cases occurred mostly in males (age ranged from 8 to 92). Cardiovascular, digestive and endocrine system diseases were commonly reported, except previous chronic pulmonary diseases (e.g., COPD, asthma, bronchiectasis) that were surprisingly underreported. Fever was presented in all the case series available, flanked by cough, dyspnea, myalgias and fatigue. Multiple bilateral lobular and subsegmental areas of consolidation or bilateral ground-glass opacities were the main reported radiological features of 2019-nCoV, at least in the early phases of disease. <br/>CONCLUSION(S): The new 2019-nCoV epidemics is mainly associated with respiratory disease and few extrapulmonary signs. However, there is a low rate of associated pre-existing respiratory comorbidities.<br/>Copyright &#xa9; 2020. Published by Elsevier Ltd.

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1. **A 55-Day-Old Female Infant infected with COVID 19: presenting with pneumonia, liver injury, and heart damage.**  
   Cui Yuxia The Journal of infectious diseases 2020;:No page numbers.

Previous studies on the pneumonia outbreak caused by the 2019 novel coronavirus disease (COVID-19) were mainly based on information from adult populations. Limited data are available for children with COVID-19, especially for infected infants. We report a 55-day-old case with COVID-19 confirmed in China and describe the identification, diagnosis, clinical course, and treatment of the patient, including the disease progression from day 7 to day 11 of illness. This case highlights that children with COVID-19 can also present with multiple organ damage and rapid disease changes. When managing such patients, frequent and careful clinical monitoring is essential.

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1. **A COVID-19 Transmission within a family cluster by presymptomatic infectors in China.**  
   Qian Guoqing Clinical infectious diseases : an official publication of the Infectious Diseases Society of America 2020;:No page numbers.

We report a COVID-19 family cluster caused by a presymptomatic case. There were 9 family members, including 8 laboratory-confirmed with COVID-19, and a 6-year-old child had no evidence of infection. Amongst the 8 patients, one adult and one 13-month-old infant were asymptomatic, one adult was diagnosed as having severe pneumonia.

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1. **A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster.**  
   Chan Jasper Fuk-Woo Lancet (London, England) 2020;395(10223):514-523.

BACKGROUNDAn ongoing outbreak of pneumonia associated with a novel coronavirus was reported in Wuhan city, Hubei province, China. Affected patients were geographically linked with a local wet market as a potential source. No data on person-to-person or nosocomial transmission have been published to date.METHODSIn this study, we report the epidemiological, clinical, laboratory, radiological, and microbiological findings of five patients in a family cluster who presented with unexplained pneumonia after returning to Shenzhen, Guangdong province, China, after a visit to Wuhan, and an additional family member who did not travel to Wuhan. Phylogenetic analysis of genetic sequences from these patients were done.FINDINGSFrom Jan 10, 2020, we enrolled a family of six patients who travelled to Wuhan from Shenzhen between Dec 29, 2019 and Jan 4, 2020. Of six family members who travelled to Wuhan, five were identified as infected with the novel coronavirus. Additionally, one family member, who did not travel to Wuhan, became infected with the virus after several days of contact with four of the family members. None of the family members had contacts with Wuhan markets or animals, although two had visited a Wuhan hospital. Five family members (aged 36-66 years) presented with fever, upper or lower respiratory tract symptoms, or diarrhoea, or a combination of these 3-6 days after exposure. They presented to our hospital (The University of Hong Kong-Shenzhen Hospital, Shenzhen) 6-10 days after symptom onset. They and one asymptomatic child (aged 10 years) had radiological ground-glass lung opacities. Older patients (aged >60 years) had more systemic symptoms, extensive radiological ground-glass lung changes, lymphopenia, thrombocytopenia, and increased C-reactive protein and lactate dehydrogenase levels. The nasopharyngeal or throat swabs of these six patients were negative for known respiratory microbes by point-of-care multiplex RT-PCR, but five patients (four adults and the child) were RT-PCR positive for genes encoding the internal RNA-dependent RNA polymerase and surface Spike protein of this novel coronavirus, which were confirmed by Sanger sequencing. Phylogenetic analysis of these five patients' RT-PCR amplicons and two full genomes by next-generation sequencing showed that this is a novel coronavirus, which is closest to the bat severe acute respiatory syndrome (SARS)-related coronaviruses found in Chinese horseshoe bats.INTERPRETATIONOur findings are consistent with person-to-person transmission of this novel coronavirus in hospital and family settings, and the reports of infected travellers in other geographical regions.FUNDINGThe Shaw Foundation Hong Kong, Michael Seak-Kan Tong, Respiratory Viral Research Foundation Limited, Hui Ming, Hui Hoy and Chow Sin Lan Charity Fund Limited, Marina Man-Wai Lee, the Hong Kong Hainan Commercial Association South China Microbiology Research Fund, Sanming Project of Medicine (Shenzhen), and High Level-Hospital Program (Guangdong Health Commission).

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1. **A Meta-Analysis of Multiple Whole Blood Gene Expression Data Unveils a Diagnostic Host-Response Transcript Signature for Respiratory Syncytial Virus.**  
   Barral-Arca Ruth International journal of molecular sciences 2020;21(5):No page numbers.

Respiratory syncytial virus (RSV) is one of the major causes of acute lower respiratory tract infection worldwide. The absence of a commercial vaccine and the limited success of current therapeutic strategies against RSV make further research necessary. We used a multi-cohort analysis approach to investigate host transcriptomic biomarkers and shed further light on the molecular mechanism underlying RSV-host interactions. We meta-analyzed seven transcriptome microarray studies from the public Gene Expression Omnibus (GEO) repository containing a total of 922 samples, including RSV, healthy controls, coronaviruses, enteroviruses, influenzas, rhinoviruses, and coinfections, from both adult and pediatric patients. We identified > 1500 genes differentially expressed when comparing the transcriptomes of RSV-infected patients against healthy controls. Functional enrichment analysis showed several pathways significantly altered, including immunologic response mediated by RSV infection, pattern recognition receptors, cell cycle, and olfactory signaling. In addition, we identified a minimal 17-transcript host signature specific for RSV infection by comparing transcriptomic profiles against other respiratory viruses. These multi-genic signatures might help to investigate future drug targets against RSV infection.

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1. **A quickly, effectively screening process of novel corona virus disease 2019 (COVID-19) in children in Shanghai, China**  
   Shi Y. Annals of Translational Medicine 2020;8(5):No page numbers.

Background: A recent cluster of pneumonia cases in China was caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We report the screening and diagnosis of corona virus disease 2019 (COVID-19) in our hospital. <br/>Method(s): Developed a procedure for the identification of children cases with COVID-19 in outpatient and emergency department of our hospital, then we observed how this process works. <br/>Result(s): (I) There were 56 cases considered suspected cases, and 10 cases were confirmed as COVID-19. (II) Of the 10 confirmed COVID-19 cases admitted in our hospital, 5 were males and 5 were females, aged from 7 months to 11 years, the average age is 6.0+/-4.2 years, 6 cases were mild pneumonia, the others were upper respiratory tract infection. (III) We followed up 68 patients in isolation at home until symptoms disappeared. Non were missed in the patient's first visit. The sensitivity of this method is 100% and the specificity is 71.3%. <br/>Conclusion(s): Our screening process works well, and it is also necessary to establish a screening network in the hospital.<br/>Copyright &#xa9; Annals of Translational Medicine. All rights reserved.

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1. **An investigation into respiratory tract viruses in children with acute lower respiratory tract infection or wheezing.**  
   Dabaniyasti Demet Minerva pediatrica 2020;72(1):45-54.

BACKGROUNDThis study aimed to determine the frequencies of respiratory tract viruses in patient (acute lower respiratory tract infection [LRTI] or wheezing) and control (history of asthma without symptoms) groups.METHODSUsing multiplex-polymerase chain reaction (PCR), respiratory tract viruses were investigated in the respiratory tract specimens from patient and control groups followed in the Pediatric Clinic.RESULTSThe viruses detected in the patient and control groups (P=0.013) were as follows, respectively: rhinoviruses A, B, C (25.6% and 36.7%), influenza virus A (21.1% and 0.0%), parainfluenza virus type 1 (7.8% and 1.7%), parainfluenza virus type 4 (5.6% and 0.0%), adenoviruses A, B, C, D, E (4.4% and 1.7%), parainfluenza virus type 3 (4.4% and 1.7%), coronaviruses 229E and NL63 (4.4% and 1.7%), coronavirus OC43 (3.3% and 0.0%), respiratory syncytial virus A (3.3% and 0.0%), parainfluenza virus type 2 (2.2% and 0.0%), influenza virus B (2.2% and 0.0%), and respiratory syncytial virus B (1.1% and 1.7%). No bocavirus, metapneumovirus or enterovirus was found in any specimen. Statistically significant differences in the detection of influenza virus A (P=0.000), the total detection of parainfluenza viruses (P=0.008) and coinfection (P=0.004) were observed between the patient and control groups.CONCLUSIONSThe advantage of our study compared with other studies is the inclusion of not only wheezing patients but also children with asthma without symptom. The higher detection of rhinoviruses both in patient and control groups give rise to thought that these viruses may be responsible for asthma exacerbations and may be related with long duration of virus shedding.

1. **Anal swab findings in an infant with COVID-19**  
   Fan Q. Pediatric Investigation 2020;4(1):48-50.

Introduction: The transmission pathways of coronavirus disease 2019 (COVID-19) remain not completely clear. In this case study the test for the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in pharyngeal swab and anal swab were compared. Case presentation: A 3-month-old girl was admitted to our hospital with COVID-19. Her parents had both been diagnosed with COVID-19. The results of pharyngeal swab and anal swab of the little girl were recorded and compared during the course of the disease. The oropharyngeal specimen showed negative result for SARS-CoV-2 on the 14th day after onset of the illness. However, the anal swab was still positive for SARS-CoV-2 on the 28th day after the onset of the illness. <br/>Conclusion(s): The possibility of fecal-oral transmission of COVID-19 should be assessed. Personal hygiene during home quarantine merits considerable attention.<br/>Copyright &#xa9; 2020 Chinese Medical Association. Pediatric Investigation published by John Wiley & Sons Australia, Ltd on behalf of Futang Research Center of Pediatric Development

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1. **Analysis of the pregnancy outcomes in pregnant women with COVID-19 in Hubei Province**  
   Zhang L. Zhonghua fu chan ke za zhi 2020;55:No page numbers.

Objective: To study the effect of COVID-19 on pregnancy outcomes and neonatal prognosis in Hubei Province. <br/>Method(s): A retrospective comparison of the pregnancy outcomes was done between 16 women with COVID-19 and 45 women without COVID-19. Also, the results of laboratory tests, imaging examinations, and the 2019-nCoV nucleic acid test were performed in 10 cases of neonatal deliverd from women with COVID-19. <br/>Result(s): (1) Of the 16 pregnant women with COVID-19, 15 cases were ordinary type and 1 case was severe type. No one has progressed to critical pneumonia. The delivery method of the two groups was cesarean section, and the gestational age were (38.7+/-1.4) and (37.9+/-1.6) weeks, there was no significant difference between the two groups (P&gt; 0.05). Also, there wee no significant differences in the intraoperative blood loss and birth weight of the newborn between the two groups (all P&gt;0.05). (2) Ten cases of neonates delivered from pregnant women with COVID-19 were collected. The 2019-nCoV nucleic acid test were all negative. There were no significant differences in fetal distress, meconium-stained amniotic fluid, preterm birth, and neonatal asphyxia between the two groups (all P&gt;0.05). (3) In the treatment of uterine contraction fatigue, carbetocin or carboprost tromethamine was used more in cesarean section for pregnant women with COVID-19 (1.3+/-0.6), compared with Non-COVID-19 group (0.5+/-0.7), the difference was statistically significant (P=0.001). <br/>Conclusion(s): If there is an indication for obstetric surgery or critical illness of COVID-19 in pregnant women, timely termination of pregnancy will not increase the risk of premature birth and asphyxia of the newborn, but it is beneficial to the treatment and rehabilitation of maternal pneumonia. Preventive use of long-acting uterotonic agents could reduce the incidence of postpartum hemorrhage during surgery. 2019-nCoV infection has not been found in neonates deliverd from pregnant women with COVID-19.

1. **Anesthesia management in cesarean section for a patient with coronavirus disease 2019**  
   Kang X. Zhejiang da xue xue bao. Yi xue ban = Journal of Zhejiang University. Medical sciences 2020;49(1):0.

Since the corona virus disease 2019 (COVID-19) affects the cardio-pulmonary function of pregnant women, the anesthetic management in the cesarean section for the patients, as well as the protection for medical staff is significantly different from that in ordinary surgical operation. This paper reports a pregnant woman with COVID-19, for whom a cesarean section was successfully performed in our hospital on February 8, 2020. Anesthetic management, protection of medical staff and psychological intervention for the patients during the operation are discussed. Importance should be attached to the preoperative evaluation of pregnant women with COVID-19 and the implementation of anesthesia plan. For ordinary COVID-19 patients intraspinal anesthesia is preferred in cesarean section, and the influence on respiration and circulation in both maternal and infant should be reduced; while for severe or critically ill patients general anesthesia with endotracheal intubation should be adopted. The safety of medical environment should be ensured, and level-III standard protection should be taken for anesthetists. Special attention and support should be given to maternal psychology. It is important to give full explanation before operation to reduce anxiety; to relieve the discomfort during operation to reduce tension; to avoid the bad mood of patients due to pain after operation.

1. **Association between BDNF gene polymorphisms and attention deficit hyperactivity disorder in school-aged children in Wuhan, China.**  
   Luo Liwei Journal of affective disorders 2020;264:304-309.

BACKGROUNDBrain-derived neurotrophic factor (BDNF) is vital for neuronal survival and growth, regulation of synaptic plasticity, and cognitive function. Previous studies examined the role of BDNF in susceptibility to attention deficit hyperactivity disorder (ADHD). The current study examined the association between BDNF gene polymorphisms and ADHD in Chinese children.METHODSParticipants were 195 medication-naive ADHD children and 263 unaffected healthy controls. ADHD symptoms were diagnosed using the Vanderbilt ADHD Diagnostic Parental Rating Scale according to the Diagnostic and Statistical Manual of Mental Disorders-5. Five BDNF single nucleotide polymorphisms were detected using improved multiplex ligation detection reaction. Alleles and genotype frequency were examined using Chi-square tests. Correlations were examined using multivariate logistic regression analysis in the ADHD and control groups.RESULTSThe results revealed that rs12291186 with one or both mutated allele(s) was significantly associated with reduced likelihood of ADHD (OR = 0.13, 95% CI: 0.02-0.77) and ADHD-Combined (OR = 0.10, 95% CI: 0.01-0.85). Children with genotype AA or CA in rs10835210 exhibited increased risk of ADHD (OR = 3.29, 95% CI: 1.03-10.55) and ADHD-Combined (OR = 4.45, 95% CI: 1.10-17.96) compared with genotype CC children. No significant associations were found between rs6265, rs7103411, rs7103873 polymorphisms and ADHD.LIMITATIONSParticipants were recruited from urban areas. We were unable to examine all potential confounding factors.CONCLUSIONSBDNF gene polymorphisms of rs12291186 and rs10835210 were related to the occurrence of ADHD. These findings provide new insight on mechanisms underlying BDNF gene in ADHD.

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1. **Association between birth weight and neurodevelopment at age 1-6 months: results from the Wuhan Healthy Baby Cohort.**  
   Zhang Man BMJ open 2020;10(1):e031916.

OBJECTIVEThe association between birth weight and infants' neurodevelopment is not well understood. We aimed to examine the impact of birth weight on neurodevelopment of infants at age 1-6 months using data from the Wuhan Healthy Baby Cohort (WHBC) study.SETTING AND PARTICIPANTSThis is a prospective cohort study of 4026 infants from the WHBC study who were born at the Women and Children's Hospital of Wuhan, China between October 2012 and September 2013 and who had complete healthcare records within 6 months after birth. Participants were categorised into three groups according to their birth weight: low birth weight (LBW; birth weight <2500 g), normal birth weight (2500 g ≤ birth weight <4000 g) and macrosomia (birth weight ≥4000 g).MAIN OUTCOME MEASURESThe main outcomes were development quotient (DQ) and clinical diagnosis of neurodevelopmental delay. Both adjusted regression coefficients and ORs were estimated for LBW and macrosomia.RESULTSOf the 4026 infants, 166 (4.12%) were of LBW and 237 (5.89%) were with macrosomia. Adjusted regression coefficients of LBW and macrosomia for gross motor DQ were -11.18 (95% CI -11.36 to 10.99) and 0.49 (95% CI 0.36 to 0.63), fine motor DQ -6.57 (95% CI -6.76 to -6.39) and -2.73 (95% CI -2.87 to -2.59), adaptability DQ -4.87 (95% CI -5.05 to -4.68) and -1.19 (95% CI -1.33 to -1.05), language DQ -6.23 (95% CI -6.42 to -6.05) and 0.43 (95% CI 0.29 to 0.57), and social behaviour DQ -6.82 (95% CI -7.01 to -6.64) and 1.10 (95% CI 0.96 to 1.24). Adjusted OR of LBW for clinical diagnosis of 'neurodevelopmental delay' in gross motor was 2.43 (95% CI 1.65 to 3.60), fine motor 1.49 (95% CI 1.01 to 2.19) and adaptability 1.56 (95% CI 1.06 to 2.31). LBW has no significant effects on 'neurodevelopmental delay' in language and social behaviour, and macrosomia has no significant effects on clinical diagnosis of 'neurodevelopmental delay' in all domains.CONCLUSIONBoth LBW and macrosomia are associated with infants' DQ, and LBW increases the risk of being diagnosed with 'neurodevelopmental delay' in gross motor, fine motor and adaptability among infants aged 1-6 months.

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1. **Association between breastfeeding and Kawasaki disease: a case-control study.**  
   Wang Shun European journal of pediatrics 2020;179(3):447-453.

The association between breastfeeding and Kawasaki disease is not fully understood. We performed a case-control study to examine the association between breastfeeding and Kawasaki disease. In this study, 389 children diagnosed with Kawasaki disease and 426 gender- and age-matched controls were identified at Renmin Hospital of Wuhan University between November 2013 and March 2019. Demographic and clinical data were collected from a structured telephone interview and medical record database. Odds ratio and 95% confidence interval for risk of Kawasaki disease were estimated. Children who were breastfed exclusively had a decrease in developing Kawasaki disease (adjusted odds ratios and 95% confidence intervals 0.53 (0.38-0.74). Although the risk reduction was not statistically different, partial breastfeeding also provided a protective effect (adjusted odds ratios and 95% confidence intervals 0.70 (0.48-1.01). In the stratified analysis, we still observed that exclusive breastfeeding was inversely associated with the development of complete Kawasaki disease (adjusted odds ratios and 95% confidence intervals 0.52 (0.31-0.88) and incomplete Kawasaki disease (adjusted odds ratios and 95% confidence intervals 0.54 (0.38-0.77). However, there was no significant association between exclusive breastfeeding and the intravenous immunoglobulin treatment response (adjusted odds ratios and 95% confidence intervals 0.69 (0.27-1.69) and the risk of coronary artery lesions (adjusted odds ratios and 95% confidence intervals 0.79 (0.49-1.31) in Kawasaki disease.Conclusion: Our analysis suggests that exclusive breastfeeding was inversely associated with the development of Kawasaki disease and that breastfeeding might be a potential protective factor against Kawasaki diseaseWhat is known• Previous studies have demonstrated that breastfeeding has been shown to potentially confer protection against several autoimmune disorders of childhood.• The association between breastfeeding and Kawasaki disease is not fully understood.What is newThe first study to evaluate the association between breastfeeding and the development of Kawasaki disease in China with a large sample size.• Exclusive breastfeeding was inversely associated with the development of Kawasaki disease and breastfeeding might be a potential protective factor against Kawasaki disease.

1. **Association between thyroid dysfunction and perinatal outcomes in women with gestational hypertension: A retrospective study**  
   Gui J. BMC Pregnancy and Childbirth 2020;20(1):No page numbers.

Background: Previous studies showed that thyroid dysfunction in women with gestational hypertension could negatively affect maternal and fetal outcomes. In this study, we aimed to investigate whether thyroid dysfunction assessed in the second half trimester contributed to neonatal outcomes of pregnancy in different subtypes of gestational hypertension disease. <br/>Method(s): We performed a retrospective case-control study and collected data from 135 singleton pregnant women with gestational hypertension disease and their offspring who delivered in Renmin Hospital of Wuhan University from January 2015 to June 2017. We classified the patients based on the severity of the preeclampsia into three groups: pregnant induced hypertension (PIH), mild preeclampsia (MPE) and severe preeclampsia (SPE). Based on the onset time of preeclampsia, we classified the patients into PIH, early onset preeclampsia (EPE) and late onset preeclampsia. Demographic data and levels of thyroid hormones, as well as the adverse maternal and neonatal outcomes were collected from Electronic Medical Records. Logistic regression was used to estimate the associations between thyroid dysfunction and neonatal outcomes in these patients. <br/>Result(s): Gestational weeks and neonatal birthweight were significantly lower, while incidence of preterm birth was significantly higher in the SPE and EPE groups than those in the PIH group (P &lt; 0.001). Thyroid dysfunction was more frequent in the SPE group than in the MPE group (P = 0.01). Incidences of both preterm birth and low birth weight were significantly higher in patients with thyroid dysfunction (P = 0.008, P = 0.047 respectively). After adjustment, both severity of gestational hypertension (OR = 4.360, 95%CI [2.050, 9.271], P &lt; 0.001; OR = 4.023, 95%CI [1.933, 8.372], P &lt; 0.001) and thyroid dysfunction (OR = 3.011, 95%CI [1.248, 7.262], P = 0.014; OR = 11.306, 95%CI [1.040, 122.889], P = 0.046) were associated with higher risk of preterm birth and low birth weight, while the onset time of preeclampsia (OR = 0.031, 95%CI [0.009, 0.110], P &lt; 0.001; OR = 0.097, 95%CI [0.033, 0.282], P &lt; 0.001) was negatively associated with the risk of preterm birth and low birth weight. <br/>Conclusion(s): Severe and early onset preeclampsia, as well as thyroid dysfunction are associated with higher risk of preterm birth and low neonatal birth weight. Therefore, our data suggest that monitoring thyroid hormones in women with preeclampsia might help to predict adverse neonatal outcomes.<br/>Copyright &#xa9; 2020 The Author(s).

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1. **Association of adverse birth outcomes with prenatal uranium exposure: A population-based cohort study**  
   Zhang W. Environment International 2020;135:No page numbers.

Uranium (U) is a well-recognized hazardous heavy metal with embryotoxicity and fetotoxicity. However, little is known about its association with adverse birth outcomes. We aimed to investigate the potential correlation between prenatal U exposure and birth outcomes. Urine samples of 8500 women were collected before delivery from a birth cohort in Wuhan, China. Concentrations of urinary U and other metals were measured by inductively coupled plasma mass spectrometry. We used multivariable logistic regressions to evaluate the associations between urinary U concentrations and adverse birth outcomes, such as preterm birth (PTB), low birth weight (LBW) and small for gestational age (SGA). Associations of urinary U concentrations with gestational age, birth weight, and birth length were investigated by linear regressions. The geometric mean of U concentration was 0.03 mug/L. After adjustment for potential confounders, we found each Log<sub>2</sub>-unit increase in U concentration was associated with a significant decrease in gestational age [adjusted beta = -0.32 day; 95% confidence interval (CI): -0.44, -0.20] and a significant increased likelihood of PTB (adjusted OR = 1.18, 95% CI: 1.07, 1.29). This birth cohort uncovered an association of maternal exposure to U during pregnancy with decreased gestational age and increased risk of PTB. Our findings reveal an association of maternal exposure to U during pregnancy with decreased gestational age and increased risk of PTB.<br/>Copyright &#xa9; 2019 The Authors

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1. **Association of circulating saturated fatty acids with the risk of pregnancy-induced hypertension: a nested case-control study**  
   Li X. Hypertension Research 2020;:No page numbers.

Circulating saturated fatty acids (SFAs) have been associated with cardiovascular disease. However, little is known about the relationship of SFAs with the risk of pregnancy-induced hypertension (PIH). We conducted a nested case-control study to examine the associations between circulating SFAs and the risk of PIH. A total of 92 PIH cases were matched to 184 controls by age (+/-2 years) and infant sex from a birth cohort study conducted in Wuhan, China. Levels of circulating fatty acids in plasma were measured using gas chromatography-mass spectrometry. Conditional logistic regressions were conducted to calculate odds ratios (ORs) and 95% confidence intervals (95% CIs). Even-chain SFAs, including myristic acid (14:0) and palmitic acid (16:0), were positively associated with the risk of PIH [ORs (95% CIs): 2.92 (1.27, 6.74) for 14:0 and 2.85 (1.18, 6.89) for 16:0, % by wt]. In contrast, higher levels of very-long-chain SFAs, including arachidic acid (20:0), behenic acid (22:0), and lignoceric acid (24:0), were associated with a lower risk of PIH [ORs (95% CIs): 0.40 (0.17, 0.92) for 20:0, 0.30 (0.12, 0.71) for 22:0 and 0.26 (0.11, 0.64) for 24:0, mug/mL]. For odd-chain SFAs, including pentadecanoic acid (15:0) and heptadecanoic acid (17:0), no significant difference was observed. Our results provided convincing evidence that different subclasses of SFAs showed diverse effects on the risk of PIH. This suggests that dietary very-long-chain SFAs may be a novel means by which to prevent hypertension. Future studies are required to confirm these associations and elucidate the underlying mechanisms.<br/>Copyright &#xa9; 2020, The Japanese Society of Hypertension.

1. **Association of urinary cadmium, circulating fatty acids, and risk of gestational diabetes mellitus: A nested case-control study in China**  
   Li X. Environment International 2020;137:No page numbers.

Background: Previous studies have observed that cadmium (Cd) exposure of pregnant women was associated with increased risk of gestational diabetes mellitus (GDM). However, the potential mechanism still remains unclear. In addition, various animal studies have suggested that Cd exposure could affect fatty acids (FAs) metabolism, but data on humans are scant. <br/>Objective(s): We conducted a nested case-control study to investigate the associations of urinary Cd concentrations with levels of circulating FAs and risk of GDM in pregnant women, and further to examine the role of FAs in mediating the relationship between Cd exposure and risk of GDM. <br/>Method(s): A total of 305 GDM cases were matched to 305 controls on pregnant women's age (+/-2 years) and infant's gender from a birth cohort study conducted in Wuhan, China. Urinary Cd concentrations and levels of plasma FAs between 10 and 16 gestational weeks were measured using inductively coupled plasma mass spectrometry and gas chromatography-mass spectrometry, respectively. Conditional logistic regressions models were used to estimate the associations of Cd concentrations and levels of FAs with the risk of GDM. Multiple linear regression models were applied to estimate the associations between Cd concentrations and levels of FAs. Mediation analysis was used to assess the mediating role of FAs in the association of Cd with the risk of GDM. <br/>Result(s): Urinary concentrations of Cd in cases (median: 0.69 mug/L) were significantly higher than controls (median: 0.59 mug/L, P &lt; 0.05). Cd concentrations were positively associated with the risk of GDM (P<sub>trend</sub> = 0.003). Compared to the first tertile of Cd, the adjusted odds ratios (95% confidence intervals) of GDM risk were 2.08 (1.29, 3.36) for the second tertile and 2.09 (1.32, 3.33) for the third tertile. Cd concentrations were positively correlated with levels of eicosadienoic acid and arachidonic acid/eicosapentaenoic acid ratio, but negatively correlated with levels of stearic acid, eicosapentaenoic acid, total odd-chain saturated fatty acids, total n-3 polyunsaturated fatty acids (PUFAs), and n-3 PUFAs/n-6 PUFAs ratio. We did not observe evidence that the association of Cd exposure and risk of GDM was mediated through FAs. <br/>Conclusion(s): Our findings confirmed the association of higher Cd exposure with increased risk of GDM in pregnant women, and provided forceful epidemiological evidence for the relation of Cd concentrations and levels of FAs.<br/>Copyright &#xa9; 2020

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1. **Asthma mortality is triggered by short-term exposures to ambient air pollutants: Evidence from a Chinese urban population**  
   Zhang Y. Atmospheric Environment 2020;223:No page numbers.

Background: Short-term exposure to ambient air pollution (AAP) has been widely linked to asthma morbidity such as outpatient and emergency visits and hospitalization. Up to date, however, the acute effects of AAP exposure on asthma mortality remained largely unknown possibly due to the rare occurrence of asthma deaths. <br/>Objective(s): This study aimed to investigate whether the death risks from asthma are triggered by short-term AAP exposures in a Chinese urban population who suffered poor air quality. <br/>Method(s): 1385 asthma death cases were identified from the total 61.3 thousand death records in two urban districts in Wuhan, central China, 2003-2013. We performed a time-stratified case-crossover design and conditional logistic regression models were applied to assess short-term associations of air pollutants (particulate matter with aerodynamic diameter &lt;=10 mum [PM<sub>10</sub>], sulfur dioxide [SO<sub>2</sub>], and nitrogen dioxide [NO<sub>2</sub>]) along different exposure days with asthma mortality. <br/>Result(s): A total of 1385 case days and 4668 control days were investigated during the study period. Daily mean concentrations of PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>2</sub> were 116.6 mug/m<sup>3</sup>, 53.4 mug/m<sup>3</sup>, and 60.7 mug/m<sup>3</sup>, respectively. A 10 mug/m<sup>3</sup> rise in exposure to SO<sub>2</sub> and NO<sub>2</sub> at 2 days prior to death (lag 2 days), was associated with increased asthma death risks of 2.9% (odds ratio [OR] = 1.029, 95% confidence interval [CI]: 1.006, 1.053) and 4.3% (OR = 1.043, 95% CI: 1.012, 1.076), respectively. No evident PM<sub>10</sub>-asthma associations were identified in all subpopulations except for those aged 85+ years (OR = 1.022, 95% CI: 1.001 to 1.044). In our stratified analyses, significant effects of SO<sub>2</sub> and NO<sub>2</sub> were only observed in female, the older elderly, 7+ years-educated and unmarried persons, as well as those died outside the hospital and in cold season. We observed some evidence for effect modification by age, with p-values of 0.032 for PM<sub>10</sub> and 0.051 for SO<sub>2</sub>, suggesting higher vulnerability to air pollution among the older asthma cases. <br/>Conclusion(s): This study provided suggestive evidence for the short-term association between air pollution exposure and asthma death in highly polluted urban areas. Several days' high-level exposures to air pollutants, particularly SO<sub>2</sub> and NO<sub>2</sub>, may elevate risks of asthma death. Our findings highlighted the potential health benefits from intervention and preventive actions targeted to reducing AAP exposure among asthma patients.<br/>Copyright &#xa9; 2020 Elsevier Ltd

1. **AVNP2 protects against cognitive impairments induced by C6 glioma by suppressing tumour associated inflammation in rats.**  
   Li Junyang Brain, behavior, and immunity 2020;:No page numbers.

Glioblastoma is a kind of malignant tumour and originates from the central nervous system. In the last century, some researchers and clinician have noticed that the psychosocial and neurocognitive functioning of patients with malignant gliomas can be impaired. Many clinical studies have demonstrated that part of patients, adults or children, diagnosed with glioblastoma will suffer from cognitive deficiency during their clinical course, especially in long-term survivors. Many nanoparticles (NPs) can inhibit the biological functions of tumours by modulating tumour-associated inflammation, which provokes angiogenesis and tumour growth. As one of the best antiviral nanoparticles (AVNPs), AVNP2 is the 2nd generation of AVNP2 that have been conjugated to graphite-graphene for improving physiochemical performance and reducing toxicity. AVNP2 inactivates viruses, such as the H1N1 and H5N1influenza viruses and even the SARS coronavirus, while it inhibits bacteria, such as MRSA and E. coli. As antimicrobials, nanoparticles are considered to be one of the vectors for the administration of therapeutic compounds. Yet, little is known about their potential functionalities and toxicities to the neurotoxic effects of cancer. Herein, we explored the functionality of AVNP2 on inhibiting C6 in glioma-bearing rats. The novel object-recognition test and open-field test showed that AVNP2 significantly improved the neuro-behaviour affected by C6 glioma. AVNP2 also alleviated the decline of long-term potentiation (LTP) and the decreased density of dendritic spines in the CA1 region induced by C6. Western blot assay and immunofluorescence staining showed that the expressions of synaptic-related proteins (PSD-95 and SYP) were increased, and these findings were in accordance with the results mentioned above. It revealed that the sizes of tumours in C6 glioma-bearing rats were smaller after treatment with AVNP2. The decreased expression of inflammatory factors (IL-1β, IL-6 and TNF-α) by Western blotting assay and ELISA, angiogenesis protein (VEGF) by Western blotting assay and other related proteins (BDNF, NF-ĸB, iNOS and COX-2) by Western blotting assay in peri-tumour tissue indicated that AVNP2 could control tumour-associated inflammation, thus efficiently ameliorating the local inflammatory condition and, to some extent, inhibiting angiogenesis in C6-bearing rats. In conclusion, our results suggested that AVNP2 could have an effect on the peri-tumor environment, obviously restraining the growth progress of gliomas, and eventually improving cognitive levels in C6-bearing rats.

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1. **Bullying Victimization, Coping Strategies, and Depression of Children of China**  
   Xie S. Journal of interpersonal violence 2020;:No page numbers.

It is common knowledge that bullying victimization and coping strategies significantly affect the psychological well-being of children. However, which coping strategies are more effective at a particular level of bullying victimization is underexplored. Using survey data from 1,634 children from 10 schools in Wuhan, China, this study aims to investigate the abovementioned research gap. The results of factor analysis suggest that coping strategies of children in China can be divided into three types: help-seeking, avoidance, and self-defense. The results of multilevel modeling suggest that children adopting different coping strategies have distinct levels of depression. Help seekers show a significantly lower level of depression than self-defenders and avoiders. However, with increased bullying victimization, the effectiveness of the help-seeking strategy gradually decreases to offset the negative effect of bullying victimization on psychological well-being. Instead, those who adopt the self-defense strategy display a lower level of depression. The findings of this study suggest that there is no single coping strategy that is best for children, and the more effective strategy largely relies on the level of bullying victimization. The findings also imply that without external support, it is almost impossible for children to completely overcome the negative consequences of bullying on their own.

1. **Burden and seasonality of medically attended influenza like illness (ILI) in Ethiopia, 2012 to 2017**  
   Tadesse M. BMC Infectious Diseases 2020;20(1):No page numbers.

Background: The influenza virus spreads rapidly around the world in seasonal epidemics, resulting in significant morbidity and mortality. Influenza-related incidence data are limited in many countries in Africa despite established sentinel surveillance. This study aimed to address the information gap by estimating the burden and seasonality of medically attended influenza like illness in Ethiopia. <br/>Method(s): Influenza sentinel surveillance data collected from 3 influenza like illness (ILI) and 5 Severe Acute Respiratory Illness (SARI) sites from 2012 to 2017 was used for analysis. Descriptive statistics were applied for simple analysis. The proportion of medically attended influenza positive cases and incidence rate of ILI was determined using total admitted patients and catchment area population. Seasonality was estimated based on weekly trend of ILI and predicted threshold was done by applying the "Moving Epidemic Method (MEM)". <br/>Result(s): A total of 5715 medically attended influenza suspected patients who fulfills ILI and SARI case definition (77% ILI and 23% SARI) was enrolled. Laboratory confirmed influenza virus (influenza positive case) among ILI and SARI suspected case was 25% (1130/4426) and 3% (36/1289). Of which, 65% were influenza type A. The predominantly circulating influenza subtype were seasonal influenza A(H3N2) (n = 455, 60%) and Influenza A(H1N1)pdm09 (n = 293, 38.81%). The estimated mean annual influenza positive case proportion and ILI incidence rate was 160.04 and 52.48 per 100,000 population. The Incidence rate of ILI was higher in the age group of 15-44 years of age ['Incidence rate (R) = 254.6 per 100,000 population', 95% CI; 173.65, 335.55] and 5-14 years of age [R = 49.5, CI 95%; 31.47, 130.43]. The seasonality of influenza has two peak seasons; in a period from October-December and from April-June. <br/>Conclusion(s): Significant morbidity of influenza like illness was observed with two peak seasons of the year and seasonal influenza A (H3N2) remains the predominantly circulating influenza subtype. Further study need to be considered to identify potential risks and improving the surveillance system to continue early detection and monitoring of circulating influenza virus in the country has paramount importance.<br/>Copyright &#xa9; 2020 The Author(s).

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1. **Changes and Significance of Serum sB7-H3 and Cytokines in Children with Mycoplasma pneumonae Pneumonia.**  
   Wu Peng Journal of the College of Physicians and Surgeons--Pakistan : JCPSP 2020;30(3):268-271.

OBJECTIVETo explore the relationship between serum sB7-H3 and cytokines (TNF-α, IL-1β and IL-6) and to evaluate the development of Mycoplasma pneumonae pneumonia (MPP) through analysis of the expression levels of above indices in serum of children with MPP.STUDY DESIGNAn experimental study.PLACE AND DURATION OF STUDYDepartment of Clinical Laboratory, Renmin Hospital of Wuhan University, China, from January 2018 to August 2019.METHODOLOGYOne hundred and eight children with MPP were divided into severe MPP group (53 cases) and mild MPP group (55 cases) according to children's condition. Fifty children who received hernia or selective operation due to redundant prepuce were included in control group. Serum sB7-H3, TNF-α, IL-1β and IL-6 were compared.RESULTSSerum sB7-H3, TNF-α, IL-1β, and IL-6 levels in MPP group were higher than those in control group (all p<0.001); above indices in severe MPP group were higher than those in mild MPP group (all p<0.001). Pearson's linear correlation analysis results revealed that sB7-H3 had positive correlation with TNF-α, IL-1β, and IL-6 in MPP group (r=0.986, p<0.001; r=0.987, p<0.001; and r=0.991, p<0.001, respectively).CONCLUSIONDetection of SB7-H3, TNF-α, IL-1β and IL-6 levels may be conducive to early diagnosis of MPP and the judgement of the severity of this disease.

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1. **Characteristics of pediatric SARS-CoV-2 infection and potential evidence for persistent fecal viral shedding**  
   Xu Y. Nature Medicine 2020;:No page numbers.

We report epidemiological and clinical investigations on ten pediatric SARS-CoV-2 infection cases confirmed by real-time reverse transcription PCR assay of SARS-CoV-2 RNA. Symptoms in these cases were nonspecific and no children required respiratory support or intensive care. Chest X-rays lacked definite signs of pneumonia, a defining feature of the infection in adult cases. Notably, eight children persistently tested positive on rectal swabs even after nasopharyngeal testing was negative, raising the possibility of fecal-oral transmission.<br/>Copyright &#xa9; 2020, The Author(s), under exclusive licence to Springer Nature America, Inc.

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1. **Chest computed tomography in children with COVID-19 respiratory infection.**  
   Li Wei Pediatric radiology 2020;:No page numbers.

BACKGROUNDInfection with COVID-19 is currently rare in children.OBJECTIVETo describe chest CT findings in children with COVID-19.MATERIALS AND METHODSWe studied children at a large tertiary-care hospital in China, during the period from 28 January 2019 to 8 February 2020, who had positive reverse transcriptase polymerase chain reaction (RT-PCR) for COVID-19. We recorded findings at any chest CT performed in the included children, along with core clinical observations.RESULTSWe included five children from 10 months to 6 years of age (mean 3.4 years). All had had at least one CT scan after admission. Three of these five had CT abnormality on the first CT scan (at 2 days, 4 days and 9 days, respectively, after onset of symptoms) in the form of patchy ground-glass opacities; all normalised during treatment.CONCLUSIONCompared to reports in adults, we found similar but more modest lung abnormalities at CT in our small paediatric cohort.

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1. **Clinical analysis of 10 neonates born to mothers with 2019-nCoV pneumonia.**  
   Zhu Huaping Translational pediatrics 2020;9(1):51-60.

BackgroundThe newly identified 2019-nCoV, which appears to have originated in Wuhan, the capital city of Hubei province in central China, is spreading rapidly nationwide. A number of cases of neonates born to mothers with 2019-nCoV pneumonia have been recorded. However, the clinical features of these cases have not been reported, and there is no sufficient evidence for the proper prevention and control of 2019-nCoV infections in neonates.MethodsThe clinical features and outcomes of 10 neonates (including 2 twins) born to 9 mothers with confirmed 2019-nCoV infection in 5 hospitals from January 20 to February 5, 2020 were retrospectively analyzed.ResultsAmong these 9 pregnant women with confirmed 2019-nCoV infection, onset of clinical symptoms occurred before delivery in 4 cases, on the day of delivery in 2 cases, and after delivery in 3 cases. In most cases, fever and a cough were the first symptoms experienced, and 1 patient also had diarrhea. Of the newborns born to these mothers, 8 were male and 2 were female; 4 were full-term infants and 6 were born premature; 2 were small-for-gestational-age (SGA) infants and 1 was a large-for-gestational-age (LGA) infant; there were 8 singletons and 2 twins. Of the neonates, 6 had a Pediatric Critical Illness Score (PCIS) score of less than 90. Clinically, the first symptom in the neonates was shortness of breath (n=6), but other initial symptoms such as fever (n=2), thrombocytopenia accompanied by abnormal liver function (n=2), rapid heart rate (n=1), vomiting (n=1), and pneumothorax (n=1) were observed. Up to now, 5 neonates have been cured and discharged, 1 has died, and 4 neonates remain in hospital in a stable condition. Pharyngeal swab specimens were collected from 9 of the 10 neonates 1 to 9 days after birth for nucleic acid amplification tests for 2019-nCoV, all of which showed negative results.ConclusionsPerinatal 2019-nCoV infection may have adverse effects on newborns, causing problems such as fetal distress, premature labor, respiratory distress, thrombocytopenia accompanied by abnormal liver function, and even death. However, vertical transmission of 2019-nCoV is yet to be confirmed.

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1. **Clinical analysis of pregnant women with 2019 novel coronavirus pneumonia.**  
   Chen Siyu Journal of medical virology 2020;:No page numbers.

OBJECTIVETo evaluate the pregnant women infected with coronavirus disease 2019 (COVID-19) and provide help for clinical prevention and treatment.METHODSAll 5 cases of pregnant women confirmed COVID-19 were collected among patients who admitted in Maternal and Child Hospital of Hubei Province between January 20 and February 10, 2020.RESULTSAll patients, aging from 25 to 31 years old, had the gestational week from 38th weeks to 41st weeks. All pregnant women did not have an antepartum fever but developed a low-grade fever (37.5-38.5℃) within 24 hours after delivery. All patients had normal liver and renal function, two patients had elevated plasma levels of the myocardial enzyme. Unusual chest imaging manifestations, featured with ground-grass opacity, were frequently observed in bilateral (3 cases) or unilateral lobe (2 cases) by computed tomography (CT) scan. All labors smoothly processed, the Apgar scores were 10 one and five minutes after delivery, no complications were observed in the newborn.INTERPRETATIONPregnancy and perinatal outcomes of patients with COVID-19 should receive more attention. It is probable that pregnant women diagnosed with COVID-19 have no fever before delivery. Their primary initial manifestations were merely low-grade postpartum fever or mild respiratory symptoms. Therefore, the protective measures are necessary on admission; the instant CT scan and real-time reverse-transcriptase polymerase-chain-reaction (RT-PCR) assay should be helpful in early diagnosis and avoid cross-infection on the occasion that patients have fever and other respiratory signs. This article is protected by copyright. All rights reserved.

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1. **Clinical and biochemical indexes from 2019-nCoV infected patients linked to viral loads and lung injury.**  
   Liu Yingxia Science China. Life sciences 2020;63(3):364-374.

The outbreak of the 2019-nCoV infection began in December 2019 in Wuhan, Hubei province, and rapidly spread to many provinces in China as well as other countries. Here we report the epidemiological, clinical, laboratory, and radiological characteristics, as well as potential biomarkers for predicting disease severity in 2019-nCoV-infected patients in Shenzhen, China. All 12 cases of the 2019-nCoV-infected patients developed pneumonia and half of them developed acute respiratory distress syndrome (ARDS). The most common laboratory abnormalities were hypoalbuminemia, lymphopenia, decreased percentage of lymphocytes (LYM) and neutrophils (NEU), elevated C-reactive protein (CRP) and lactate dehydrogenase (LDH), and decreased CD8 count. The viral load of 2019-nCoV detected from patient respiratory tracts was positively linked to lung disease severity. ALB, LYM, LYM (%), LDH, NEU (%), and CRP were highly correlated to the acute lung injury. Age, viral load, lung injury score, and blood biochemistry indexes, albumin (ALB), CRP, LDH, LYM (%), LYM, and NEU (%), may be predictors of disease severity. Moreover, the Angiotensin II level in the plasma sample from 2019-nCoV infected patients was markedly elevated and linearly associated to viral load and lung injury. Our results suggest a number of potential diagnosis biomarkers and angiotensin receptor blocker (ARB) drugs for potential repurposing treatment of 2019-nCoV infection.

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1. **Clinical and coagulation characteristics of 7 patients with critical COVID-2019 pneumonia and acro-ischemia**  
   Zhang Y. Zhonghua xue ye xue za zhi = Zhonghua xueyexue zazhi 2020;41:No page numbers.

Objective: To investigate the clinical and coagulation characteristics of the critical Coronavirus disease 2019 (COVID-19) patients with acro-ischemia in the intensive care unit (ICU). <br/>Method(s): The retrospective study included 7 critical COVID-19 patients with acro-ischemia in a single center in Wuhan, from Feb 4 to Feb 15, 2020. The clinical and laboratory data before and during the ICU stay were analyzed. <br/>Result(s): The median age of 7 patients was 59 years and 4 of them were men. 3 of them were associated with underlying comorbidities. Fever, cough, dyspnea and diarrhea were common clinical symptoms. All patients had acro-ischemia presentations including finger/toe cyanosis, skin bulla and dry gangrene. D-dimer, fibrinogen and fibrinogen degradation product (FDP) were significantly elevated in most patients. Prothrombin time (PT) were prolonged in 4 patients. D-dimer and FDP levels increased progressively when COVID-2019 exacerbated, and 4 patients were diagnosed with definite disseminated intravascular coagulation (DIC). 6 patients received low molecular weight heparin (LMWH) treatment, after which their D-dimer and FDP decreased, but there was no significant improvement in clinical symptoms. 5 patients died finally and the median time from acro-ischemia to death was 12 days. <br/>Conclusion(s): The existence of hypercoagulation status in critical COVID-2019 patients should be monitored closely, and anticoagulation therapy can be considered in selected patients. More clinical data is needed to investigate the role of anticoagulation in COVID-2019 treatment.

1. **Clinical and CT features in pediatric patients with COVID-19 infection: Different points from adults.**  
   Xia Wei Pediatric pulmonology 2020;:No page numbers.

PURPOSETo discuss the different characteristics of clinical, laboratory, and chest computed tomography (CT) in pediatric patients from adults with 2019 novel coronavirus (COVID-19) infection.METHODSThe clinical, laboratory, and chest CT features of 20 pediatric inpatients with COVID-19 infection confirmed by pharyngeal swab COVID-19 nucleic acid test were retrospectively analyzed during 23 January and 8 February 2020. The clinical and laboratory information was obtained from inpatient records. All the patients were undergone chest CT in our hospital.RESULTSThirteen pediatric patients (13/20, 65%) had an identified history of close contact with COVID-19 diagnosed family members. Fever (12/20, 60%) and cough (13/20, 65%) were the most common symptoms. For laboratory findings, procalcitonin elevation (16/20, 80%) should be pay attention to, which is not common in adults. Coinfection (8/20, 40%) is common in pediatric patients. A total of 6 patients presented with unilateral pulmonary lesions (6/20, 30%), 10 with bilateral pulmonary lesions (10/20, 50%), and 4 cases showed no abnormality on chest CT (4/20, 20%). Consolidation with surrounding halo sign was observed in 10 patients (10/20, 50%), ground-glass opacities were observed in 12 patients (12/20, 60%), fine mesh shadow was observed in 4 patients (4/20, 20%), and tiny nodules were observed in 3 patients (3/20, 15%).CONCLUSIONProcalcitonin elevation and consolidation with surrounding halo signs were common in pediatric patients which were different from adults. It is suggested that underlying coinfection may be more common in pediatrics, and the consolidation with surrounding halo sign which is considered as a typical sign in pediatric patients.

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1. **Clinical and CT imaging features of the COVID-19 pneumonia: Focus on pregnant women and children.**  
   Liu Huanhuan The Journal of infection 2020;:No page numbers.

BACKGROUNDThe ongoing outbreak of COVID-19 pneumonia is globally concerning. We aimed to investigate the clinical and CT features in the pregnant women and children with this disease, which have not been well reported.METHODSClinical and CT data of 59 patients with COVID-19 from January 27 to February 14, 2020 were retrospectively reviewed, including 14 laboratory-confirmed non-pregnant adults, 16 laboratory-confirmed and 25 clinically-diagnosed pregnant women, and 4 laboratory-confirmed children. The clinical and CT features were analyzed and compared.FINDINGSCompared with the non-pregnant adults group (n = 14), initial normal body temperature (9 [56%] and 16 [64%]), leukocytosis (8 [50%] and 9 [36%]) and elevated neutrophil ratio (14 [88%] and 20 [80%]), and lymphopenia (9 [56%] and 16 [64%]) were more common in the laboratory-confirmed (n = 16) and clinically-diagnosed (n = 25) pregnant groups. Totally 614 lesions were detected with predominantly peripheral and bilateral distributions in 54 (98%) and 37 (67%) patients, respectively. Pure ground-glass opacity (GGO) was the predominant presence in 94/131 (72%) lesions for the non-pregnant adults. Mixed consolidation and complete consolidation were more common in the laboratory-confirmed (70/161 [43%]) and clinically-diagnosed (153/322 [48%]) pregnant groups than 37/131 (28%) in the non-pregnant adults (P = 0·007, P < 0·001). GGO with reticulation was less common in 9/161 (6%) and 16/322 (5%) lesions for the two pregnant groups than 24/131 (18%) for the non-pregnant adults (P = 0·001, P < 0·001). The pulmonary involvement in children with COVID-19 was mild with a focal GGO or consolidation. Twenty-three patients underwent follow-up CT, revealing progression in 9/13 (69%) at 3 days whereas improvement in 8/10 (80%) at 6-9 days after initial CT scans.INTERPRETATIONAtypical clinical findings of pregnant women with COVID-19 could increase the difficulty in initial identification. Consolidation was more common in the pregnant groups. The clinically-diagnosed cases were vulnerable to more pulmonary involvement. CT was the modality of choice for early detection, severity assessment, and timely therapeutic effects evaluation for the cases with epidemic and clinical features of COVID-19 with or without laboratory confirmation. The exposure history and clinical symptoms were more helpful for screening in children versus chest CT.

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1. **Clinical and epidemiological features of 36 children with coronavirus disease 2019 (COVID-19) in Zhejiang, China: an observational cohort study.**  
   Qiu Haiyan The Lancet. Infectious diseases 2020;:No page numbers.

BACKGROUNDSince December, 2019, an outbreak of coronavirus disease 2019 (COVID-19) has spread globally. Little is known about the epidemiological and clinical features of paediatric patients with COVID-19.METHODSWe retrospectively retrieved data for paediatric patients (aged 0-16 years) with confirmed COVID-19 from electronic medical records in three hospitals in Zhejiang, China. We recorded patients' epidemiological and clinical features.FINDINGSFrom Jan 17 to March 1, 2020, 36 children (mean age 8·3 [SD 3·5] years) were identified to be infected with severe acute respiratory syndrome coronavirus 2. The route of transmission was by close contact with family members (32 [89%]) or a history of exposure to the epidemic area (12 [33%]); eight (22%) patients had both exposures. 19 (53%) patients had moderate clinical type with pneumonia; 17 (47%) had mild clinical type and either were asymptomatic (ten [28%]) or had acute upper respiratory symptoms (seven [19%]). Common symptoms on admission were fever (13 [36%]) and dry cough (seven [19%]). Of those with fever, four (11%) had a body temperature of 38·5°C or higher, and nine (25%) had a body temperature of 37·5-38·5°C. Typical abnormal laboratory findings were elevated creatine kinase MB (11 [31%]), decreased lymphocytes (11 [31%]), leucopenia (seven [19%]), and elevated procalcitonin (six [17%]). Besides radiographic presentations, variables that were associated significantly with severity of COVID-19 were decreased lymphocytes, elevated body temperature, and high levels of procalcitonin, D-dimer, and creatine kinase MB. All children received interferon alfa by aerosolisation twice a day, 14 (39%) received lopinavir-ritonavir syrup twice a day, and six (17%) needed oxygen inhalation. Mean time in hospital was 14 (SD 3) days. By Feb 28, 2020, all patients were cured.INTERPRETATIONAlthough all paediatric patients in our cohort had mild or moderate type of COVID-19, the large proportion of asymptomatic children indicates the difficulty in identifying paediatric patients who do not have clear epidemiological information, leading to a dangerous situation in community-acquired infections.FUNDINGNingbo Clinical Research Center for Children's Health and Diseases, Ningbo Reproductive Medicine Centre, and Key Scientific and Technological Innovation Projects of Wenzhou.

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1. **Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records.**  
   Chen Huijun Lancet (London, England) 2020;395(10226):809-815.

BACKGROUNDPrevious studies on the pneumonia outbreak caused by the 2019 novel coronavirus disease (COVID-19) were based on information from the general population. Limited data are available for pregnant women with COVID-19 pneumonia. This study aimed to evaluate the clinical characteristics of COVID-19 in pregnancy and the intrauterine vertical transmission potential of COVID-19 infection.METHODSClinical records, laboratory results, and chest CT scans were retrospectively reviewed for nine pregnant women with laboratory-confirmed COVID-19 pneumonia (ie, with maternal throat swab samples that were positive for severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]) who were admitted to Zhongnan Hospital of Wuhan University, Wuhan, China, from Jan 20 to Jan 31, 2020. Evidence of intrauterine vertical transmission was assessed by testing for the presence of SARS-CoV-2 in amniotic fluid, cord blood, and neonatal throat swab samples. Breastmilk samples were also collected and tested from patients after the first lactation.FINDINGSAll nine patients had a caesarean section in their third trimester. Seven patients presented with a fever. Other symptoms, including cough (in four of nine patients), myalgia (in three), sore throat (in two), and malaise (in two), were also observed. Fetal distress was monitored in two cases. Five of nine patients had lymphopenia (<1·0 × 10⁹ cells per L). Three patients had increased aminotransferase concentrations. None of the patients developed severe COVID-19 pneumonia or died, as of Feb 4, 2020. Nine livebirths were recorded. No neonatal asphyxia was observed in newborn babies. All nine livebirths had a 1-min Apgar score of 8-9 and a 5-min Apgar score of 9-10. Amniotic fluid, cord blood, neonatal throat swab, and breastmilk samples from six patients were tested for SARS-CoV-2, and all samples tested negative for the virus.INTERPRETATIONThe clinical characteristics of COVID-19 pneumonia in pregnant women were similar to those reported for non-pregnant adult patients who developed COVID-19 pneumonia. Findings from this small group of cases suggest that there is currently no evidence for intrauterine infection caused by vertical transmission in women who develop COVID-19 pneumonia in late pregnancy.FUNDINGHubei Science and Technology Plan, Wuhan University Medical Development Plan.

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1. **Clinical characteristics of 24 asymptomatic infections with COVID-19 screened among close contacts in Nanjing, China**  
   Hu Z. Science China. Life sciences 2020;:No page numbers.

Previous studies have showed clinical characteristics of patients with the 2019 novel coronavirus disease (COVID-19) and the evidence of person-to-person transmission. Limited data are available for asymptomatic infections. This study aims to present the clinical characteristics of 24 cases with asymptomatic infection screened from close contacts and to show the transmission potential of asymptomatic COVID-19 virus carriers. Epidemiological investigations were conducted among all close contacts of COVID-19 patients (or suspected patients) in Nanjing, Jiangsu Province, China, from Jan 28 to Feb 9, 2020, both in clinic and in community. Asymptomatic carriers were laboratory-confirmed positive for the COVID-19 virus by testing the nucleic acid of the pharyngeal swab samples. Their clinical records, laboratory assessments, and chest CT scans were reviewed. As a result, none of the 24 asymptomatic cases presented any obvious symptoms while nucleic acid screening. Five cases (20.8%) developed symptoms (fever, cough, fatigue, etc.) during hospitalization. Twelve (50.0%) cases showed typical CT images of ground-glass chest and 5 (20.8%) presented stripe shadowing in the lungs. The remaining 7 (29.2%) cases showed normal CT image and had no symptoms during hospitalization. These 7 cases were younger (median age: 14.0 years; P=0.012) than the rest. None of the 24 cases developed severe COVID-19 pneumonia or died. The median communicable period, defined as the interval from the first day of positive nucleic acid tests to the first day of continuous negative tests, was 9.5 days (up to 21 days among the 24 asymptomatic cases). Through epidemiological investigation, we observed a typical asymptomatic transmission to the cohabiting family members, which even caused severe COVID-19 pneumonia. Overall, the asymptomatic carriers identified from close contacts were prone to be mildly ill during hospitalization. However, the communicable period could be up to three weeks and the communicated patients could develop severe illness. These results highlighted the importance of close contact tracing and longitudinally surveillance via virus nucleic acid tests. Further isolation recommendation and continuous nucleic acid tests may also be recommended to the patients discharged.

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1. **Clinical Characteristics of Children with Coronavirus Disease 2019 in Hubei, China.**  
   Zheng Fang Current medical science 2020;:No page numbers.

Since December 2019, COVID-19 has occurred unexpectedly and emerged as a health problem worldwide. Despite the rapidly increasing number of cases in subsequent weeks, the clinical characteristics of pediatric cases are rarely described. A cross-sectional multicenter study was carried out in 10 hospitals across Hubei province. A total of 25 confirmed pediatric cases of COVID-19 were collected. The demographic data, epidemiological history, underlying diseases, clinical manifestations, laboratory and radiological data, treatments, and outcomes were analyzed. Of 25 hospitalized patients with COVID-19, the boy to girl ratio was 1.27:1. The median age was 3 years. COVID-19 cases in children aged <3 years, 3.6 years, and ≥6-years patients were 10 (40%), 6 (24%), and 9 (36%), respectively. The most common symptoms at onset of illness were fever (13 [52%]), and dry cough (11 [44%]). Chest CT images showed essential normal in 8 cases (33.3%), unilateral involvement of lungs in 5 cases (20.8%), and bilateral involvement in 11 cases (45.8%). Clinical diagnoses included upper respiratory tract infection (n=8), mild pneumonia (n=15), and critical cases (n=2). Two critical cases (8%) were given invasive mechanical ventilation, corticosteroids, and immunoglobulin. The symptoms in 24 (96%) of 25 patients were alleviated and one patient had been discharged. It was concluded that children were susceptible to COVID-19 like adults, while the clinical presentations and outcomes were more favorable in children. However, children less than 3 years old accounted for majority cases and critical cases lied in this age group, which demanded extra attentions during home caring and hospitalization treatment.

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1. **Clinical features and obstetric and neonatal outcomes of pregnant patients with COVID-19 in Wuhan, China: a retrospective, single-centre, descriptive study**  
   Yu N. The Lancet. Infectious diseases 2020;:No page numbers.

BACKGROUND: In December, 2019, coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in Wuhan, China. The number of affected pregnant women is increasing, but scarce information is available about the clinical features of COVID-19 in pregnancy. This study aimed to clarify the clinical features and obstetric and neonatal outcomes of pregnant patients with COVID-19. <br/>METHOD(S): In this retrospective, single-centre study, we included all pregnant women with COVID-19 who were admitted to Tongji Hospital in Wuhan, China. Clinical features, treatments, and maternal and fetal outcomes were assessed. FINDINGS: Seven patients, admitted to Tongji Hospital from Jan 1, to Feb 8, 2020, were included in our study. The mean age of the patients was 32 years (range 29-34 years) and the mean gestational age was 39 weeks plus 1 day (range 37 weeks to 41 weeks plus 2 days). Clinical manifestations were fever (six [86%] patients), cough (one [14%] patient), shortness of breath (one [14%] patient), and diarrhoea (one [14%] patient). All the patients had caesarean section within 3 days of clinical presentation with an average gestational age of 39 weeks plus 2 days. The final date of follow-up was Feb 12, 2020. The outcomes of the pregnant women and neonates were good. Three neonates were tested for SARS-CoV-2 and one neonate was infected with SARS-CoV-2 36 h after birth. INTERPRETATION: The maternal, fetal, and neonatal outcomes of patients who were infected in late pregnancy appeared very good, and these outcomes were achieved with intensive, active management that might be the best practice in the absence of more robust data. The clinical characteristics of these patients with COVID-19 during pregnancy were similar to those of non-pregnant adults with COVID-19 that have been reported in the literature. FUNDING: National Natural Science Foundation of China, Hubei Provincial Natural Science Foundation of China.<br/>Copyright &#xa9; 2020 Elsevier Ltd. All rights reserved.

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1. **Clinical features of pediatric patients with COVID-19: a report of two family cluster cases.**  
   Ji Li-Na World journal of pediatrics : WJP 2020;:No page numbers.

BACKGROUNDCoronovirus disease 2019 (COVID-19) has spread rapidly across the globe. People of all ages are susceptible to COVID-19. However, literature reports on pediatric patients are limited.METHODSTo improve the recognition of COVID-19 infection in children, we retrospectively reviewed two confirmed pediatric cases from two family clusters. Both clinical features and laboratory examination results of the children and their family members were described.RESULTSThe two confirmed children only presented with mild respiratory or gastrointestinal symptoms. Both of them had normal chest CT images. After general and symptomatic treatments, both children recovered quickly. Both families had travel histories to Hubei Province.CONCLUSIONSPediatric patients with COVID-19 are mostly owing to family cluster or with a close contact history. Infected children have relatively milder clinical symptoms than infected adults. We should attach importance to early recognition, early diagnosis, and early treatment of infected children.

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1. **Clinical features of severe pediatric patients with coronavirus disease 2019 in Wuhan: a single center's observational study.**  
   Sun Dan World journal of pediatrics : WJP 2020;:No page numbers.

BACKGROUNDAn outbreak of coronavirus disease 2019 (COVID-19) caused by SARS-CoV-2 was first detected in Wuhan, Hubei, China. People of all ages are susceptible to SARS-CoV-2 infection. No information on severe pediatric patients with COVID-19 has been reported. We aimed to describe the clinical features of severe pediatric patients with COVID-19.METHODSWe included eight severe or critically ill patients with COVID-19 who were treated at the Intensive Care Unit (ICU), Wuhan Children's Hospital from January 24 to February 24. We collected information including demographic data, symptoms, imaging data, laboratory findings, treatments and clinical outcomes of the patients with severe COVID-19.RESULTSThe onset age of the eight patients ranged from 2 months to 15 years; six were boys. The most common symptoms were polypnea (8/8), followed by fever (6/8) and cough (6/8). Chest imaging showed multiple patch-like shadows in seven patients and ground-glass opacity in six. Laboratory findings revealed normal or increased whole blood counts (7/8), increased C-reactive protein, procalcitonin and lactate dehydrogenase (6/8), and abnormal liver function (4/8). Other findings included decreased CD16 + CD56 (4/8) and Th/Ts\*(1/8), increased CD3 (2/8), CD4 (4/8) and CD8 (1/8), IL-6 (2/8), IL-10 (5/8) and IFN-γ (2/8). Treatment modalities were focused on symptomatic and respiratory support. Two critically ill patients underwent invasive mechanical ventilation. Up to February 24, 2020, three patients remained under treatment in ICU, the other five recovered and were discharged home.CONCLUSIONSIn this series of severe pediatric patients in Wuhan, polypnea was the most common symptom, followed by fever and cough. Common imaging changes included multiple patch-like shadows and ground-glass opacity; and a cytokine storm was found in these patients, which appeared more serious in critically ill patients.

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1. **Clinical findings in a group of patients infected with the 2019 novel coronavirus (SARS-Cov-2) outside of Wuhan, China: retrospective case series.**  
   Xu Xiao-Wei BMJ (Clinical research ed.) 2020;368:m606.

OBJECTIVETo study the clinical characteristics of patients in Zhejiang province, China, infected with the 2019 severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) responsible for coronavirus disease 2019 (covid-2019).DESIGNRetrospective case series.SETTINGSeven hospitals in Zhejiang province, China.PARTICIPANTS62 patients admitted to hospital with laboratory confirmed SARS-Cov-2 infection. Data were collected from 10 January 2020 to 26 January 2020.MAIN OUTCOME MEASURESClinical data, collected using a standardised case report form, such as temperature, history of exposure, incubation period. If information was not clear, the working group in Hangzhou contacted the doctor responsible for treating the patient for clarification.RESULTSOf the 62 patients studied (median age 41 years), only one was admitted to an intensive care unit, and no patients died during the study. According to research, none of the infected patients in Zhejiang province were ever exposed to the Huanan seafood market, the original source of the virus; all studied cases were infected by human to human transmission. The most common symptoms at onset of illness were fever in 48 (77%) patients, cough in 50 (81%), expectoration in 35 (56%), headache in 21 (34%), myalgia or fatigue in 32 (52%), diarrhoea in 3 (8%), and haemoptysis in 2 (3%). Only two patients (3%) developed shortness of breath on admission. The median time from exposure to onset of illness was 4 days (interquartile range 3-5 days), and from onset of symptoms to first hospital admission was 2 (1-4) days.CONCLUSIONAs of early February 2020, compared with patients initially infected with SARS-Cov-2 in Wuhan, the symptoms of patients in Zhejiang province are relatively mild.

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1. **Clinical manifestations and risk factors of adenovirus respiratory infection in hospitalized children in Guangzhou, China during the 2011-2014 period.**  
   Wu Pei-Qiong Medicine 2020;99(4):e18584.

To evaluate epidemiology and risk factors of severe adenovirus respiratory infection in hospitalized children in Guangzhou, China.A retrospective review study was conducted, and 542 children hospitalized for adenovirus respiratory infection, were included from January 2011 to December 2014. Patients were younger than 14 years. Disease severity was classified into severe and mild. Laboratory tests and clinical characteristics were analyzed for risk factors of adenovirus respiratory infection by multivariable logistic regression.Among these 542 children, 92.1% were aged < 6 years. Clinical diagnoses were upper respiratory infections in 11.6%, bronchiolitis in 16%, and mild pneumonia in 62.0% of children. Severe pneumonia rate was 10.3% (56/542) with a mortality rate of 0.9% (5/542). The cohort comprised 542 patients; 486 patients with mild adenovirus respiratory infection and 56 patients with severe adenovirus respiratory infection. Multivariable logistic regression was used to confirm associations between variables and adenovirus respiratory infection, after age and gender adjustment. Hospital stay, still significantly associated with adenovirus respiratory infection. Patients with longer hospital stay (odds ratio [OR] = 1.20, 95% confidence interval [CI]: 1.13-1.28, P < .001), lower LYMPH (OR = 0.73 95% CI: 0.55-0.99, P = .039), and increased LDH (OR = 1.002, 95% CI: 1.001-1.003, P =  .001) had a higher risk of severe adenovirus respiratory infection.Adenovirus is a major pathogen in hospitalized children with respiratory infection. High serum LDH level and low lymphocyte count could be used as predictors of adenovirus respiratory infection severity in children.

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1. **Comparison of different samples for 2019 novel coronavirus detection by nucleic acid amplification tests**  
   Xie C. International Journal of Infectious Diseases 2020;93:264-267.

An ongoing outbreak of severe respiratory pneumonia associated with the 2019 novel coronavirus has recently emerged in China. Here we report the epidemiological, clinical, laboratory and radiological characteristics of 19 suspect cases. We compared the positive ratio of 2019-nCoV nucleic acid amplification test results from different samples including oropharyngeal swab, blood, urine and stool with 3 different fluorescent RT-PCR kits. Nine out of the 19 patients had 2019-nCoV infection detected using oropharyngeal swab samples, and the virus nucleic acid was also detected in eight of these nine patients using stool samples. None of positive results was identified in the blood and urine samples. These three different kits got the same result for each sample and the positive ratio of nucleic acid detection for 2019-nCoV was only 47.4% in the suspect patients. Therefore, it is possible that infected patients have been missed by using nucleic acid detection only. It might be better to make a diagnosis combining the computed tomography scans and nucleic acid detection.<br/>Copyright &#xa9; 2020 University of Electronic Science and Technology of China, Chengdu, China

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1. **Coronavirus Disease 2019 (COVID-19) and Pregnancy: Responding to a Rapidly Evolving Situation.**  
   Rasmussen Sonja A. Obstetrics and gynecology 2020;:No page numbers.

As the world confronts coronavirus disease 2019 (COVID-19), an illness caused by yet another emerging pathogen (severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]), obstetric care providers are asking what this means for pregnant women. The global spread has been swift, and many key questions remain. The case-fatality rate for persons cared for in the United States and whether asymptomatic persons transmit the virus are examples of questions that need to be answered to inform public health control measures. There are also unanswered questions specific to pregnant women, such as whether pregnant women are more severely affected and whether intrauterine transmission occurs. Although guidelines for pregnant women from the American College of Obstetricians and Gynecologists and the Centers for Disease Control and Prevention 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. As the situation with COVID-19 rapidly unfolds, it is critical that obstetricians keep up to date.

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1. **Coronavirus Disease 2019 (COVID-19) Pandemic and Pregnancy.**  
   Dashraath Pradip American journal of obstetrics and gynecology 2020;:No page numbers.

The current coronavirus disease 2019 (COVID-19) pneumonia pandemic, caused by the severe acute respiratory syndrome 2 (SARS-CoV-2) virus, is spreading globally at an accelerated rate, with a basic reproduction number (R0) of 2 - 2.5, indicating that 2 - 3 persons will be infected from an index patient. A serious public health emergency, it is particularly deadly in vulnerable populations and communities in which healthcare providers are insufficiently prepared to manage the infection. As of March 16, 2020, there are more than 180,000 confirmed cases of COVID-19 worldwide, with over 7,000 related deaths. The SARS-CoV-2 virus has been isolated from asymptomatic individuals, and affected patients continue to be infectious two weeks after cessation of symptoms. The substantial morbidity and socioeconomic impact have necessitated drastic measures across all continents, including nationwide lockdowns and border closures. Pregnant women and their fetuses represent a high-risk population during infectious disease outbreaks. To date, the outcomes of 55 pregnant women infected with COVID-19 and 46 neonates have been reported in the literature, with no definite evidence of vertical transmission. Physiological and mechanical changes in pregnancy increase susceptibility to infections in general, particularly when the cardiorespiratory system is affected, and encourage rapid progression to respiratory failure in the gravida. Furthermore, the pregnancy bias towards T-helper 2 (Th2) system dominance which protects the fetus, leaves the mother vulnerable to viral infections, which are more effectively contained by the Th1 system. These unique challenges mandate an integrated approach to pregnancies affected by SARS-CoV-2. Here we present a review of COVID-19 in pregnancy, bringing together the various factors integral to the understanding of pathophysiology and susceptibility, diagnostic challenges with real-time reverse transcriptase polymerase chain reaction (RT-PCR) assays, therapeutic controversies, intrauterine transmission and maternal-fetal complications. We discuss the latest options in antiviral therapy and vaccine development, including the novel use of chloroquine in the management of COVID-19. Fetal surveillance, in view of the predisposition to growth restriction and special considerations during labor and delivery are addressed. Additionally, we focus on keeping frontline obstetric care providers safe while continuing to provide essential services. Our clinical service model is built around the principles of workplace segregation, responsible social distancing, containment of cross-infection to healthcare providers, judicious use of personal protective equipment and telemedicine. Our aim is to share a framework which can be adopted by tertiary maternity units managing pregnant women in the flux of a pandemic while maintaining the safety of the patient and healthcare provider at its core.

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1. **COVID-19 patients' clinical characteristics, discharge rate, and fatality rate of meta-analysis.**  
   Li Long-Quan Journal of medical virology 2020;:No page numbers.

The aim of this study was to analyze the clinical data, discharge rate, and fatality rate of COVID-19 patients for clinical help. The clinical data of COVID-19 patients from December 2019 to February 2020 were retrieved from four databases. We statistically analyzed the clinical symptoms and laboratory results of COVID-19 patients and explained the discharge rate and fatality rate with a single-arm meta-analysis. The available data of 1994 patients in 10 literatures were included in our study. The main clinical symptoms of COVID-19 patients were fever (88.5%), cough (68.6%), myalgia or fatigue (35.8%), expectoration (28.2%), and dyspnea (21.9%). Minor symptoms include headache or dizziness (12.1%), diarrhea (4.8%), nausea and vomiting (3.9%). The results of the laboratory showed that the lymphocytopenia (64.5%), increase of C-reactive protein (44.3%), increase of lactic dehydrogenase (28.3%), and leukocytopenia (29.4%) were more common. The results of single-arm meta-analysis showed that the male took a larger percentage in the gender distribution of COVID-19 patients 60% (95% CI [0.54, 0.65]), the discharge rate of COVID-19 patients was 42% (95% CI [0.29, 0.55]), and the fatality rate was 5% (95% CI [0.01,0.11]).

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1. **COVID-19, Australia: Epidemiology Report 5 (Reporting week ending 19:00 AEDT 29 February 2020).**  
   COVID-19 National Incident Room Surveillance Team Communicable diseases intelligence (2018) 2020;44:No page numbers.

This is the fifth epidemiological report for coronavirus disease 2019 (COVID-19), reported in Australia as at 19:00 Australian Eastern Daylight Time [AEDT] 29 February 2020. It includes data on COVID-19 cases diagnosed in Australia, the international situation and a review of current evidence.

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1. **COVID-19, Australia: Epidemiology Report 6 (Reporting week ending 19:00 AEDT 7 March 2020).**  
   COVID-19 National Incident Room Surveillance Team Communicable diseases intelligence (2018) 2020;44:No page numbers.

This is the sixth epidemiological report for coronavirus disease 2019 (COVID-19), reported in Australia as at 19:00 Australian Eastern Daylight Time [AEDT] 7 March 2020. It includes data on COVID-19 cases diagnosed in Australia, the international situation and a review of current evidence.

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1. **COVID-19: what has been learned and to be learned about the novel coronavirus disease.**  
   Yi Ye International journal of biological sciences 2020;16(10):1753-1766.

The outbreak of Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome (SARS) coronavirus 2 (SARS-CoV-2), has thus far killed over 3,000 people and infected over 80,000 in China and elsewhere in the world, resulting in catastrophe for humans. Similar to its homologous virus, SARS-CoV, which caused SARS in thousands of people in 2003, SARS-CoV-2 might also be transmitted from the bats and causes similar symptoms through a similar mechanism. However, COVID-19 has lower severity and mortality than SARS but is much more transmissive and affects more elderly individuals than youth and more men than women. In response to the rapidly increasing number of publications on the emerging disease, this article attempts to provide a timely and comprehensive review of the swiftly developing research subject. We will cover the basics about the epidemiology, etiology, virology, diagnosis, treatment, prognosis, and prevention of the disease. Although many questions still require answers, we hope that this review helps in the understanding and eradication of the threatening disease.

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1. **CT manifestations of coronavirus disease-2019: A retrospective analysis of 73 cases by disease severity**  
   Liu K.-C. European Journal of Radiology 2020;126:No page numbers.

Purpose: To report CT features of coronavirus disease-2019 (COVID-19) in patients with various disease severity. <br/>Method(s): The CT manifestations and clinical data of 73 patients with COVID-19 were retrospectively collected in 6 hospitals from Jan 21 to Feb 3, 2020. We analyzed the initial and follow-up CT features of patients with disease severity, according to the Guidelines for the Diagnosis and Treatment of New Coronavirus Pneumonia. <br/>Result(s): Six patients (8%) were diagnosed as mild type pneumonia; these patients had no obvious abnormal CT findings or manifested mild changes of lung infection. All 43 patients (59 %) with common type presented unique or multiple ground-glass opacities (GGO) in the periphery of the lungs, with or without interlobular septal thickening. In the 21 patients (29 %) with severe type, extensive GGO and pulmonary consolidation were found in 16 cases (16/21, 76 %) and 5 cases (24 %), respectively. An extensive "white lung", with atelectasis and pleural effusion were found in critical type patients (3, 4%). On the resolutive phase of the disease, CT abnormalities showed complete resolution, or demonstrated residual linear opacities. <br/>Conclusion(s): Different CT features are seen according to disease severity, which can help COVID-19 stratification.<br/>Copyright &#xa9; 2020 The Author(s)

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1. **Delaying haematopoietic stem cell transplantation in children with viral respiratory infections reduces transplant-related mortality**  
   Ottaviano G. British Journal of Haematology 2020;188(4):560-569.

Viral respiratory infections (VRIs) contribute to the morbidity and transplant-related mortality (TRM) after allogeneic haematopoietic stem cell transplantation (HSCT) and strategies to prevent and treat VRIs are warranted. We monitored VRIs before and after transplant in children undergoing allogeneic HSCT with nasopharyngeal aspirates (NPA) and assessed the impact on clinical outcome. Between 2007 and 2017, 585 children underwent 620 allogeneic HSCT procedures. Out of 75 patients with a positive NPA screen (12%), transplant was delayed in 25 cases (33%), while 53 children started conditioning with a VRI. Patients undergoing HSCT with a positive NPA screen had a significantly lower overall survival (54% vs. 79%) and increased TRM (26% vs. 7%) compared to patients with a negative NPA. Patients with a positive NPA who delayed transplant and cleared the virus before conditioning had improved overall survival (90%) and lower TRM (5%). Pre-HSCT positive NPA was the only significant risk factor for progression to a lower respiratory tract infection and was a major risk factor for TRM. Transplant delay, whenever feasible, in case of a positive NPA screen for VRIs can positively impact on survival of children undergoing HSCT.<br/>Copyright &#xa9; 2019 British Society for Haematology and John Wiley & Sons Ltd

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1. **Detectable SARS-CoV-2 Viral RNA in Feces of Three Children during Recovery Period of COVID-19 Pneumonia.**  
   Zhang Tongqiang Journal of medical virology 2020;:No page numbers.

Coronavirus Disease 2019 (COVID-19) is a newly emerging infectious disease caused by a novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). After its first occurrence in Wuhan of China from December 2019, COVID-19 rapidly spread around the world. According to the World Health Organization (WHO) statement on March 13, 2020, there had been over 132,500 confirmed cases globally. Nevertheless, the case reports of children are rare, which result in the lack of evidence for preventing and controlling of children's infection. Here, we report 3 cases of SARS-CoV-2 infected children diagnosed from February 3 to February 17, 2020 in Tianjin, China. All of these three cases experienced mild illness and recovered soon after treatment, with the nucleic acid of throat swab turning negative within 14, 11, 7 days after diagnosis respectively. However, after been discharged, all the three cases were tested SARS-CoV-2 positive in the stool samples within 10 days, in spite of their remained negative nucleic acid in throat swab specimens. Therefore, it is necessary to be aware of the possibility of fecal-oral transmission of SARS-CoV-2 infection, especially for children cases. This article is protected by copyright. All rights reserved.

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1. **Development of a rapid immunochromatographic strip test for the detection of porcine epidemic diarrhea virus specific SIgA in colostrum**  
   Liu J. Journal of Virological Methods 2020;279:No page numbers.

Porcine epidemic diarrhea virus (PEDV) causes very high mortality in newborn piglets. The mucosal immune system in the gut must eliminate potential pathogens while maintaining a mutually beneficial relationship with the commensal microbiota. Antibodies derived from the secretory immunoglobulin A (SIgA) class, act as the first line of antigen-specific immunity in the gut by recognizing both pathogens and commensals. Therefore, the measurement of SIgA levels is an important index in evaluating PEDV infections and immune status. A simple and rapid method for the detection of PEDV-specific SIgA using an immunochromatographic test strip has been developed; incorporating a colloidal gold-labeled anti-SIgA secretory component (SC) mAb probe for the detection of anti-PEDV-specific SIgA in swine. On the strip, a gold-labeled anti-SIgA SC mAb was applied to a conjugate pad; purified PEDV particles and goat anti-mouse antibodies were blotted onto a nitrocellulose membrane to form the test and control lines, respectively. Results showed that the immunochromatographic test strip had high sensitivity and specificity. When compared with enzyme-linked immunosorbent assay, kappa value suggesting that the strip could be used to detect PEDV specific SIgA in colostrum samples. Furthermore, the strip assay is rapid and easy to perform with no requirement for professional-level skills or equipment. We found that the immunochromatographic test strip was a rapid, sensitive, and reliable method for the identification of PEDV specific SIgA, indicating its suitability for epidemiological surveillance as well as vaccine immunity when studying PEDV.<br/>Copyright &#xa9; 2020 Elsevier B.V.

1. **Diagnosis and treatment of 2019 novel coronavirus infection in children: a pressing issue.**  
   Shen Kun-Ling World journal of pediatrics : WJP 2020;:No page numbers.

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1. **Diagnosis and treatment recommendation for pediatric coronavirus disease-19**  
   Chen Z. Zhejiang da xue xue bao. Yi xue ban = Journal of Zhejiang University. Medical sciences 2020;49(1):1-8.

1. **Diagnosis and treatment recommendations for pediatric respiratory infection caused by the 2019 novel coronavirus.**  
   Chen Zhi-Min World journal of pediatrics : WJP 2020;:No page numbers.

Since December 2019, an epidemic caused by novel coronavirus (2019-nCoV) infection has occurred unexpectedly in China. As of 8 pm, 31 January 2020, more than 20 pediatric cases have been reported in China. Of these cases, ten patients were identified in Zhejiang Province, with an age of onset ranging from 112 days to 17 years. Following the latest National recommendations for diagnosis and treatment of pneumonia caused by 2019-nCoV (the 4th edition) and current status of clinical practice in Zhejiang Province, recommendations for the diagnosis and treatment of respiratory infection caused by 2019-nCoV for children were drafted by the National Clinical Research Center for Child Health, the National Children's Regional Medical Center, Children's Hospital, Zhejiang University School of Medicine to further standardize the protocol for diagnosis and treatment of respiratory infection in children caused by 2019-nCoV.

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1. **Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' consensus statement.**  
   Shen Kunling World journal of pediatrics : WJP 2020;:No page numbers.

Since the outbreak of 2019 novel coronavirus infection (2019-nCoV) in Wuhan City, China, by January 30, 2020, a total of 9692 confirmed cases and 15,238 suspected cases have been reported around 31 provinces or cities in China. Among the confirmed cases, 1527 were severe cases, 171 had recovered and been discharged at home, and 213 died. And among these cases, a total of 28 children aged from 1 month to 17 years have been reported in China. For standardizing prevention and management of 2019-nCoV infections in children, we called up an experts' committee to formulate this experts' consensus statement. This statement is based on the Novel Coronavirus Infection Pneumonia Diagnosis and Treatment Standards (the fourth edition) (National Health Committee) and other previous diagnosis and treatment strategies for pediatric virus infections. The present consensus statement summarizes current strategies on diagnosis, treatment, and prevention of 2019-nCoV infection in children.

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1. **Earlier maternal menarche is associated with shorter newborn telomere length**  
   Wang L. European Journal of Pediatrics 2020;:No page numbers.

The aim of our study was to investigate the relationship between maternal age at menarche and newborn telomere length which has been linked to lifespan and many age-related diseases. There were 734 mother-newborn pairs recruited from Wuhan Children's Hospital Wuhan, Hubei Province, China. Age at menarche was self-reported and categorized into three groups (&lt;= 12 years, 13 years, and &gt;= 14 years). Telomere length in cord blood was measured using quantitative real-time polymerase chain reaction and expressed as the ratio of telomere copy number to single-copy gene number (T/S). The mean age at menarche of 734 mothers was 13.1 (+/- 1.1) years and the adjusted geometric means in the T/S of newborn telomeres in the three groups were 0.693, 0.721, and 0.748 respectively. Earlier age at menarche (&lt;= 12 years), compared with later age at menarche &gt;= 14 years, was significantly associated with 7.32% (95% CI - 13.70%, - 0.23%) shorter telomere length in offspring after adjusting for potential confounders. <br/>Conclusion(s): Mothers with earlier age at menarche were more likely to give birth newborn with shorter telomere length. Our study provides evidences for the effect of earlier menarche on fetal telomere programming in offspring.What is Known:\* Newborn telomere length is considered an indicator of lifespan and health outcomes in later life.\* The adverse effects of earlier menarche age to their offspring have been found, but its relationship with newborn telomere length has not been assessed before.What is New:\* This is the first study to explore the relationship of maternal menarche age with newborn telomere length.\* We provided primary evidence that earlier maternal age at menarche was associated with shorter newborn telomere length.<br/>Copyright &#xa9; 2020, Springer-Verlag GmbH Germany, part of Springer Nature.

1. **Early epidemiological analysis of the coronavirus disease 2019 outbreak based on crowdsourced data: a population-level observational study**  
   Sun K. The Lancet Digital Health 2020;2(4):No page numbers.

Background: As the outbreak of coronavirus disease 2019 (COVID-19) progresses, epidemiological data are needed to guide situational awareness and intervention strategies. Here we describe efforts to compile and disseminate epidemiological information on COVID-19 from news media and social networks. <br/>Method(s): In this population-level observational study, we searched DXY.cn, a health-care-oriented social network that is currently streaming news reports on COVID-19 from local and national Chinese health agencies. We compiled a list of individual patients with COVID-19 and daily province-level case counts between Jan 13 and Jan 31, 2020, in China. We also compiled a list of internationally exported cases of COVID-19 from global news media sources (Kyodo News, The Straits Times, and CNN), national governments, and health authorities. We assessed trends in the epidemiology of COVID-19 and studied the outbreak progression across China, assessing delays between symptom onset, seeking care at a hospital or clinic, and reporting, before and after Jan 18, 2020, as awareness of the outbreak increased. All data were made publicly available in real time. <br/>Finding(s): We collected data for 507 patients with COVID-19 reported between Jan 13 and Jan 31, 2020, including 364 from mainland China and 143 from outside of China. 281 (55%) patients were male and the median age was 46 years (IQR 35-60). Few patients (13 [3%]) were younger than 15 years and the age profile of Chinese patients adjusted for baseline demographics confirmed a deficit of infections among children. Across the analysed period, delays between symptom onset and seeking care at a hospital or clinic were longer in Hubei province than in other provinces in mainland China and internationally. In mainland China, these delays decreased from 5 days before Jan 18, 2020, to 2 days thereafter until Jan 31, 2020 (p=0.0009). Although our sample captures only 507 (5.2%) of 9826 patients with COVID-19 reported by official sources during the analysed period, our data align with an official report published by Chinese authorities on Jan 28, 2020. <br/>Interpretation(s): News reports and social media can help reconstruct the progression of an outbreak and provide detailed patient-level data in the context of a health emergency. The availability of a central physician-oriented social network facilitated the compilation of publicly available COVID-19 data in China. As the outbreak progresses, social media and news reports will probably capture a diminishing fraction of COVID-19 cases globally due to reporting fatigue and overwhelmed health-care systems. In the early stages of an outbreak, availability of public datasets is important to encourage analytical efforts by independent teams and provide robust evidence to guide interventions. <br/>Funding(s): Fogarty International Center, US National Institutes of Health.<br/>Copyright &#xa9; 2020 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license

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1. **Early Epidemiological and Clinical Characteristics of 28 Cases of Coronavirus Disease in South Korea.**  
   COVID-19 National Emergency Response Center Epidemiology and Case Management Team Korea Centers for Disease Control and Prevention Osong public health and research perspectives 2020;11(1):8-14.

ObjectivesThe first confirmed case of coronavirus disease 2019 (COVID-19) in South Korea was reported in January 2020, with 28 confirmed cases reported as of February 14th, 2020. The epidemiological and clinical characteristics of all 28 cases were analyzed in response to this disease.MethodsThe epidemiological characteristics and early clinical features of the 28 patients from Korea with confirmed COVID-19 were analyzed using COVID-19 reporting and surveillance data and the epidemiological investigation reports prepared by the rapid response team.ResultsThere were 16 patients that entered Korea from foreign countries: Wuhan, China (11 patients), Zhuhai, China, (1 patient), Singapore (2 patients), Japan (1 patient), and Thailand (1 patient). The early symptoms were fever, sore throat, cough or sputum production, chills, and muscle ache. Three patients were asymptomatic, however, 18 developed pneumonia. Of the 28 cases, 16 were index cases imported from abroad, with 10 cases of secondary infection originating in Korea, and the route of transmission still under investigation for 2 patients. The 10 patients with secondary infection were infected from contact with family members or acquaintances of primary patients, and the suspected sites of transmission were mostly at home.ConclusionCOVID-19 in Korea was spread by 16 infected individuals traveling from other countries, leading to second-generation cases. The initial symptoms were mostly minor, but the disease was infectious at this stage, resulting from close contact, particularly at home. Establishing an early detection strategy for COVID-19 is crucial for managing the transmission of the disease.

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1. **Early pregnancy exposure to benzotriazoles and benzothiazoles in relation to gestational diabetes mellitus: A prospective cohort study**  
   Zhou Y. Environment International 2020;135:No page numbers.

Background: Benzotriazoles (BTRs) and benzothiazoles (BTHs) are emerging contaminants with potential insulin modulation activities. Pregnancy exposure to BTs (BTRs and BTHs) may be a risk factor for the development of gestational diabetes mellitus (GDM). However, epidemiological studies are limited. <br/>Objective(s): We prospectively investigated the associations of exposure to BTs at early pregnancy with the blood glucose levels and the risks of GDM. <br/>Method(s): A prospective cohort of 1770 pregnant women who were free of diabetes at baseline was established between 2013 and 2015 in Wuhan, China. Urine samples collected at 13.1 +/- 1.1 weeks of gestation were analyzed to estimate the exposure level of BTs. The diagnosis of GDM was based on a 75 g oral glucose tolerance test (OGTT) conducted at 26.4 +/- 2.4 weeks of gestation. We examined the associations between urinary concentration of BTs and blood glucose levels by linear regression models. The associations of urinary BTs concentrations with the relative risk (RR) of GDM were evaluated by generalized estimating equations with Poisson regression. Effect modifications by fetus sex and pre-pregnancy body mass index (BMI) were further evaluated in the sensitivity analysis. <br/>Result(s): A total of 147 (8.31%) pregnant women were diagnosed with GDM. Median concentrations of urinary BTs did not differ significantly between pregnant women with and without GDM. It was found that urinary levels of benzothiazole and 2-hydroxy-benzothiazole (2-OH-BTH) were positively associated with 2-hour blood glucose (p for trend &lt; 0.050). Comparing the high exposure group with the low exposure group of 2-OH-BTH, the adjusted RR of GDM was 1.79 (95% CI = 1.18 to 2.69, p for trend = 0.012). Sensitivity analysis indicated that the positive association of the urinary 2-OH-BTH level with the RR of GDM remained significant among pregnant women who had a male fetus (RR = 1.76, 95% CI = 1.02 to 3.03, p for trend = 0.041) and those with a normal pre-pregnancy BMI (RR = 1.85, 95% CI = 1.09 to 3.11, p for trend = 0.034). <br/>Conclusion(s): These findings suggested that higher urinary level of 2-OH-BTH in early pregnancy was associated with impaired glucose homeostasis and the increased risk of GDM. The results underscore the need of follow-up studies to validate the findings and elucidate the underlying biological mechanism.<br/>Copyright &#xa9; 2019 The Authors

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1. **Effect of TLR agonist on infections bronchitis virus replication and cytokine expression in embryonated chicken eggs**  
   Sharma B.K. Molecular Immunology 2020;120:52-60.

Avian infectious bronchitis (IB) is an acute, highly infectious and contagious viral disease of chickens caused by avian infectious bronchitis virus (IBV) belonging to the genus Coronavirus and family Coronaviridae. It can affect all age groups of birds. The toll-like receptors (TLRs) are a major class of innate immune pattern recognition receptors that have a key role in immune response and defense against various infections.The TLRs are essential for initiation of innate immune responses and in the development of adaptive immune responses. An in ovo model was employed to study the antiviral activity of TLR ligands (Pam3CSK4, LPS and CpG ODN) on replication of IBV. It was hypothesized that optimum dose and specific timing of TLR ligands may reduce viral load of IBV in specific pathogen free (SPF) embryonated chicken eggs (ECEs). Further, the mechanism involved in the TLR-mediated antiviral response in chorioallantoic membrane (CAM) of ECEs was investigated. The ECEs of 9-11 days old were treated with different doses (high, intermediate and low) of TLR-2 (Pam3CSK4), TLR-4 (LPS) and TLR-21 (CpG ODN) ligands. In addition, to know the timing of TLR ligand treatment, six time intervals were analyzed viz. 36, 24 and 12 h prior to infection, time of infection (co-administration of TLR ligands and avian IBV) and 12 and 24 h post-IBV infection. For studying the relative expression of immuno-stimulatory genes (IFN-alpha, IFN-beta, IFN-gamma, IL-1beta, iNOS and OAS) in CAM, TLR ligands were administered through intra-allantoicroute and CAM were collected at 4, 8 and 16 h post treatment. The results demonstrated that intermediate dose of all the three TLR ligands significantly reduced virus titers and used in the present study. However, the LPS reduced virus titer pre- and post-IBV infection but Pam3CSK4 and CpG ODN reduced only pre-IBV infection. Further analysis showed that TLR ligands induced IFN-gamma, IL-1beta and IFN stimulated genes viz. iNOS and OAS genes in CAM. The present study pointed towards the novel opportunities for rational design of LPS as immuno-stimulatory agent in chickens with reference to IBV. It may be speculated that in ovo administration of these TLR ligands may enhance resistance against viral infection in neonatal chicken and may contribute towards the development of more effective and safer vaccines including in ovo vaccines.<br/>Copyright &#xa9; 2020 Elsevier Ltd

1. **Efficacy of orally administered porcine epidemic diarrhea vaccine-loaded hydroxypropyl methylcellulose phthalate microspheres and RANKL-secreting L. lactis**  
   Choe S. Veterinary Microbiology 2020;242:No page numbers.

Here, we examined the efficacy of are combinant subunit antigen-based oral vaccine for preventing porcine epidemic diarrhea virus (PEDV). First, we generated a soluble recombinant partial spike S1 protein (aP2) from PEDV in E. coli and then evaluated the utility of aP2 subunit vaccine-loaded hydroxypropyl methylcellulose phthalate microspheres (HPMCP) and RANKL-secreting L. lactis (LLRANKL) as a candidate oral vaccine in pregnant sows. Pregnant sows were vaccinated twice (with a 2 week interval between doses) at 4 weeks before farrowing. Titers of virus-specific IgA antibodies in colostrum, and neutralizing antibodies in serum, of sows vaccinated with HPMCP (aP2) plus LL RANKL increased significantly at 4 weeks post-first vaccination. Furthermore, the survival rate of newborn suckling piglets delivered by sows vaccinated with HPMCP (aP2) plus LL RANKL was similar to that of piglets delivered by sows vaccinated with a commercial killed porcine epidemic diarrhea virus (PED) vaccine. The South Korean government promotes a PED vaccine program (live-killed-killed) to increase the titers of IgA and IgG antibodies in pregnant sows and prevent PEDV. The oral vaccine strategy described herein, which is based on a safe and efficient recombinant subunit antigen, is an alternative PED vaccination strategy that could replace the traditional strategy, which relies on attenuated live oral vaccines or artificial infection with virulent PEDV.<br/>Copyright &#xa9; 2020

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1. **Emerging 2019 Novel Coronavirus (2019-nCoV) Pneumonia.**  
   Song Fengxiang Radiology 2020;295(1):210-217.

BackgroundThe chest CT findings of patients with 2019 Novel Coronavirus (2019-nCoV) pneumonia have not previously been described in detail.PurposeTo investigate the clinical, laboratory, and imaging findings of emerging 2019-nCoV pneumonia in humans.Materials and MethodsFifty-one patients (25 men and 26 women; age range 16-76 years) with laboratory-confirmed 2019-nCoV infection by using real-time reverse transcription polymerase chain reaction underwent thin-section CT. The imaging findings, clinical data, and laboratory data were evaluated.ResultsFifty of 51 patients (98%) had a history of contact with individuals from the endemic center in Wuhan, China. Fever (49 of 51, 96%) and cough (24 of 51, 47%) were the most common symptoms. Most patients had a normal white blood cell count (37 of 51, 73%), neutrophil count (44 of 51, 86%), and either normal (17 of 51, 35%) or reduced (33 of 51, 65%) lymphocyte count. CT images showed pure ground-glass opacity (GGO) in 39 of 51 (77%) patients and GGO with reticular and/or interlobular septal thickening in 38 of 51 (75%) patients. GGO with consolidation was present in 30 of 51 (59%) patients, and pure consolidation was present in 28 of 51 (55%) patients. Forty-four of 51 (86%) patients had bilateral lung involvement, while 41 of 51 (80%) involved the posterior part of the lungs and 44 of 51 (86%) were peripheral. There were more consolidated lung lesions in patients 5 days or more from disease onset to CT scan versus 4 days or fewer (431 of 712 lesions vs 129 of 612 lesions; P < .001). Patients older than 50 years had more consolidated lung lesions than did those aged 50 years or younger (212 of 470 vs 198 of 854; P < .001). Follow-up CT in 13 patients showed improvement in seven (54%) patients and progression in four (31%) patients.ConclusionPatients with fever and/or cough and with conspicuous ground-glass opacity lesions in the peripheral and posterior lungs on CT images, combined with normal or decreased white blood cells and a history of epidemic exposure, are highly suspected of having 2019 Novel Coronavirus (2019-nCoV) pneumonia.© RSNA, 2020.

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1. **Epidemiological and Clinical Predictors of COVID-19**  
   Sun Y. Clinical infectious diseases : an official publication of the Infectious Diseases Society of America 2020;:No page numbers.

BACKGROUND: Rapid identification of COVID-19 cases, which is crucial to outbreak containment efforts, is challenging due to the lack of pathognomonic symptoms and in settings with limited capacity for specialized nucleic acid-based reverse transcription polymerase chain reaction (PCR) testing. <br/>METHOD(S): This retrospective case-control study involves subjects (7 to 98 years) presenting at the designated national outbreak screening centre and tertiary care hospital in Singapore for SARS-CoV-2 testing from January 26 to February 16, 2020. COVID-19 status was confirmed by PCR testing of sputum, nasopharyngeal swabs or throat swabs. Demographic, clinical, laboratory and exposure-risk variables ascertainable at presentation were analyzed to develop an algorithm for estimating the risk of COVID-19. Model development used Akaike's information criterion in a stepwise fashion to build logistic regression models, which were then translated into prediction scores. Performance was measured using receiver operating characteristics curves, adjusting for over-confidence using leave-out-one cross validation. <br/>RESULT(S): The study population included 788 subjects, of whom 54 (6.9%) were SARS-CoV-2 positive and 734 (93.1%) were SARS-CoV-2 negative. The median age was 34 years and 407 (51.7%) were female. Using leave-out-one cross validation, all the models incorporating clinical tests (Models 1, 2 and 3) performed well with areas under the receiver operating characteristics curve (AUC) of 0.91, 0.88 and 0.88 respectively. In comparison, Model 4 had an AUC of 0.65. <br/>CONCLUSION(S): Rapidly ascertainable clinical and laboratory data could identify individuals at high risk of COVID-19 and enable prioritization of PCR-testing and containment efforts. Basic laboratory test results were crucial to prediction models.<br/>Copyright &#xa9; The Author(s) 2020. Published by Oxford University Press for the Infectious Diseases Society of America. All rights reserved. For permissions, e-mail: journals.permissions@oup.com.

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1. **Epidemiological and genetic characteristics of human metapneumovirus in pediatric patients across six consecutive seasons in Beijing, China**  
   Zhu R. International Journal of Infectious Diseases 2020;91:137-142.

Objectives: To investigate the genetic characteristics of human metapneumovirus (hMPV) circulating among children with acute respiratory tract infections (ARTIs) in Beijing, China. <br/>Method(s): Clinical samples were obtained from outpatients and hospitalized children with ARTIs between August 2010 and July 2016. Reverse transcription polymerase chain reaction assays were used to screen and identify hMPV, while partial glycoprotein gene sequences were used for phylogenetic analysis. <br/>Result(s): Among the 10 918 samples, 292 (2.7%) were positive for hMPV. Overall, the virus was more prevalent among inpatients (4.3%) than outpatients (1.2%). A biennial alternating pattern of hMPV infection was observed, with infection rates fluctuating between 1.6% and 4.0%. Most cases were detected between December and April, showing clear-cut seasonality. Sub-genotypes A2b, B1, and B2 co-circulated in winter and spring in an alternating pattern, while only one A1-positive case was observed in 2012. The seasonal peak of hMPV was slightly delayed or overlapped with that of respiratory syncytial virus and influenza virus. hMPV activity increased in the 2010-2011 and 2014-2015 seasons, when influenza activity was apparently decreased compared with other epidemic seasons. <br/>Conclusion(s): This study provides information on the epidemiological and genetic characteristics of hMPV in children in Beijing, and reinforces the significance of hMPV in children with ARTIs, especially lower respiratory tract infections.<br/>Copyright &#xa9; 2019 The Authors

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1. **Evaluation of a multiplex PCR assay for detection of respiratory viruses and Mycoplasma pneumoniae in oropharyngeal swab samples from outpatients**  
   Zhang Y. Journal of Clinical Laboratory Analysis 2020;34(1):No page numbers.

Background: Respiratory viruses, such as influenza viruses, initially infect the upper airways but can manifest as severe lower respiratory tract infections in high-risk patients with significant morbidity and mortality. For syndromic diagnosis, several multiplex nucleic acid amplification tests have been developed for clinics, of which SureX 13 Respiratory Pathogen Multiplex Kit (ResP) can simultaneously detect 13 pathogens directly from airway secretion specimens. The organisms identified are influenza virus A, influenza virus A pdmH1N1 (2009), influenza virus A H3N2, influenza virus B, adenovirus, boca virus, rhinovirus, parainfluenza virus, coronavirus, respiratory syncytial virus, human metapneumovirus, Mycoplasma pneumoniae, and Chlamydia. <br/>Method(s): This study provides performance evaluation data of this assay by comparing with pathogen-specific PCRs from oropharyngeal swab samples. <br/>Result(s): Ten pathogens were detected in this assay, of which rhinovirus, adenovirus, and influenza virus A pdmH1N1 (2009) were the most common. The overall agreement between the ResP and the comparator tests was 93.8%. The ResP demonstrated 86.5% agreement for positive results and 97.8% agreement for negative results. <br/>Conclusion(s): The ResP assay demonstrated a highly concordant performance comparing with pathogen-specific PCRs for detection of respiratory pathogens in oropharyngeal swabs from outpatients and could aid in the diagnosis of respiratory infections in a variety of clinical scenarios.<br/>Copyright &#xa9; 2019 The Authors. Journal of Clinical Laboratory Analysis published by Wiley Periodicals, Inc.

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1. **Experience of Clinical Management for Pregnant Women and Newborns with Novel Coronavirus Pneumonia in Tongji Hospital, China.**  
   Wang Shao-Shuai Current medical science 2020;:No page numbers.

Based on the New Diagnosis and Treatment Scheme for Novel Coronavirus Infected Pneumonia (Trial Edition 5), combined with our current clinical treatment experience, we recently proposed a revision of the first edition of "Guidance for maternal and fetal management during pneumonia epidemics of novel coronavirus infection in the Wuhan Tongji Hospital". This article focused on the issues of greatest concern of pregnant women including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection diagnostic criteria, inspection precautions, drug treatment options, indications and methods of termination of pregnancy, postpartum fever, breastfeeding considerations, mode of mother-to-child transmission, neonatal isolation and advice on neonatal nursing, to provide valuable experience for better management of SARS-CoV-2 infection in pregnant women and newborns.

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1. **Expression Pattern Analysis of Antiviral Genes and Inflammatory Cytokines in PEDV-Infected Porcine Intestinal Epithelial Cells**  
   Wang S. Frontiers in Veterinary Science 2020;7:No page numbers.

Porcine diarrhea disease in newborn and suckling piglets due to infection with porcine epidemic diarrhea virus (PEDV) is a leading cause of economic loss in the pig industry globally. In this study, we investigated the molecular mechanism of the host innate immune response to PEDV infection. The expression dynamics of antiviral genes (e.g., RIG-1, PKR, OAS1, Mx1, and Mx2) and inflammatory cytokines (e.g., IFN-alpha, IFN-beta, TNF-alpha, IL-6, IL-8, and IL-12) in porcine small intestinal epithelial (IPEC-J2) cells were analyzed following PEDV stimulation. The results showed that the expression of antiviral genes (e.g., PKR, OAS1, and Mx2) and inflammatory cytokines (e.g., IFN-alpha and TNF-alpha) were significantly reduced within 0-4 h post-infection (P &lt; 0.05). However, all antiviral genes and inflammatory cytokines were up-regulated from 12 to 24 h (P &lt; 0.05), and cytopathic changes were observed during this time. The expression of RIG-1, PKR, OAS1, Mx1, and Mx2 were significantly and positively correlated to each other during the entire infection (P &lt; 0.01). The results suggested that the RIG-1, PKR, OAS1, Mx1, and Mx2 genes may play an important role in PEDV infection in piglets. Initially, PEDV displayed cellular invasion by inhibiting IFN-alpha transcription and interfering with the antiviral function of PKR, OAS1, and Mx2, ultimately induced an intense inflammatory response. The relationship between antiviral genes and inflammatory cytokines with PEDV infection at the cellular level provides a reference for studying the mechanism of resistance to PEDV infection in piglets.<br/>&#xa9; Copyright &#xa9; 2020 Wang, Wu, Wang, Wang, Wu, Wu and Bao.

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1. **False-Negative Results of Real-Time Reverse-Transcriptase Polymerase Chain Reaction for Severe Acute Respiratory Syndrome Coronavirus 2: Role of Deep-Learning-Based CT Diagnosis and Insights from Two Cases.**  
   Li Dasheng Korean journal of radiology 2020;21(4):505-508.

The epidemic of 2019 novel coronavirus, later named as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is still gradually spreading worldwide. The nucleic acid test or genetic sequencing serves as the gold standard method for confirmation of infection, yet several recent studies have reported false-negative results of real-time reverse-transcriptase polymerase chain reaction (rRT-PCR). Here, we report two representative false-negative cases and discuss the supplementary role of clinical data with rRT-PCR, including laboratory examination results and computed tomography features. Coinfection with SARS-COV-2 and other viruses has been discussed as well.

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1. **Genetic manipulation of porcine deltacoronavirus reveals insights into NS6 and NS7 functions: a novel strategy for vaccine design.**  
   Zhang Mengjia Emerging microbes & infections 2020;9(1):20-31.

Porcine deltacoronavirus (PDCoV) is an emerging swine coronavirus that causes severe diarrhea, resulting in high mortality in neonatal piglets. Despite widespread outbreaks in many countries, no effective PDCoV vaccines are currently available. Here, we generated, for the first time, a full-length infectious cDNA clone of PDCoV. We further manipulated the infectious clone by replacing the NS6 gene with a green fluorescent protein (GFP) to generate rPDCoV-ΔNS6-GFP; likewise, rPDCoV-ΔNS7 was constructed by removing the ATG start codons of the NS7 gene. Growth kinetics studies suggest that rPDCoV-ΔNS7 could replicate similarly to that of the wild-type PDCoV, whereas rPDCoV-ΔNS6-GFP exhibited a substantial reduction of viral titer in vitro and in vivo. Piglets inoculated with rPDCoV-ΔNS7 or wild-type PDCoV showed similar diarrheic scores and pathological injury. In contrast, rPDCoV-ΔNS6-GFP-infected piglets did not show any clinical signs, indicating that the NS6 protein is an important virulence factor of PDCoV and that the NS6-deficient mutant virus might be a promising live-attenuated vaccine candidate. Taken together, the reverse genetics platform described here not only provides more insights into the role of PDCoV accessory proteins in viral replication and pathogenesis, but also allows the development of novel vaccines against PDCoV infection.

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1. **High-Resolution Computed Tomography Manifestations of 5 Pediatric Patients With 2019 Novel Coronavirus**  
   Liu M. Journal of computer assisted tomography 2020;:No page numbers.

We present clinical and chest computed tomography (CT) features of 5 cases of pediatric patients with 2019 novel coronavirus. Two patients had fever and dry cough, whereas the rest of 3 patients were asymptomatic. Three patients had unilateral ground glass opacities with or without consolidation in the subpleural region on high-resolution chest CT, 1 patient had bilateral ground glass opacities, and 1 patient was negative for CT. We note that up to 66.7% asymptomatic patients had pulmonary lesions, so the asymptomatic children with Wuhan contact are recommended to do a 2019 novel coronavirus real-time fluorescence polymerase chain reaction screening. Unlike adult patients, only a small amount of patients had multilobes affected, so we speculate that the pediatric patients generally have milder CT findings than adults.

1. **High-resolution computed tomography manifestations of COVID-19 infections in patients of different ages**  
   Chen Z. European Journal of Radiology 2020;126:No page numbers.

Purpose: We aimed to compare chest HRCT lung signs identified in scans of differently aged patients with COVID-19 infections. <br/>Method(s): Case data of patients diagnosed with COVID-19 infection in Hangzhou City, Zhejiang Province in China were collected, and chest HRCT signs of infected patients in four age groups (&lt;18 years, 18-44 years, 45-59 years, &gt;=60 years) were compared. <br/>Result(s): Small patchy, ground-glass opacity (GGO), and consolidations were the main HRCT signs in 98 patients with confirmed COVID-19 infections. Patients aged 45-59 years and aged &gt;=60 years had more bilateral lung, lung lobe, and lung field involvement, and greater lesion numbers than patients &lt;18 years. GGO accompanied with the interlobular septa thickening or a crazy-paving pattern, consolidation, and air bronchogram sign were more common in patients aged 45-59 years, and &gt;=60 years, than in those aged &lt;18 years, and aged 18-44 years. <br/>Conclusion(s): Chest HRCT manifestations in patients with COVID-19 are related to patient's age, and HRCT signs may be milder in younger patients.<br/>Copyright &#xa9; 2020 Elsevier B.V.

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1. **Host AAA+ ATPase TER94 Plays Critical Roles in Building the Baculovirus Viral Replication Factory and Virion Morphogenesis**  
   Li Y. Journal of virology 2020;94(6):No page numbers.

TER94 is a multifunctional AAA+ ATPase crucial for diverse cellular processes, especially protein quality control and chromatin dynamics in eukaryotic organisms. Many viruses, including coronavirus, herpesvirus, and retrovirus, coopt host cellular TER94 for optimal viral invasion and replication. Previous proteomics analysis identified the association of TER94 with the budded virions (BVs) of baculovirus, an enveloped insect large DNA virus. Here, the role of TER94 in the prototypic baculovirus Autographa californica multiple nucleopolyhedrovirus (AcMNPV) life cycle was investigated. In virus-infected cells, TER94 accumulated in virogenic stroma (VS) at the early stage of infection and subsequently partially rearranged in the ring zone region. In the virions, TER94 was associated with the nucleocapsids of both BV and occlusion-derived virus (ODV). Inhibition of TER94 ATPase activity significantly reduced viral DNA replication and BV production. Electron/immunoelectron microscopy revealed that inhibition of TER94 resulted in the trapping of nucleocapsids within cytoplasmic vacuoles at the nuclear periphery for BV formation and blockage of ODV envelopment at a premature stage within infected nuclei, which appeared highly consistent with its pivotal function in membrane biogenesis. Further analyses showed that TER94 was recruited to the VS or subnuclear structures through interaction with viral early proteins LEF3 and helicase, whereas inhibition of TER94 activity blocked the proper localization of replication-related viral proteins and morphogenesis of VS, providing an explanation for its role in viral DNA replication. Taken together, these data indicated the crucial functions of TER94 at multiple steps of the baculovirus life cycle, including genome replication, BV formation, and ODV morphogenesis.IMPORTANCE TER94 constitutes an important AAA+ ATPase that associates with diverse cellular processes, including protein quality control, membrane fusion of the Golgi apparatus and endoplasmic reticulum network, nuclear envelope reformation, and DNA replication. To date, little is known regarding the role(s) of TER94 in the baculovirus life cycle. In this study, TER94 was found to play a crucial role in multiple steps of baculovirus infection, including viral DNA replication and BV and ODV formation. Further evidence showed that the membrane fission/fusion function of TER94 is likely to be exploited by baculovirus for virion morphogenesis. Moreover, TER94 could interact with the viral early proteins LEF3 and helicase to transport and further recruit viral replication-related proteins to establish viral replication factories. This study highlights the critical roles of TER94 as an energy-supplying chaperon in the baculovirus life cycle and enriches our knowledge regarding the biological function of this important host factor.<br/>Copyright &#xa9; 2020 American Society for Microbiology.

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1. **Human coronavirus OC43 and other respiratory viruses from acute respiratory infections of Egyptian children**  
   Naga I.S. Acta microbiologica et immunologica Hungarica 2020;:1-8.

Respiratory infections have a significant impact on health worldwide. Viruses are major causes of acute respiratory infections among children. Limited information regarding its prevalence in Egypt is available. This study investigated prevalence of 10 respiratory viruses; Adenovirus, influenza A, B, respiratory syncytial virus (RSV), Parainfluenza virus (PIV)type 1-4, enterovirus, and human coronavirus OC43 (HCoV-OC43) among children in Alexandria, Egypt presenting with acute lower respiratory tract infections. The study was conducted on children &lt;14 years of age selected from ElShatby Pediatric Hospital, Alexandria University, Egypt. One hundred children presenting during winter season with influenza-like illness were eligible for the study. Oropharyngeal swabs were collected and subjected to viral RNA and DNA extraction followed by polymerase chain reaction. Viral infections were detected in 44% of cases. Adenovirus was the most common, it was found in 19% of the patients. Prevalence of PIV (3 and 4) and enterovirus was 7% each. Prevalence of RSV and HCoV-OC43 was 5% and 3% respectively. Two percentage were Influenza A positive and 1% positive for influenza B. Mixed viral infection was observed in 7%. To the best of our knowledge, this is the first report of the isolation of HCoV-OC43 from respiratory infections in Alexandria, Egypt.

1. **Imaging diagnosis of acute necrotizing encephalopathy of childhood**  
   Tian Z. Chinese Journal of Radiology (China) 2020;54(3):230-234.

Objective: To analyze the imaging features of acute necrotizing encephalopathy of childhood (ANEC), and try to investigate its potential clinical value. <br/>Method(s): The clinical and imaging findings of 22 children from Wuhan Children's Hospital diagnosed with ANEC were retrospective analyzed, from January 2013 to October 2018. All children were presented with hyperpyrexia and rapidly developed into rapid neurological deterioration after prodromic infection. In the initial imaging examination, all patients underwent head MRI, and 6 cases underwent additional head CT. During MRI follow-up, 4 cases were lost, 6 cases were followed up only once (&lt;14 days), and 12 cases were followed up 1 to 2 times at short-term and 1 to 4 times at long-term (&gt;14 days).The presence of hemorrhage and encephalomalacia in thalamus, brainstem, white matter and basal ganglia was carefully investigated throughout the follow-up. <br/>Result(s): For the imaging manifestations of ANEC, bilateral thalamus were involved in all children. Other symmetrical lesions included white matter (14 cases), basal ganglia (15 cases), brainstem (16 cases), cerebellum (9 cases), corpus callosum (2 cases) and hippocampus (1 case). There were 3 children with asymmetric lesions, which were found in white matter (2 cases) and cerebellum (1 case).In the acute phase, the most typical head MRI showed "tricolor pattern"(high signal intensity in the center with surrounding low-signal, and hyperintense signals in the periphery of thalamus) or "bicolor pattern"(low signal in the central thalamus with surrounding hyperintense signals) of the thalamus on the apparent diffusion coefficient (ADC) imaging. Hemorrhage and encephalomalacia on MRI may suggest poor clinical outcome. <br/>Conclusion(s): ANEC is a rapid progressive encephalopathy with typical imaging features. Hemorrhage and encephalomalacia on MRI may be associated with poor prognosis.<br/>Copyright &#xa9; 2020 by the Chinese Medical Association.

1. **Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China.**  
   Wang Cuiyan International journal of environmental research and public health 2020;17(5):No page numbers.

Background: The 2019 coronavirus disease (COVID-19) epidemic is a public health emergency of international concern and poses a challenge to psychological resilience. Research data are needed to develop evidence-driven strategies to reduce adverse psychological impacts and psychiatric symptoms during the epidemic. The aim of this study was to survey the general public in China to better understand their levels of psychological impact, anxiety, depression, and stress during the initial stage of the COVID-19 outbreak. The data will be used for future reference. Methods: From 31 January to 2 February 2020, we conducted an online survey using snowball sampling techniques. The online survey collected information on demographic data, physical symptoms in the past 14 days, contact history with COVID-19, knowledge and concerns about COVID-19, precautionary measures against COVID-19, and additional information required with respect to COVID-19. Psychological impact was assessed by the Impact of Event Scale-Revised (IES-R), and mental health status was assessed by the Depression, Anxiety and Stress Scale (DASS-21). Results: This study included 1210 respondents from 194 cities in China. In total, 53.8% of respondents rated the psychological impact of the outbreak as moderate or severe; 16.5% reported moderate to severe depressive symptoms; 28.8% reported moderate to severe anxiety symptoms; and 8.1% reported moderate to severe stress levels. Most respondents spent 20-24 h per day at home (84.7%); were worried about their family members contracting COVID-19 (75.2%); and were satisfied with the amount of health information available (75.1%). Female gender, student status, specific physical symptoms (e.g., myalgia, dizziness, coryza), and poor self-rated health status were significantly associated with a greater psychological impact of the outbreak and higher levels of stress, anxiety, and depression (p < 0.05). Specific up-to-date and accurate health information (e.g., treatment, local outbreak situation) and particular precautionary measures (e.g., hand hygiene, wearing a mask) were associated with a lower psychological impact of the outbreak and lower levels of stress, anxiety, and depression (p < 0.05). Conclusions: During the initial phase of the COVID-19 outbreak in China, more than half of the respondents rated the psychological impact as moderate-to-severe, and about one-third reported moderate-to-severe anxiety. Our findings identify factors associated with a lower level of psychological impact and better mental health status that can be used to formulate psychological interventions to improve the mental health of vulnerable groups during the COVID-19 epidemic.

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1. **Impact of maternal hypertensive disorders on offspring's neurodevelopment: a longitudinal prospective cohort study in China.**  
   Chen Zhong Pediatric research 2020;:No page numbers.

BACKGROUNDMaternal hypertensive disorders of pregnancy (HDP) are the major causes of maternal mortality. However, the association between HDP and offspring's neurodevelopment remains unclear.METHODParticipants were 4031 singleton live births from a prospective cohort study in Wuhan, China, during October 2013 to October 2014. Neurodevelopment of infant was evaluated by using Chinese version of Gesell Developmental Schedules at 0.5 year of age. Maternal HDP and potential confounders were ascertained by healthcare records at baseline.RESULTSGeneralized linear model analysis indicated that maternal chronic hypertension were significantly associated with development quotient on fine motor (β = -3.32, 95% CI: -6.33 to -0.31), adaptability (β = -2.87, 95% CI: -5.31 to -0.43), language (β = -1.23, 95% CI: -2.12 to -0.34) and social behavior (β = -2.53, 95% CI: -4.69 to -0.37), and gestational hypertension was significantly associated with development quotient on social behavior (β = -1.42, 95% CI: -2.03 to -0.81), even after adjustment of major confounders. Multivariable logistic regression analysis showed that maternal chronic hypertension also increased the risk of diagnosis of "neurodevelopmental delay" on fine motor (OR = 1.85, 95% CI: 1.19-2.89), adaptability (OR = 2.32, 95% CI: 1.42-3.78), language (OR = 2.86, 95% CI: 1.74-4.70), and social behavior (OR = 2.13, 95% CI: 1.73-2.59).CONCLUSIONThis study suggests that exposure to HDP is associated with an increased risk of neurodevelopment impairment in the offspring at the age of 0.5 year.

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1. **Important roles of dietary taurine, creatine, carnosine, anserine and 4-hydroxyproline in human nutrition and health**  
   Wu G. Amino Acids 2020;52(3):329-360.

Taurine (a sulfur-containing beta-amino acid), creatine (a metabolite of arginine, glycine and methionine), carnosine (a dipeptide; beta-alanyl-l-histidine), and 4-hydroxyproline (an imino acid; also often referred to as an amino acid) were discovered in cattle, and the discovery of anserine (a methylated product of carnosine; beta-alanyl-1-methyl-l-histidine) also originated with cattle. These five nutrients are highly abundant in beef, and have important physiological roles in anti-oxidative and anti-inflammatory reactions, as well as neurological, muscular, retinal, immunological and cardiovascular function. Of particular note, taurine, carnosine, anserine, and creatine are absent from plants, and hydroxyproline is negligible in many plant-source foods. Consumption of 30 g dry beef can fully meet daily physiological needs of the healthy 70-kg adult human for taurine and carnosine, and can also provide large amounts of creatine, anserine and 4-hydroxyproline to improve human nutrition and health, including metabolic, retinal, immunological, muscular, cartilage, neurological, and cardiovascular health. The present review provides the public with the much-needed knowledge of nutritionally and physiologically significant amino acids, dipeptides and creatine in animal-source foods (including beef). Dietary taurine, creatine, carnosine, anserine and 4-hydroxyproline are beneficial for preventing and treating obesity, cardiovascular dysfunction, and ageing-related disorders, as well as inhibiting tumorigenesis, improving skin and bone health, ameliorating neurological abnormalities, and promoting well being in infants, children and adults. Furthermore, these nutrients may promote the immunological defense of humans against infections by bacteria, fungi, parasites, and viruses (including coronavirus) through enhancing the metabolism and functions of monocytes, macrophages, and other cells of the immune system. Red meat (including beef) is a functional food for optimizing human growth, development and health.<br/>Copyright &#xa9; 2020, The Author(s).

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1. **Improving the metabolic and mental health of children with obesity: A school-based nutrition education and physical activity intervention in Wuhan, China**  
   Yu H.-J. Nutrients 2020;12(1):No page numbers.

This study aimed to evaluate the effectiveness of a school-based nutrition education and physical activity intervention on cardiovascular risk profile and mental health outcomes among Chinese children with obesity. Two primary schools were randomly allocated to the control group (CG) and the intervention group (IG). We selected children with obesity from 1340 students in the third and fourth grades as participants. The IG received 8 months of nutrition education and physical activity intervention, while the CG was waitlisted. A generalized estimating equation model was applied to assess repeated variables over time. A total of 171 children with obesity (99 IG and 72 CG) aged 9.8 +/- 0.7 years completed the post-intervention stage. Compared with baseline, significant reductions were observed within the IG for depression and fasting plasma glucose at post-intervention. After adjusting for confounders, group and time interaction effects showed that the IG achieved improvements in the risk of poor well-being (p = 0.051) and social anxiety (p = 0.029), had decreased diastolic blood pressure (p = 0.020) and fasting plasma glucose (p &lt; 0.001), and had significantly increased high-density lipoprotein (p &lt; 0.001) from baseline to post-intervention relative to the CG. The effects of school-based nutrition education and physical activity intervention on children with obesity are diverse, including not only the improvement of metabolic health but also mental health promotion.<br/>Copyright &#xa9; 2020 by the authors. Licensee MDPI, Basel, Switzerland.

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1. **Increased Detection of Viruses in Children with Respiratory Tract Infection Using PCR.**  
   Lin Chien-Yu International journal of environmental research and public health 2020;17(2):No page numbers.

Respiratory viruses are a common cause of respiratory tract infection (RTI), particularly in neonates and children. Rapid and accurate diagnosis of viral infections could improve clinical outcomes and reduce the use of antibiotics and treatment sessions. Advances in diagnostic technology contribute to the accurate detection of viruses. We performed a multiplex real-time polymerase chain reaction (PCR) to investigate the viral etiology in pediatric patients and compared the detection rates with those determined using traditional antigen tests and virus cultures. Fifteen respiratory viruses were included in our investigation: respiratory syncytial virus A/B (RSV), influenza virus A (FluA) and influenza virus B (FluB), human metapneumovirus (MPV), enterovirus (EV), human parainfluenza virus (PIV) types 1-4, human rhinovirus (RV), human coronavirus OC43, NL63, and 229E, human adenovirus (ADV), and human bocavirus (Boca). In total, 474 specimens were collected and tested. Respiratory viruses were detected more frequently by PCR (357, 75.3%) than they were by traditional tests (229, 49.3%). The leading pathogens were RSV (113, 23.8%), RV (72, 15.2%), PIV3 (53, 11.2%), FluA (51, 10.8%), and ADV (48, 10.1%). For children younger than 5 years, RSV and RV were most prevalent; for children older than 5 years, FluA and ADV were the most frequently detected. Of the specimens, 25.8% (92/357) were coinfected with two or more viruses. RV, Boca, PIV2, FluB, and PIV4 had higher rates of coinfection; MPV and PIV1 had the lowest rates of coinfection (9.1% and 5.3%). To conclude, the detection power of PCR was better than that of traditional antigen tests and virus cultures when considering the detection of respiratory viruses. RSV and RV were the leading viral pathogens identified in the respiratory specimens. One-quarter of the positive specimens were coinfected with two or more viruses. In the future, further application of PCR may contribute to the rapid and accurate diagnosis of respiratory viruses and could improve patient outcomes.

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1. **Influenza vaccination and respiratory virus interference among Department of Defense personnel during the 2017-2018 influenza season**  
   Wolff G.G. Vaccine 2020;38(2):350-354.

Purpose: Receiving influenza vaccination may increase the risk of other respiratory viruses, a phenomenon known as virus interference. Test-negative study designs are often utilized to calculate influenza vaccine effectiveness. The virus interference phenomenon goes against the basic assumption of the test-negative vaccine effectiveness study that vaccination does not change the risk of infection with other respiratory illness, thus potentially biasing vaccine effectiveness results in the positive direction. This study aimed to investigate virus interference by comparing respiratory virus status among Department of Defense personnel based on their influenza vaccination status. Furthermore, individual respiratory viruses and their association with influenza vaccination were examined. <br/>Result(s): We compared vaccination status of 2880 people with non-influenza respiratory viruses to 3240 people with pan-negative results. Comparing vaccinated to non-vaccinated patients, the adjusted odds ratio for non-flu viruses was 0.97 (95% confidence interval (CI): 0.86, 1.09; p = 0.60). Additionally, the vaccination status of 3349 cases of influenza were compared to three different control groups: all controls (N = 6120), non-influenza positive controls (N = 2880), and pan-negative controls (N = 3240). The adjusted ORs for the comparisons among the three control groups did not vary much (range: 0.46-0.51). <br/>Conclusion(s): Receipt of influenza vaccination was not associated with virus interference among our population. Examining virus interference by specific respiratory viruses showed mixed results. Vaccine derived virus interference was significantly associated with coronavirus and human metapneumovirus; however, significant protection with vaccination was associated not only with most influenza viruses, but also parainfluenza, RSV, and non-influenza virus coinfections.<br/>Copyright &#xa9; 2019

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1. **Innate Immune Evasion by Human Respiratory RNA Viruses**  
   Kikkert M. Journal of Innate Immunity 2020;12(1):4-20.

The impact of respiratory virus infections on the health of children and adults can be very significant. Yet, in contrast to most other childhood infections as well as other viral and bacterial diseases, prophylactic vaccines or effective antiviral treatments against viral respiratory infections are either still not available, or provide only limited protection. Given the widespread prevalence, a general lack of natural sterilizing immunity, and/or high morbidity and lethality rates of diseases caused by influenza, respiratory syncytial virus, coronaviruses, and rhinoviruses, this difficult situation is a genuine societal challenge. A thorough understanding of the virus-host interactions during these respiratory infections will most probably be pivotal to ultimately meet these challenges. This review attempts to provide a comparative overview of the knowledge about an important part of the interaction between respiratory viruses and their host: the arms race between host innate immunity and viral innate immune evasion. Many, if not all, viruses, including the respiratory viruses listed above, suppress innate immune responses to gain a window of opportunity for efficient virus replication and setting-up of the infection. The consequences for the host's immune response are that it is often incomplete, delayed or diminished, or displays overly strong induction (after the delay) that may cause tissue damage. The affected innate immune response also impacts subsequent adaptive responses, and therefore viral innate immune evasion often undermines fully protective immunity. In this review, innate immune responses relevant for respiratory viruses with an RNA genome will briefly be summarized, and viral innate immune evasion based on shielding viral RNA species away from cellular innate immune sensors will be discussed from different angles. Subsequently, viral enzymatic activities that suppress innate immune responses will be discussed, including activities causing host shut-off and manipulation of stress granule formation. Furthermore, viral protease-mediated immune evasion and viral manipulation of the ubiquitin system will be addressed. Finally, perspectives for use of the reviewed knowledge for the development of novel antiviral strategies will be sketched.<br/>Copyright &#xa9; 2019 The Author(s) Published by S. Karger AG, Basel.

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1. **Insight into COVID-2019 for pediatricians.**  
   Li Yuanzhe Pediatric pulmonology 2020;:No page numbers.

Since December 2019, patients with unexplained pneumonia have been found in Wuhan City, Hubei Province, China. The pathogen in these cases is a new type of coronavirus. The World Health Organization confirmed this diagnosis and named the pathogen SARSCoV-2. The disease caused by SARSCoV-2 is called Corona Virus Disease (COVID-2019). The virus is highly infectious and pathogenic, causing human-to-human transmission. At present, SARSCoV-2 is still rampant in the world. Zhengzhou City in Henan Province serves as an example, 102 people have been confirmed to be infected with SARSCoV-2 (at 24:00 on February 5th, 2020), including three children, the youngest is 4 years old. From the perspective of clinical pediatricians as the first line fighting the epidemic, this paper will discuss the clinical characteristics, prevention and control measures, outcomes, diagnosis, and treatment of pediatric cases.

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1. **Interaction between FKBP5 polymorphisms and childhood trauma on depressive symptoms in Chinese adolescents: The moderating role of resilience.**  
   Kang Chun Journal of affective disorders 2020;266:143-150.

BACKGROUNDPrevious gene-environment studies on depression have examined the interaction between FKBP5 gene and childhood trauma, but the results are inconsistent and few studies have focused on Asian adolescents. Psychological resilience may explain for the inconsistency. We examined the interaction between FKBP5 gene and childhood trauma on depressive symptoms in Chinese adolescents, and firstly explored the moderating role of resilience in the relationship.METHODSThis study comprised 942 participants (448 males, 47.6%) randomly recruited from four senior schools in Wuhan, Hubei of China. Depressive symptoms, childhood trauma, and resilience were respectively evaluated by the Center for Epidemiological Studies Depression Scale (CES-D), the Childhood Trauma Questionnaire (CTQ) and the Connor-Davidson Resilience Scale (CD-RISC). Three potentially functional FKBP5 polymorphisms were selected for genotyping.RESULTSParticipants carrying minor alleles of FKBP5 polymorphisms (rs3800373, rs1360780, and rs4713916) and a haplotype derived from these variants displayed higher CES-D scores when exposed to childhood physical abuse after adjusting for demographic characteristics and resilience (all P < 0.01). The three-way interactions of FKBP5 SNPs, physical abuse, and resilience on depressive symptoms all yielded statistical significance after adjusting for demographic characteristics (β = -0.282 to -0.236; all P < 0.001).LIMITATIONSCross-sectional design, self- reported measurements and limited genotyped FKBP5 polymorphisms.CONCLUSIONFKBP5 variants in combination with childhood physical abuse may increase more pronounced depressive symptoms among Chinese adolescents, while resilience plays a moderating role in the associations. Future research to examine the exact mechanism of resilience in these associations is needed.

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1. **Interventions to mitigate early spread of SARS-CoV-2 in Singapore: a modelling study.**  
   Koo Joel R. The Lancet. Infectious diseases 2020;:No page numbers.

BACKGROUNDSince the coronavirus disease 2019 outbreak began in the Chinese city of Wuhan on Dec 31, 2019, 68 imported cases and 175 locally acquired infections have been reported in Singapore. We aimed to investigate options for early intervention in Singapore should local containment (eg, preventing disease spread through contact tracing efforts) be unsuccessful.METHODSWe adapted an influenza epidemic simulation model to estimate the likelihood of human-to-human transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in a simulated Singaporean population. Using this model, we estimated the cumulative number of SARS-CoV-2 infections at 80 days, after detection of 100 cases of community transmission, under three infectivity scenarios (basic reproduction number [R0] of 1·5, 2·0, or 2·5) and assuming 7·5% of infections are asymptomatic. We first ran the model assuming no intervention was in place (baseline scenario), and then assessed the effect of four intervention scenarios compared with a baseline scenario on the size and progression of the outbreak for each R0 value. These scenarios included isolation measures for infected individuals and quarantining of family members (hereafter referred to as quarantine); quarantine plus school closure; quarantine plus workplace distancing; and quarantine, school closure, and workplace distancing (hereafter referred to as the combined intervention). We also did sensitivity analyses by altering the asymptomatic fraction of infections (22·7%, 30·0%, 40·0%, and 50·0%) to compare outbreak sizes under the same control measures.FINDINGSFor the baseline scenario, when R0 was 1·5, the median cumulative number of infections at day 80 was 279 000 (IQR 245 000-320 000), corresponding to 7·4% (IQR 6·5-8·5) of the resident population of Singapore. The median number of infections increased with higher infectivity: 727 000 cases (670 000-776 000) when R0 was 2·0, corresponding to 19·3% (17·8-20·6) of the Singaporean population, and 1 207 000 cases (1 164 000-1 249 000) when R0 was 2·5, corresponding to 32% (30·9-33·1) of the Singaporean population. Compared with the baseline scenario, the combined intervention was the most effective, reducing the estimated median number of infections by 99·3% (IQR 92·6-99·9) when R0 was 1·5, by 93·0% (81·5-99·7) when R0 was 2·0, and by 78·2% (59·0 -94·4) when R0 was 2·5. Assuming increasing asymptomatic fractions up to 50·0%, up to 277 000 infections were estimated to occur at day 80 with the combined intervention relative to 1800 for the baseline at R0 of 1·5.INTERPRETATIONImplementing the combined intervention of quarantining infected individuals and their family members, workplace distancing, and school closure once community transmission has been detected could substantially reduce the number of SARS-CoV-2 infections. We therefore recommend immediate deployment of this strategy if local secondary transmission is confirmed within Singapore. However, quarantine and workplace distancing should be prioritised over school closure because at this early stage, symptomatic children have higher withdrawal rates from school than do symptomatic adults from work. At higher asymptomatic proportions, intervention effectiveness might be substantially reduced requiring the need for effective case management and treatments, and preventive measures such as vaccines.FUNDINGSingapore Ministry of Health, Singapore Population Health Improvement Centre.

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1. **Intubation and Ventilation amid the COVID-19 Outbreak: Wuhan's Experience.**  
   Meng Lingzhong Anesthesiology 2020;:No page numbers.

The COVID-19 outbreak has led to 80,409 diagnosed cases and 3,012 deaths in mainland China based on the data released on March 4, 2020. Approximately 3.2% of patients with COVID-19 required intubation and invasive ventilation at some point in the disease course. Providing best practices regarding intubation and ventilation for an overwhelming number of patients with COVID-19 amid an enhanced risk of cross-infection is a daunting undertaking. The authors presented the experience of caring for the critically ill patients with COVID-19 in Wuhan. It is extremely important to follow strict self-protection precautions. Timely, but not premature, intubation is crucial to counter a progressively enlarging oxygen debt despite high-flow oxygen therapy and bilevel positive airway pressure ventilation. Thorough preparation, satisfactory preoxygenation, modified rapid sequence induction, and rapid intubation using a video laryngoscope are widely used intubation strategies in Wuhan. Lung-protective ventilation, prone position ventilation, and adequate sedation and analgesia are essential components of ventilation management.

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1. **Isolation and characterization of a variant subgroup GII-a porcine epidemic diarrhea virus strain in China**  
   Yang D. Microbial Pathogenesis 2020;140:No page numbers.

Background: Highly virulent variants of porcine epidemic diarrhea virus (PEDV) have been closely associated with recent outbreaks of porcine epidemic diarrhea (PED) in China, which have resulted in severe economic losses to the pork industry. <br/>Method(s): In the current study, the variant PEDV strain HM2017 was isolated and purified and a viral growth curve was constructed according to the median tissue culture infective dose (TCID50). HM2017 were amplify with RT-PCR and analyzed by phylogeny analysis. Animal pathogenicity experiment was carried to evaluate the HM2017 clinical assessment. <br/>Result(s): Genome-based phylogenetic analysis revealed that PEDV strain HM2017 was clustered into the variant subgroup GII-a that is currently circulating in pig populations in China. The highest median tissue culture infectious dose of strain HM2017 after 15 passages in Vero cells was 1.33 x 10<sup>7</sup> viral particles/mL. Strain HM2017 was highly virulent to suckling piglets, which exhibited clinical symptoms at 12 h post-infection (hpi) (i.e., weight loss at 12-84 hpi, increased body temperatures at 24-48 hpi, high viral loads in the jejunum and ileum, and 100% mortality by 84 hpi). <br/>Conclusion(s): The present study reports a variant subgroup GII-a PEDV HM2017 strain in China and characterize its pathogenicity. PEDV strain HM2017 of subgroup GII-a presents a promising vaccine candidate for the control of PED outbreaks in China.<br/>Copyright &#xa9; 2019 Elsevier Ltd

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1. **Isolation and identification of porcine deltacoronavirus and alteration of immunoglobulin transport receptors in the intestinal mucosa of PdCoV-infected piglets**  
   Qian S. Viruses 2020;12(1):No page numbers.

Porcine deltacoronavirus (PDCoV) is a porcine enteropathogenic coronavirus that causes watery diarrhea, vomiting, and frequently death in piglets, causing serious economic losses to the pig industry. The strain CHN-JS-2017 was isolated and identified by cytopathology, immunofluorescence assays, transmission electron microscopy, and sequence analysis. A nucleotide sequence alignment showed that the whole genome of CHN-JS-2017 is 97.4%-99.6% identical to other PDCoV strains. The pathogenicity of the CHN-JS-2017 strain was investigated in orally inoculated five-day-old piglets; the piglets developed acute, watery diarrhea, but all recovered and survived. CHN-JS-2017 infection-induced microscopic lesions were observed, and viral antigens were detected mainly by immunohistochemical staining in the small intestine. The neonatal Fc receptor (FcRn) and polymeric immunoglobulin receptor (pIgR) are crucial immunoglobulin (Ig) receptors for the transcytosis ofimmunoglobulin G (IgG), IgA, or IgM. Importantly, CHN-JS-2017 infected five-day-old piglets could significantly down-regulate the expression of FcRn, pIgR, and nuclear factor-kappa B (NF-kappaB)in the intestinal mucosa. Note that the level of FcRn mRNA in the intestinal mucosa of normal piglets is positively correlated with pIgR and NF-kappaB. At the same time, the expressions of FcRn, pIgR, and NF-kappaB mRNA are also positively correlated in infected piglets. These results may help explain the immunological and pathological changes associated with porcine deltacorononirus infection.<br/>Copyright &#xa9; 2020 by the authors.

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1. **Lag effect of air temperature on the incidence of respiratory diseases in Lanzhou, China**  
   Chai G. International journal of biometeorology 2020;64(1):83-93.

Previous studies have found that ambient temperature was associated with respiratory disease. However, little evidence is available in Lanzhou, a semi-arid region in northwest China, and respiratory disease is not well understood. This study evaluated the risk of outpatient visits for respiratory diseases associated with ambient temperatures from 2007 to 2016 in Lanzhou. We used a distributed lag non-linear model coupled with a generalized additive model to estimate the association between daily temperature and hospital visits for respiratory diseases in age- and sex-specific groups. Over 10 years, 1,042,656 hospital visits were recorded for respiratory disease, the ratio between males and females was 1.21:1. The peak period of onset occurs from November of the current year to March of the following year. Both low and high temperatures were associated with an increased risk of hospital visits for respiratory illness. The results showed that a large temperature decrease was associated with a significant risk for respiratory disease, the maximum effect of a temperature drop was reached at lag 1~2 days, the extreme low temperature (-16 degreeC) had the maximum RR at lag 1, and the RR value was 1.082 (95 % CI 1.025-1.142). The high temperatures (23 degreeC) had maximum RR for respiratory disease on the current day, and the RR value was 1.099 (95 % CI 1.049-1.152). The high temperatures had acute and short-term effects and declined quickly over time, while the effects in low-temperature ranges were persistent over longer lag periods. Females suffered more from cold-associated morbidity than males. The effects of both hot and cold temperatures were greater among adolescents aged 6-14 years. Our study suggests that ambient temperatures are associated with hospital visits for respiratory illness in Lanzhou, particularly for those who are female and young. Caregivers and health practitioners should be made aware of the potential threat posed by cold and hot temperatures.

1. **Lower mortality of COVID-19 by early recognition and intervention: experience from Jiangsu Province**  
   Sun Q. Annals of Intensive Care 2020;10(1):No page numbers.

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1. **Maternal age and educational level modify the association between chronic hepatitis B infection and preterm labor**  
   Peng S. BMC pregnancy and childbirth 2020;20(1):38.

BACKGROUND: Few studies have investigated whether maternal age and education level modify the association of chronic hepatitis B virus (HBV) infection with preterm labor. We hypothesized that the association of HBV infection with preterm labor is modified by maternal age and education level. <br/>METHOD(S): A retrospective cohort study was conducted on the HBsAg-positive and HBsAg-negative pregnant women delivered from June 2012 to August 2017 at Wuhan Medical Care Center for Women and Children, Wuhan, China. A multivariate regression model was used in this study. <br/>RESULT(S): This study included 2050 HBsAg-positive pregnant women and 2050 HBsAg negative women. In the stratified analyses, positive HBsAg status was associated with the increased risk of preterm labor in women aged &lt;30years, having low educational level, with an odds ratio of 1.65(95% CI 1.07-2.54) and 2.59(95% CI 1.41-4.76), respectively. Breslow-Day test showed that there existed significant differences in the ORs for HBsAg carriage across each stratum of maternal age (p=0.023), educational level (p=0.002). After adjusting other co-variables, we observed maternal HBV infection (OR 1.60, 95% CI 1.03-2.49) was still associated with risk of preterm labor in pregnancy women with age&lt;30. Similarly, the significant association of HBV infection (OR 2.49, 95% CI 1.34-4.63) with preterm labor remained in low educated women. <br/>CONCLUSION(S): Our results indicated that HBV infection was associated with high risk of preterm labor, but maternal age and educational level could modify the association between HBV infection and preterm labor.

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1. **Misdiagnosis of anomalous origin of the left coronary artery from the pulmonary artery by echocardiography: Single-center experience from China**  
   Lin S. Echocardiography 2020;37(1):104-113.

Objectives: To identify the risk factors causing misdiagnosis by echocardiography and missed diagnosis of anomalous origin of the left coronary artery from the pulmonary artery (ALCAPA). <br/>Material(s) and Method(s): Echocardiographic results of 16 patients with ALCAPA confirmed by surgery in Union Hospital, Wuhan, were analyzed retrospectively. The influencing factors leading to echocardiographic misdiagnosis were analyzed from the aspects of confusing image characteristics, special pathological anatomy of the left coronary artery (LCA), and operators' working years. <br/>Result(s): Echocardiography diagnosed 11 cases with an accuracy rate of 68.8%. Five cases were misdiagnosed, three cases as endocardial fibroelastosis, one case as mitral prolapse with severe insufficiency, and one case as coronary-pulmonary artery fistula. Display rate of the specific echocardiographic features for confirmed group and misdiagnosed group was statistically significantly differentP =.014. But the working years of the operator for confirmed group and misdiagnosed group were not statistically significantly differentP =.267. Some special pathological anatomy and pathophysiological features could be also the cause of misdiagnosis. <br/>Conclusion(s): Echocardiography is the first diagnostic choice of the ALCAPA in China. It is essential for the operator to have the knowledge, diagnostic awareness, and proficiency in manipulation in the accurate interpretation of echocardiography results.<br/>Copyright &#xa9; 2020 Wiley Periodicals, Inc.

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1. **Molecular Diagnosis of Pneumonia Using Multiplex Real-Time PCR Assay RespiFinder® SMART 22 FAST in a Group of Moroccan Infants.**  
   Hattoufi Kenza Advances in virology 2020;2020:6212643.

BackgroundIn Morocco, pediatric pneumonia remains a serious public health problem, as it constitutes the first cause of mortality due to infectious diseases. The etiological diagnosis of acute respiratory tract infections is difficult. Therefore, it is necessary to use Multiplex real-time polymerase chain reaction assay tests in a routine setting for exact and fast identification.ObjectivesIn this paper, we present the clinical results of pediatric pneumonia and describe their etiology by using molecular diagnosis. Study design: Tracheal secretion was collected from infants presenting respiratory distress isolated or associated with systemic signs, attending the unit of Neonatology between December 1, 2016, and Mai 31, 2018. Samples were tested with the multiplex RespiFinder® SMART 22 FAST which potentially detects 18 viruses and 4 bacteria.ResultsOf the 86 infants considered in this study (mean age 31 ± 19 days) suspected of acute respiratory tract infections, 71 (83%) were positive for one or multiple viruses or/and bacteria. The majority of acute respiratory tract infections had a viral origin (95%): respiratory syncytial viruses (A and B) (49%), rhinovirus (21%), coronaviruses 229E (11%), humain metapneumovirus (5%), influenza A (3%), influenza H1N1 (1%), adenovirus (2%), and parainfluenza virus type 4 (2%). Among our patients, 6% had Mycoplasma pneumoniae. Coinfections were not associated with severe respiratory symptoms.ConclusionThe clinical spectrum of respiratory infections is complex and often nonspecific. Thus, the early and fast detection of related causative agents is crucial. The use of multiplex real time polymerase chain reaction may help choose an accurate treatment, reduce the overall use of unnecessary antibiotics, preserve intestinal flora, and decrease nosocomial infection by reducing the length of hospitalization.

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1. **Multicenter evaluation of the QIAstat Respiratory Panel-A new rapid highly multiplexed PCR based assay for diagnosis of acute respiratory tract infections**  
   Parcina M. PLoS ONE 2020;15(3):No page numbers.

Acute respiratory tract infections (ARTI), including the common cold, pharyngitis, sinusitis, otitis media, bronchiolitis and pneumonia are the most common diagnoses among patients seeking medical care in western countries, and account for most antibiotic prescriptions. While a confirmed and fast ARTI diagnosis is key for antibiotic prescribing, empiric antimicrobial treatment remains common, because viral symptoms are often clinically similar and difficult to distinguish from those caused by bacteria. As a result, inappropriate antibiotic prescriptions are high and in certain settings likely higher than the commonly estimated 30%. The QIAstat Respiratory Panel<sup></sup> assay (QIAstat RP) is a multiplexed in vitro diagnostics test for the rapid simultaneous detection of 21 pathogens directly from respiratory samples, including human mastadenovirus A-G, primate bocaparvovirus 1+2, human coronavirus (HKU1, NL63, OC43, 229E), human metapneumovirus A/B, rhinovirus/enterovirus, influenza A virus (no subtype, subtype H1, H1N1/2009, H3), influenza B virus, human respirovirus 1+3, human orthorubulavirus 2+4, human orthopneumovirus, Bordetella pertussis, Chlamydia pneumoniae, Mycoplasma pneumoniae and Legionella pneumophila. We describe the first multicenter study of 445 respiratory samples, collected through the 2016-2017 and 2018 respiratory seasons, with performance compared against BioFire FilmArray RP v1.7 and discrepancy testing by Seegene Allplex RP. The QIAstat RP demonstrated a positive percentage of agreement of 98.0% (95% CI: 96.0-99.1%) and a negative percentage agreement of 99.8% (95% CI: 99.6-99.9%). With use of this comprehensive and rapid test, improved patient outcomes and antimicrobial stewardship may potentially be achieved.<br/>Copyright &#xa9; 2020 Parcina et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

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1. **Novel Coronavirus 2019 (2019-nCoV) Infection: Part I - Preparedness and Management in the Pediatric Intensive Care Unit in Resource-limited Settings.**  
   Ravikumar Namita Indian pediatrics 2020;:No page numbers.

First reported in China, the 2019 novel coronavirus has been spreading across globe. Till 26 March, 2020, 416,686 cases have been diagnosed and 18,589 have died the world over. The coronavirus disease mainly starts with a respiratory illness and about 5%-16% require intensive care management for acute respiratory distress syndrome (ARDS) and multi-organ dysfunction. Children account for about 1%-2% of the total cases, and 6% of these fall under severe or critical category requiring pediatric intensive care unit (PICU) care. Diagnosis involves a combination of clinical and epidemiological features with laboratory confirmation. Preparedness strategies for managing this pandemic are the need of the hour, and involve setting up cohort ICUs with isolation rooms. Re-allocation of resources in managing this crisis involves careful planning, halting elective surgeries and training of healthcare workers. Strict adherence to infection control like personal protective equipment and disinfection is the key to contain the disease transmission. Although many therapies have been tried in various reigns, there is a lack of strong evidence to recommend anti-virals or immunomodulatory drugs.

1. **Novel Coronavirus 2019 (2019-nCoV) Infection: Part II - Respiratory Support in the Pediatric Intensive Care Unit in Resource-limited Settings.**  
   Sundaram Manu Indian pediatrics 2020;:No page numbers.

The 2019-novel coronavirus predominantly affects the respiratory system with manifestations ranging from upper respiratory symptoms to full blown acute respiratory distress syndrome (ARDS). It is important to recognize the risk factors, categorize severity and provide early treatment. Use of high flow devices and non-invasive ventilation has been discouraged due to high chances of aerosol generation. Early intubation and mechanical ventilation are essential to prevent complications and worsening, especially in resource-limited settings with very few centers having expertise to manage critical cases. Hydrophobic viral filter in the ventilator circuit minimizes chances of transmission of virus. Strategies to manage ARDS in COVID-19 include low tidal volume ventilation with liberal sedation-analgesia. At the same time, prevention of transmission of the virus to healthcare workers is extremely important in the intensive care setting dealing with severe cases and requiring procedures generating aerosol. We, herein, provide guidance on non-invasive respiratory support, intubation and management of ARDS in a child with COVID-19.

1. **Novel coronavirus in a 15-day-old neonate with clinical signs of sepsis, a case report.**  
   Kamali Aghdam Mojtaba Infectious diseases (London, England) 2020;:1-3.

Introduction: Novel coronavirus or coronavirus disease (COVID-19) can affect all age groups. The clinical course of the disease in children and infants is milder than in adults. It should be noted that, although typical symptoms may be present in children, non-specific symptoms could be noted in the neonate. The disease is rare in the neonate, so, its suspicion in this group can help to make a quick diagnose.Case report: A 15-day-old neonate was admitted with fever, lethargy, cutaneous mottling, and respiratory distress without cough. His mother had symptoms of Novel coronavirus. So Reverse-Transcription Polymerase Chain Reaction (RT-PCR) assay was done for the neonate and showed to be positive. The newborn was isolated and subjected to supportive care. Antibiotic and antiviral treatment was initiated. Eventually, the baby was discharged in good general condition.Conclusion: When a newborn presents with non-specific symptoms of infection with an added history of COVID-19 in his/her parents, it indicates the need for PCR testing for Novel coronavirus.

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1. **Oxycodone preemptive analgesia after endoscopic plasma total adenotonsillectomy in children: A randomized controlled trial**  
   Wu J. Medicine (United States) 2020;99(6):No page numbers.

Background:Endoscopic tonsillectomy is associated with postoperative pain. Postoperative pain management remains to be improved in children. We aimed to investigate oxycodone preemptive analgesia in children undergoing endoscopic plasma total adenotonsillectomy. <br/>Method(s):166 children with adenotonsillar hypertrophy were recruited at Wuhan Children's Hospital between 08/2016 and 03/2017. They were randomly assigned to receive SPOA (postoperative sufentanil), SPEA+SPOA (preemptive sufentanil and postoperative sufentanil), and OPEA+SPOA (preemptive oxycodone and postoperative sufentanil). The primary endpoint was serum c-fos levels. The secondary endpoints were the response entropy (RE) value, Pediatric Anesthesia Emergence Delirium (PAED) score, FLACC score, and adverse events. <br/>Result(s):c-fos mRNA levels were increased significantly after surgery in the SPOA and SPEA+SPOA groups (P&lt;.05). Postoperatively, c-fos mRNA levels were higher in the SPOA group compared with the OPEA+SPOA group (P=.044). The RE values increased in all groups after surgery (P&lt;.05). At extubation, RE values were higher in the SPOA group compared with the SPEA+SPOA and OPEA+SPOA groups (P&lt;.05). The PAED scores were higher in the SPOA group compared with the OPEA+SPOA group (P=.045). In the SPOA group, the FLACC scores were decreased at 24h after surgery vs 4hours (P=.044). Prediction probability (P<sup>k</sup>) values indicated that RE and c-fos mRNA levels were quantitative predictors for early postoperative stress reaction after surgery. <br/>Conclusion(s):The subanalgesic dose of oxycodone (0.1mg/kg) as preemptive analgesia could improve pain after endoscopic plasma total adenotonsillectomy in children.<br/>Copyright &#xa9; 2020 Lippincott Williams and Wilkins. All rights reserved.

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1. **Pathogenicity of porcine deltacoronavirus (PDCoV) strain NH and immunization of pregnant sows with an inactivated PDCoV vaccine protects 5-day-old neonatal piglets from virulent challenge**  
   Zhang J. Transboundary and Emerging Diseases 2020;67(2):572-583.

In this study, the pathogenicity of porcine deltacoronavirus (PDCoV) strain NH (passage 10, P10) was evaluated. We found that PDCoV strain NH is enteropathogenic in 5-day-old pigs. Pathogenicity experiments provided a challenge model for studying the protection efficiency of passive immunity. In order to investigate the protective efficacy of passive immunity in newborn piglets, pregnant sows were vaccinated with either a PDCoV-inactivated vaccine at the Houhai acupoint (n = 5) or DMEM as a negative control (n = 2) using a prime/boost strategy 20 and 40 days before delivery. PDCoV spike (S)-specific IgG and neutralizing antibody (NA) responses were detected in immunized sows and piglets born to immunized sows. PDCoV spike (S)-specific sIgA was also detected in the colostrum and milk of immunized sows. Five days post-farrowing, piglets were orally challenged with PDCoV strain NH (10<sup>5</sup> TCID<sub>50</sub>/piglet). Severe diarrhoea, high levels of viral RNA copies and substantial intestinal villus atrophy were detected in piglets born to unimmunized sows. Only 4 of 31 piglets (12.9%) born to immunized sows in the challenge group displayed mild to moderate diarrhoea, lower viral RNA copies and minor intestinal villi damage compared to piglets born to unimmunized sows post-challenge. Mock piglets exhibited no typical clinical symptoms. The challenge experiment results indicated that the inactivated PDCoV vaccine exhibited 87.1% protective efficacy in the piglets. These findings suggest that the inactivated PDCoV vaccine has the potential to be an effective vaccine, providing protection against virulent PDCoV.<br/>Copyright &#xa9; 2019 Blackwell Verlag GmbH

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1. **Pediatric Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Infection - UAE**  
   Kindi F.A. Journal of Infection and Public Health 2020;13(2):372.

Introduction In 2012, MERS-CoV was identified in Saudi Arabia and resulted in more than 2442 confirmed cases worldwide by May 2019. MERS-CoV infection in children is less common. A review of MERS-CoV in children from 2012 to April 2016 summarized the clinical manifestation of 31 reported cases. Most children were asymptomatic or had mild respiratory symptoms, and severe infection reported in patients with comorbid conditions. We aimed to study the clinical characteristics of pediatric MERS CoV infected cases in UAE supported by literature review. Method A retrospective multicenter chart review study was conducted for MERS-CoV cases in Abu Dhabi Emirate (May 2012 - May 2019). Demographic, clinical and laboratory data were analyzed. We reviewed WHO outbreak surveillance reports published online to identify pediatric MERS-CoV cases from April 2016 to June 2019. Results We describe favorable outcomes of MERS-CoV infection in three children identified in UAE. Two patients had household contact with MERS-CoV infected family members and another patient travelled to Saudi Arabia. MERS-CoV was confirmed by PCR from nasopharyngeal aspirates and duration of viral shedding ranged from 4 to 11 days. One patient was asymptomatic and other two had mild respiratory symptoms. Laboratory data and chest X rays were normal. We reviewed WHO surveillance data and identified 11 pediatric MERS-CoV cases from April 2016 to June 2019. Mean age of 14.9 years (6 females, 5 males). The majority of pediatric outbreak was in year 2017 (8 cases) and most cases identified in Saudi Arabia. The main risk factor was household infection. Two patients died due to severe MERS-CoV infection. There are an estimated 42 pediatric MERS-CoV cases reported globally, with a mortality rate of 9.5 % (4 cases). Conclusion Pediatric MERS-CoV infection is acquired mainly through household contact. It has favorable outcomes and the mortality rate in children remains lower than adults.<br/>Copyright &#xa9; 2020

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1. **Perinatal-Neonatal Management of COVID-19 Infection - Guidelines of the Federation of Obstetric and Gynecological Societies of India (FOGSI), National Neonatology Forum of India (NNF), and Indian Academy of Pediatrics (IAP).**  
   Chawla Deepak Indian pediatrics 2020;:No page numbers.

JUSTIFICATIONDuring the current rapidly evolving pandemic of COVID-19 infection, pregnant women with suspected or confirmed COVID-19 and their newborn infants form a special vulnerable group that needs immediate attention. Unlike other elective medical and surgical problems for which care can be deferred during the pandemic, pregnancies and childbirths will continue. Perinatal period poses unique challenges and care of the mother-baby dyads requires special resources for prevention of transmission, diagnosis of infection and providing clinical care during labor, resuscitation and postnatal period.PROCESSThe GRADE approach recommended by the World Health Organization was used to develop the guideline. A Guideline Development Group (GDG) comprising of obstetricians, neonatologists and pediatricians was constituted. The GDG drafted a list of questions which are likely to be faced by clinicians involved in obstetric and neonatal care. An e-survey was carried out amongst a wider group of clinicians to invite more questions and prioritize. Literature search was carried out in PubMed and websites of relevant international and national professional organizations. Existing guidelines, systematic reviews, clinical trials, narrative reviews and other descriptive reports were reviewed. For the practice questions, the evidence was extracted into evidence profiles. The context, resources required, values and preferences were considered for developing the recommendations.OBJECTIVESTo provide recommendations for prevention of transmission, diagnosis of infection and providing clinical care during labor, resuscitation and postnatal period.RECOMMENDATIONSA set of twenty recommendations are provided under the following broad headings: 1) pregnant women with travel history, clinical suspicion or confirmed COVID-19 infection; 2) neonatal care; 3) prevention and infection control; 4) diagnosis; 5) general questions.

1. **Personality traits and depressive symptoms: The moderating and mediating effects of resilience in Chinese adolescents**  
   Gong Y. Journal of Affective Disorders 2020;265:611-617.

Background: Various studies showed that personality traits and resilience might have impacts on depressive symptoms, separately. However, the relationships among personality traits, resilience and depressive symptoms are still undefined. Thus, this study tried to explore the potential effect of resilience on the associations between personality traits and depressive symptoms in Chinese adolescents. <br/>Method(s): Adolescents (n = 6019) aged 10-17 years were recruited from nine schools in Wuhan, China. Depressive symptoms, personality traits, and resilience were evaluated by the Center for Epidemiologic Studies Depression scale (CES-D), the NEO-Five Factor Inventory (NEO-FFI), and the Connor-Davidson Resilience Scale (CD-RISC), respectively. <br/>Result(s): Neuroticism was positively associated with depressive symptoms, whereas extraversion, openness, agreeableness, and conscientiousness were negatively associated with depressive symptoms. Resilience separately moderated the associations of neuroticism, extraversion, agreeableness, and conscientiousness with depressive symptoms, and partly mediated the associations of all five personality traits with depressive symptoms. <br/>Limitation(s): This study is a cross sectional study and cannot ascertain the causal relationships between the variables. Also self-reported questionnaire instruments were used in the data collection. <br/>Conclusion(s): These findings suggested that resilience might play moderating and mediating roles in the associations of personality traits with depressive symptoms, and prompted that it was critical to improve resilience and develop adaptive personality traits in the prevention and intervention of depression in adolescents.<br/>Copyright &#xa9; 2019

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1. **Persons Evaluated for 2019 Novel Coronavirus - United States, January 2020.**  
   Bajema Kristina L. MMWR. Morbidity and mortality weekly report 2020;69(6):166-170.

In December 2019, a cluster of cases of pneumonia emerged in Wuhan City in central China's Hubei Province. Genetic sequencing of isolates obtained from patients with pneumonia identified a novel coronavirus (2019-nCoV) as the etiology (1). As of February 4, 2020, approximately 20,000 confirmed cases had been identified in China and an additional 159 confirmed cases in 23 other countries, including 11 in the United States (2,3). On January 17, CDC and the U.S. Department of Homeland Security's Customs and Border Protection began health screenings at U.S. airports to identify ill travelers returning from Wuhan City (4). CDC activated its Emergency Operations Center on January 21 and formalized a process for inquiries regarding persons suspected of having 2019-nCoV infection (2). As of January 31, 2020, CDC had responded to clinical inquiries from public health officials and health care providers to assist in evaluating approximately 650 persons thought to be at risk for 2019-nCoV infection. Guided by CDC criteria for the evaluation of persons under investigation (PUIs) (5), 210 symptomatic persons were tested for 2019-nCoV; among these persons, 148 (70%) had travel-related risk only, 42 (20%) had close contact with an ill laboratory-confirmed 2019-nCoV patient or PUI, and 18 (9%) had both travel- and contact-related risks. Eleven of these persons had laboratory-confirmed 2019-nCoV infection. Recognizing persons at risk for 2019-nCoV is critical to identifying cases and preventing further transmission. Health care providers should remain vigilant and adhere to recommended infection prevention and control practices when evaluating patients for possible 2019-nCoV infection (6). Providers should consult with their local and state health departments when assessing not only ill travelers from 2019-nCoV-affected countries but also ill persons who have been in close contact with patients with laboratory-confirmed 2019-nCoV infection in the United States.

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1. **Phthalate esters contamination in vegetable-soil system of facility greenhouses in Jingmen, central China and the assessment of health risk**  
   Ma T. Environmental geochemistry and health 2020;:No page numbers.

Residual levels of six priority phthalate esters (PAEs) compounds in top soils and vegetables of 40 selected greenhouses in two typical facility vegetable greenhouse production areas of Jingmen (Hubei, central China) were determined. Total concentrations of six target PAEs (SIGMA6PAEs) in 72 vegetable and 40 soil samples ranged from 862+/-209 to 4260+/-385 micro&#32;g kg-1 (dry weight, DW), and from 1122+/-156 to 4134+/-272 micro&#32;g kg-1 (DW), respectively. Di-n-butyl phthalate and di-(2-ethylhexyl) phthalate (DEHP) are the two most frequently and massively detected in all samples. The highest SIGMA6PAEs appeared in leaf samples of Tuanlin, vegetable fruits of Zhongxiang and soils of Tuanlin. No carcinogenic risk was posed based on the results of health risk assessment, but non-carcinogenic risk of DEHP to children less than 6 years old in Tuanlin (all 24 sampling sites) and Zhongxiang (4/16 sampling sites) and people older than 6 years old in Tuanlin (19/24 sampling sites) were achieved from hazard quotient values. The contamination risk problem of PAEs in Tuanlin deserves greatest concern in Jingmen. Combined with the results of our former study, the health risks of target pollutants were clarified and the lack of survey data on PAE concentrations in facility vegetable greenhouses of central China was filled in. Due to high residuals and significant non-carcinogenic risk values, DEHP should be nominated as priority PAEs in China. Our study suggested better regulation for PAEs control in intensively managed greenhouses and references for revision of Chinese environmental standards.

1. **Practical Strategies Against the Novel Coronavirus and COVID-19-the Imminent Global Threat.**  
   Rahimi Farid Archives of medical research 2020;:No page numbers.

The last month of 2019 harbingered the emergence of a viral outbreak that is now a major public threat globally. COVID-19 was first diagnosed and confirmed in a couple of cases with unknown pneumonia; the patients lived in, or travelled to, Wuhan, the capital of China's Hubei province. People now face a complex challenge that deserves urgent intervention by all involved in medical healthcare globally. Conventional antiviral therapies or vaccines are the most referred means of tackling the virus, but we think establishing these ideal management strategies is presently far-fetched. In-house isolation or quarantine of suspected cases to keep hospital admissions manageable and prevent in-hospital spread of the virus, and promoting general awareness about transmission routes are the practical strategies used to tackle the spread of COVID-19. Cases with weakened or compromised immune systems-for example, elderly individuals, young children, and those with pre-existing conditions such as diabetes, cancer, hypertension, and chronic respiratory diseases-are particularly more susceptible to COVID-19. Hopefully, cumulative data using whole-genome sequencing of the SARS-CoV-2 genome in parallel with mathematical modeling will help the molecular biologists to understand unknown features of the pathogenesis and epidemiology of COVID-19.

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1. **Pregnancy and Perinatal Outcomes of Women With Coronavirus Disease (COVID-19) Pneumonia: A Preliminary Analysis.**  
   Liu Dehan AJR. American journal of roentgenology 2020;:1-6.

OBJECTIVE. The purpose of this study was to describe the clinical manifestations and CT features of coronavirus disease (COVID-19) pneumonia in 15 pregnant women and to provide some initial evidence that can be used for guiding treatment of pregnant women with COVID-19 pneumonia. MATERIALS AND METHODS. We reviewed the clinical data and CT examinations of 15 consecutive pregnant women with COVID-19 pneumonia in our hospital from January 20, 2020, to February 10, 2020. A semiquantitative CT scoring system was used to estimate pulmonary involvement and the time course of changes on chest CT. Symptoms and laboratory results were analyzed, treatment experiences were summarized, and clinical outcomes were tracked. RESULTS. Eleven patients had successful delivery (10 cesarean deliveries and one vaginal delivery) during the study period, and four patients were still pregnant (three in the second trimester and one in the third trimester) at the end of the study period. No cases of neonatal asphyxia, neonatal death, stillbirth, or abortion were reported. The most common early finding on chest CT was ground-glass opacity (GGO). With disease progression, crazy paving pattern and consolidations were seen on CT. The abnormalities showed absorptive changes at the end of the study period for all patients. The most common onset symptoms of COVID-19 pneumonia in pregnant women were fever (13/15 patients) and cough (9/15 patients). The most common abnormal laboratory finding was lymphocytopenia (12/15 patients). CT images obtained before and after delivery showed no signs of pneumonia aggravation after delivery. The four patients who were still pregnant at the end of the study period were not treated with antiviral drugs but had achieved good recovery. CONCLUSION. Pregnancy and childbirth did not aggravate the course of symptoms or CT features of COVID-19 pneumonia. All the cases of COVID-19 pneumonia in the pregnant women in our study were the mild type. All the women in this study-some of whom did not receive antiviral drugs-achieved good recovery from COVID-19 pneumonia.

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1. **Preliminary Results of Initial Testing for Coronavirus (COVID-19) in the Emergency Department.**  
   Tolia Vaishal M. The western journal of emergency medicine 2020;21(3):No page numbers.

INTRODUCTIONOn March 10, 2020, the World Health Organization declared a global pandemic due to widespread infection of the novel coronavirus 2019 (COVID-19). We report the preliminary results of a targeted program of COVID-19 infection testing in the ED in the first 10 days of its initiation at our institution.METHODSWe conducted a review of prospectively collected data on all ED patients who had targeted testing for acute COVID-19 infection at two EDs during the initial 10 days of testing (March 10-19, 2020). During this initial period with limited resources, testing was targeted toward high-risk patients per Centers for Disease Control and Prevention guidelines. Data collected from patients who were tested included demographics, clinical characteristics, and test qualifying criteria. We present the data overall and by test results with descriptive statistics.RESULTSDuring the 10-day study period, the combined census of the study EDs was 2157 patient encounters. A total of 283 tests were ordered in the ED. The majority of patients were 18-64 years of age, male, non-Hispanic white, had an Emergency Severity Index score of three, did not have a fever, and were discharged from the ED. A total of 29 (10.2%) tested positive. Symptoms-based criteria most associated with COVID-19 were the most common criteria identified for testing (90.6%). All other criteria were reported in 5.51-43.0% of persons being tested. Having contact with a person under investigation was significantly more common in those who tested positive compared to those who tested negative (63% vs 24.5%, respectively). The majority of patients in both results groups had at least two qualifying criteria for testing (75.2%).CONCLUSIONIn this review of prospectively collected data on all ED patients who had targeted testing for acute COVID-19 infection at two EDs in the first 10 days of testing, we found that 10.2% of those tested were identified as positive. The continued monitoring of testing and results will help providers understand how COVID-19 is progressing in the community.

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1. **Prenatal Exposure to Organophosphate Flame Retardants and the Risk of Low Birth Weight: A Nested Case-Control Study in China**  
   Luo D. Environmental Science and Technology 2020;54(6):3375-3385.

Organophosphate flame retardants (OPFRs), used as flame retardants and plasticizers, have been suggested to impair fetal growth and development in toxicological studies, but epidemiological data are extremely limited. This study was designed to explore whether prenatal exposure to OPFRs was associated with an increased risk of low birth weight (LBW) using a nested case-control design based on the ongoing prospective birth cohort in Wuhan, China. A total of 113 cases and 226 matched controls recruited from this cohort project in 2014-2016 were included. OPFR metabolite concentrations in maternal urine samples collected in the third trimester were determined, and birth outcomes were extracted from medical records. Compared with the lowest tertile of diphenyl phosphate (DPHP) concentrations, pregnant women with the highest tertile of DPHP had a 4.62-fold (95% confidence interval (CI): 1.72, 12.40) significantly increased risk for giving birth to LBW infants, with a significant dose-response relationship (p-trend &lt; 0.01). After stratification by newborn sex, the significant positive association of DPHP levels with LBW risk was merely observed among female newborns. Our results suggest a positive association between maternal urinary DPHP concentrations and LBW risk for the first time, and the effect appears be sex-specific.<br/>Copyright &#xa9; 2020 American Chemical Society.

1. **Quantitative comparison of two-dimensional and three-dimensional strain measurement using MRI feature tracking in repair Fontan patients and normal child volunteers**  
   Hu L. BMC medical imaging 2020;20(1):8.

BACKGROUND: The accuracy of 2D and 3D strain analyses was evaluated by comparing strain and cardiac function parameters in Fontan repair patients and normal child volunteers. <br/>METHOD(S): We retrospectively enrolled 32 patients with Fontan circulation and 32 child volunteers who had undergone clinical cardiac magnetic resonance (CMR) assessment of the dominant ventricle with a 1.5-Tesla MRI scanner. Global and regional strain (2D and 3D) of the dominant ventricle in both groups was assessed using CMR feature-tracking. Correlations between cardiac function and strain data were assessed using Pearson's correlation coefficient values. The intraclass correlation coefficient (ICC) and coefficient of variation (CoV) were determined to evaluate repeatability and agreement. <br/>RESULT(S): The 2D GLS showed significant differences between the Fontan repair patients and volunteers (-16.49+/-5.00 vs. -19.49+/-2.03; p=0.002). The 2D GRS and 2D GCS showed no significant differences between two groups. 2D GRS: 38.96+/-14.48 vs. 37.46+/-7.77; 2D GCS: -17.64+/-5.00 vs. -16.89+/-2.96, respectively; p&gt;0.05). The 3D global radial strain (GRS), global circumferential strain (GCS), and global longitudinal strain (GLS) showed significant differences between the Fontan repair patients and volunteers (3D GRS: 36.35+/-16.72 vs. 44.96+/-9.98; 3D GLS: -8.86+/-6.84 vs. -13.67+/-2.44; 3D GCS: -13.70+/-7.84 vs. -18.01+/-1.78; p&lt;0.05, respectively). The ejection fraction (EF) and 3D GCS were significantly associated (r=-0.491, p=0.004). The 3D GCS showed correlations with the indexed end-diastolic volume (EDV) (r=0.523, p=0.002) and indexed end-systolic volume (ESV) (r=0.602, p&lt;0.001). 3D strain showed good reproducibility, with GCS showing the best inter-observer agreement (ICC=0.87 and CoV=5.15), followed by GLS (ICC=0.84 and CoV=5.36). <br/>CONCLUSION(S): 3D GCS is feasible, highly reproducible, and strongly correlated with conventional cardiac function measures. 3D GCS assessments may be useful for monitoring abnormal myocardial motion in patients with Fontan circulation.

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1. **Recommendation about the perioperative prevention of infection to healthcare workers and the anesthesia management of children with SARS-CoV-2 infection**  
   Huang J. World Journal of Pediatric Surgery 2020;3(1):No page numbers.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has spread widely and persistently over 100 countries. New challenges have occurred in the perioperative management of airway and anesthesia in children diagnosed with SARS-CoV-2 infection. According to current publications and to our own experiences in anesthesia management for cases with SARS-CoV-2 suspected, we reviewed concerns about the perioperative prevention of SARS-CoV-2 to medical staff and the anesthesia strategy to the patient.<br/>Copyright &#xa9; &#xa9; Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

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1. **Retrospective Analysis of 61 Cases of Children Died of Viral Pneumonia.**  
   Chen X. B Fa yi xue za zhi 2020;36(2):No page numbers.

AbstractObjective To retrospectively analyze the forensic and pathological postmortem examination and clinical data of children who died of viral pneumonia in identification of cause of death cases and to discuss the clinical characteristics and pathological features of viral pneumonia in children, in order to provide reference to pathological diagnosis of viral pneumonia in children caused by severe acute respiratory syndrome coronavirus-2 （SARS-CoV-2） infection. Methods In this study, postmortem examination data from the institute of 61 cases of children whose cause of death were identified as viral pneumonia in recent years were collected. The gender, age, clinical symptoms and pathological features were comparatively analyzed. Results Among the 61 cases of children who died of viral pneumonia, most were within 2 years old （83.61%）, and a large proportion died within 2 weeks after the onset of the disease （91.80%）. General changes in postmortem examination included respiratory mucosal hyperemia, pleural effusion, pulmonary swelling, variegated pulmonary pleura and serosa, focal hemorrhage and edema of the cut surface of the lung. A large proportion of children had enlarged mesenteric lymph nodes （83.61%）, and 21.31% of children had thymic dysplasia. Histopathological changes included pulmonary alveoli and interstitial edema, pulmonary hemorrhage, alveolar epithelial shedding, serous and （or） fibrous exudation in the alveoli, formation of viral inclusions, formation of transparent membranes, infiltration of inflammatory cells that mainly consisted of macrophages and lymphocytes in interstitial substance and alveoli. Viral infections often affected the heart and gastrointestinal tract. Conclusion The clinical symptoms of children with viral pneumonia are difficult to notice, and because their immune system is not fully developed and they have poor autoimmunity, they can easily get into a critical condition and even die. Through analysis of the characteristics of forensic autopsy and histopathological changes, this study could provide reference for pathological diagnosis of viral pneumonia.

1. **Retrospective Validation of a Metagenomic Sequencing Protocol for Combined Detection of RNA and DNA Viruses Using Respiratory Samples from Pediatric Patients**  
   van Boheemen S. Journal of Molecular Diagnostics 2020;22(2):196-207.

Viruses are the main cause of respiratory tract infections. Metagenomic next-generation sequencing (mNGS) enables unbiased detection of all potential pathogens. To apply mNGS in viral diagnostics, sensitive and simultaneous detection of RNA and DNA viruses is needed. Herein, were studied the performance of an in-house mNGS protocol for routine diagnostics of viral respiratory infections with potential for automated pan-pathogen detection. The sequencing protocol and bioinformatics analysis were designed and optimized, including exogenous internal controls. Subsequently, the protocol was retrospectively validated using 25 clinical respiratory samples. The developed protocol using Illumina NextSeq 500 sequencing showed high repeatability. Use of the National Center for Biotechnology Information's RefSeq database as opposed to the National Center for Biotechnology Information's nucleotide database led to enhanced specificity of classification of viral pathogens. A correlation was established between read counts and PCR cycle threshold value. Sensitivity of mNGS, compared with PCR, varied up to 83%, with specificity of 94%, dependent on the cutoff for defining positive mNGS results. Viral pathogens only detected by mNGS, not present in the routine diagnostic workflow, were influenza C, KI polyomavirus, cytomegalovirus, and enterovirus. Sensitivity and analytical specificity of this mNGS protocol were comparable to PCR and higher when considering off-PCR target viral pathogens. One single test detected all potential viral pathogens and simultaneously obtained detailed information on detected viruses.<br/>Copyright &#xa9; 2020 American Society for Investigative Pathology and the Association for Molecular Pathology

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1. **Review article: gastrointestinal features in COVID-19 and the possibility of faecal transmission.**  
   Tian Yuan Alimentary pharmacology & therapeutics 2020;:No page numbers.

BACKGROUNDThere is little published evidence on the gastrointestinal features of COVID-19.AIMSTo report on the gastrointestinal manifestations and pathological findings of patients with COVID-19, and to discuss the possibility of faecal transmission.METHODSWe have reviewed gastrointestinal features of, and faecal test results in, COVID-19 from case reports and retrospective clinical studies relating to the digestive system published since the outbreak.RESULTSWith an incidence of 3% (1/41)-79% (159/201), gastrointestinal symptoms of COVID-19 included anorexia 39.9% (55/138)-50.2% (101/201), diarrhoea 2% (2/99)-49.5% (146/295), vomiting 3.6% (5/138)-66.7% (4/6), nausea 1% (1/99)-29.4% (59/201), abdominal pain 2.2% (3/138)-6.0% (12/201) and gastrointestinal bleeding 4% (2/52)-13.7% (10/73). Diarrhoea was the most common gastrointestinal symptom in children and adults, with a mean duration of 4.1 ± 2.5 days, and was observed before and after diagnosis. Vomiting was more prominent in children. About 3.6% (5/138)-15.9% (32/201) of adult and 6.5% (2/31)-66.7% (4/6) of children patients presented vomiting. Adult and children patients can present with digestive symptoms in the absence of respiratory symptoms. The incidence of digestive manifestations was higher in the later than in the early stage of the epidemic, but no differences in digestive symptoms among different regions were found. Among the group of patients with a higher proportion of severe cases, the proportion of gastrointestinal symptoms in severe patients was higher than that in nonsevere patients (anorexia 66.7% vs 30.4%; abdominal pain 8.3% vs 0%); while in the group of patients with a lower severe rate, the proportion with gastrointestinal symptoms was similar in severe and nonsevere cases (nausea and vomiting 6.9% vs 4.6%; diarrhoea 5.8% vs 3.5%). Angiotensin converting enzyme 2 and virus nucleocapsid protein were detected in gastrointestinal epithelial cells, and infectious virus particles were isolated from faeces. Faecal PCR testing was as accurate as respiratory specimen PCR detection. In 36% (5/14)-53% (39/73) faecal PCR became positive, 2-5 days later than sputum PCR positive. Faecal excretion persisted after sputum excretion in 23% (17/73)-82% (54/66) patients for 1-11 days.CONCLUSIONSGastrointestinal symptoms are common in patients with COVID-19, and had an increased prevalence in the later stage of the recent epidemic in China. SARS-CoV-2 enters gastrointestinal epithelial cells, and the faeces of COVID-19 patients are potentially infectious.

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1. **Risks of Novel Coronavirus Disease (COVID-19) in Pregnancy; a Narrative Review.**  
   Panahi Latif Archives of academic emergency medicine 2020;8(1):e34.

IntroductionThe outbreak of the new Coronavirus in China in December 2019 and subsequently in various countries around the world has raised concerns about the possibility of vertical transmission of the virus from mother to fetus. The present study aimed to review published literature in this regard.MethodsIn this narrative review, were searched for all articles published in various databases including PubMed, Scopus, Embase, Science Direct, and Web of Science using MeSH-compliant keywords including COVID-19, Pregnancy, Vertical transmission, Coronavirus 2019, SARS-CoV-2 and 2019-nCoV from December 2019 to March 18, 2020 and reviewed them. All type of articles published about COVID-19 and vertical transmission in pregnancy were included.ResultsA review of 13 final articles published in this area revealed that COVID-19 can cause fetal distress, miscarriage, respiratory distress and preterm delivery in pregnant women but does not infect newborns. There has been no report of vertical transmission in pregnancy, and it has been found that clinical symptoms of COVID-19 in pregnant women are not different from those of non-pregnant women.ConclusionOverall, due to lack of appropriate data about the effect of COVID-19 on pregnancy, it is necessary to monitor suspected pregnant women before and after delivery. For confirmed cases both the mother and the newborn child should be followed up comprehensively.

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1. **Safety and efficacy of different anesthetic regimens for parturients with COVID-19 undergoing Cesarean delivery: a case series of 17 patients.**  
   Chen Rong Canadian journal of anaesthesia = Journal canadien d'anesthesie 2020;:No page numbers.

PURPOSETo assess the management and safety of epidural or general anesthesia for Cesarean delivery in parturients with coronavirus disease (COVID-19) and their newborns, and to evaluate the standardized procedures for protecting medical staff.METHODSWe retrospectively reviewed the cases of parturients diagnosed with severe acute respiratory syndrome coronavirus (SARS-CoV-2) infection disease (COVID-19). Their epidemiologic history, chest computed tomography scans, laboratory measurements, and SARS-CoV-2 nucleic acid positivity were evaluated. We also recorded the patients' demographic and clinical characteristics, anesthesia and surgery-related data, maternal and neonatal complications, as well as the health status of the involved medical staff.RESULTSThe clinical characteristics of 17 pregnant women infected with SARS-CoV-2 were similar to those previously reported in non-pregnant adult patients. All of the 17 patients underwent Cesarean delivery with anesthesia performed according to standardized anesthesia/surgery procedures. Fourteen of the patients underwent continuous epidural anesthesia with 12 experiencing significant intraoperative hypotension. Three patients received general anesthesia with tracheal intubation because emergency surgery was needed. Three of the parturients are still recovering from their Cesarean delivery and are receiving in-hospital treatment for COVID-19. Three neonates were born prematurely. There were no deaths or serious neonatal asphyxia events. All neonatal SARS-CoV-2 nucleic acid tests were negative. No medical staff were infected throughout the patient care period.CONCLUSIONSBoth epidural and general anesthesia were safely used for Cesarean delivery in the parturients with COVID-19. Nevertheless, the incidence of hypotension during epidural anesthesia appeared excessive. Proper patient transfer, medical staff access procedures, and effective biosafety precautions are important to protect medical staff from COVID-19.

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1. **SARS-CoV-2 Infection in Children [letter]**  
   New England Journal of Medicine 2020;:10.1056/NEJMc2005073.

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1. **Secular trends and geographic disparities of all-cause mortality among Chinese adolescents aged 10-24 years, between 1953 and 2010**  
   Luo D.M. Zhonghua liu xing bing xue za zhi = Zhonghua liuxingbingxue zazhi 2020;41(2):184-189.

Objective: To analyze the secular trends and geographic disparities of all-cause mortality among Chinese adolescents aged 10-24 years over the period of 1953-2010. <br/>Method(s): Data were extracted from the Chinese National Census in 1953-2010. We calculated the all-cause mortality and annualized rates of the changes. Using the provincial gross domestic product (GDP) per capita as an indicator of regional socio-economic development level, we calculated the Wagstaff normal concentration indices for adolescent mortality. <br/>Result(s): Over the period of 1953-2010, the general patterns of Chinese adolescent mortality appeared higher in males than those in females, higher in the 20-24-year-old than those in the 15-19 year-old and in the 10-14 year-old groups, higher in adolescents from the western than those in the eastern regions. The mortality of adolescents decreased from 554.6/100 000 in 1953-1964 to 55.7/100 000 in 2010 in males and decreased from 488.4/100 000 to 26.7/100 000 in females, respectively. The percentage of decrease for females (94.5%) was higher than that for males (90.0%). In 1981-2010, the highest annualized rate of decline for males was seen in Beijing (4.4%), with the lowest seen in Qinghai (0.1%). For girls, Hubei showed the highest annualized rate of decline (6.4%) while Qinghai the lowest (0.8%). Provinces that with higher mortality tended to have lower annualized rate of decline. The concentration indices for boys were -0.07 (95%CI: -0.11- -0.03), -0.13 (95%CI: -0.18- -0.08), and -0.16 (95%CI: -0.22- -0.10) in 1990, 2000, and 2010, respectively, and were -0.07 (95%CI: -0.13- -0.02), -0.18 (95%CI: -0.24- -0.12), and -0.18 (95%CI: -0.26- -0.09) respectively in girls. The indices among 1990, 2000, and 2010 did not show statistically significantly differences, both for boys and girls (P&gt;0.05). <br/>Conclusion(s): Over the half century, the mortality of Chinese adolescents showed dramatic decreasing trend. However, in terms of death rates, gender and geographic disparities were consistently seen in the adolescents.

1. **Survey on the stunting of children under seven years of age in nine cities of China**  
   Zhang Y.Q. Zhonghua er ke za zhi = Chinese journal of pediatrics 2020;58(3):194-200.

Objective: To survey the children under 7 years of age in nine cities of China for a better understanding of the current situation of childhood stunting. <br/>Method(s): According to a stratified cluster sampling design, a cross-sectional survey on children under 7 years of age was carried out in 9 cities (Beijing, Harbin and Xi'an in northern China; Shanghai, Nanjing and Wuhan in central China; and Guangzhou, Fuzhou and Kunming in southern China) from June to November in 2016. A total of 110 499 children were recruited. Height of children was evaluated using the growth standards for Chinese children (2009 edition) .Children with height less than the 3rd percentile of the growth standards were considered as stunting, and children with height between the 3rd and 10th percentiles of the growth standards were considered as relatively short stature. Chi-square test was used for comparison between data of boys and girls, urban and suburban, as well as among different ages and regions. <br/>Result(s): Totally 113 084 children under 7 years of age should be investigated and actually 110 499 children were investigated, with a rate of 97.7%. The prevalence of stunting was 1.9% (2 141/110 499) among all the children. The prevalence of stunting in urban children (1.6%, 904/55 524) was lower than that in suburban children (2.3%, 1 237/54 975, chi(2)=56.246, P&lt;0.01). The gender difference in stunting prevalence was not statistically significant (1.9% (1 121/57 921) in boys and 1.9% (1 020/52 578) in girls, chi(2)=0.003, P=0.965). The prevalence of stunting decreased with age for children younger than 3 years, from 1.8% (312/17 080) in 0-&lt;1 year of age group to 1.2% (168/13 740) in 2-&lt;3 years of age group, but increased to 2.2% (240/11 073) at 6-&lt;7 years group. Comparison among different regions showed that the stunting prevalence in southern region was higher than those in the central and northern regions (0.9% (193/20 374) in northern urban, 0.8% (154/18 486) in central urban, and 3.3% (557/16 664) in southern urban children), showing a statistical significance (chi(2)=437.736, P&lt;0.01); 1.1% (241/21 924) in northern suburban, 1.4% (227/16 775) in central suburban and 4.7% (769/16 276) in southern suburban children, showing a statistical significance (chi(2)=646.533, P&lt;0.01). In urban areas, the difference between the central and northern regions showed no statistical significance (chi(2)=1.429, P=0.232) and the stunting prevalence of central Chinese children was slightly higher than that of northern Chinese children in suburban areas (chi(2)=5.130, P=0.024). Among the nine cities, the stunting prevalence of Guangzhou (6.1%, 613/10 019) was higher than those of other cities (chi(2)=1 559.64, P&lt;0.01). Among the stunting children, 78.4% (1 679/2 141) were classified as borderline or mild and only 7.2% (154/2 141) were classified as severe. The prevalence of relatively short stature was 5.2% (5 721/110 499). <br/>Conclusion(s): The prevalence of stunting among children under 7 years of age in nine cities of China is low and most of the stunting children were classified as mild; the prevalence of stunting in suburban children is higher than that in urban children; the gender difference show no statistical significance; and the prevalence of stunting in southern Chinese children is higher than those in central and northern Chinese children.

1. **The clinical and genetic research of Waardenburg syndrome type I and II in Chinese families**  
   Liu Q. International Journal of Pediatric Otorhinolaryngology 2020;130:No page numbers.

Objective: Waardenburg Syndrome (WS) is a neurocristopathy with an autosomal dominant mode of inheritance and highly genetic heterogeneity. To date, mutations of PAX3, SOX10, MITF, EDNRB, EDN3 and SNAI2 have been implicated in the pathogenesis of WS. In this study, we aimed to identify pathogenic genes among WS families and to analyze the pathogenic relationship between genotypes and phenotypes. <br/>Method(s): In this study, all six families studied were from Hubei province, China.WS patients underwent screening for all deafness genes including PAX3, SOX10, MITF, EDNRB, EDN3 and SNAI2 using Massively Parallel Sequencing (MPS) and validation of mutations using Sanger sequencing. <br/>Result(s): Clinical evaluation revealed prominent phenotypic variability in Hubei WS patients. Two WS1 families and four WS2 families were diagnosed in six families. Sensorineural hearing loss was the most common, followed by iris pigmentary abnormality. Molecular genetic analysis of the WS genes for six families revealed five novel heterozygous mutations. Two mutations occurred in the PAX3 gene: one nonsense mutation c.667C &gt; T(p.Arg223Ter) and one missense mutation c.220C &gt; T(p.Arg74Cys).One missense mutation c.331T &gt; C (p.Phe111Leu) and one nonsense mutation c.346C &gt; T(p.Gln116Ter) were detected in the SOX10 gene. Two mutations were detected in the MITF gene: one splice site mutation c.859-1G &gt; A and one nonsense mutation c.859G &gt; T(p.Glu287Ter). Among them, the mutations (SOX10 c.331T &gt; C and MITF c.859G &gt; T) were de novo mutations. <br/>Conclusion(s): In this study, six mutations were found to be associated with the phenotype of patients. Our data helped illuminate the phenotypic and genotypic spectrum of WS in Hubei province and could have implications for the genetic counseling of WS in Hubei province.<br/>Copyright &#xa9; 2019

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1. **The different clinical characteristics of corona virus disease cases between children and their families in China - the character of children with COVID-19**  
   Su L. Emerging microbes & infections 2020;9(1):707-713.

This study aims to analyze the different clinical characteristics between children and their families infected with severe acute respiratory syndrome coronavirus 2. Clinical data from nine children and their 14 families were collected, including general status, clinical, laboratory test, and imaging characteristics. All the children were detected positive result after their families onset. Three children had fever (22.2%) or cough (11.2%) symptoms and six (66.7%) children had no symptom. Among the 14 adult patients, the major symptoms included fever (57.1%), cough (35.7%), chest tightness/pain (21.4%), fatigue (21.4%) and sore throat (7.1%). Nearly 70% of the patients had normal (71.4%) or decreased (28.6%) white blood cell counts, and 50% (7/14) had lymphocytopenia. There were 10 adults (71.4%) showed abnormal imaging. The main manifestations were pulmonary consolidation (70%), nodular shadow (50%), and ground glass opacity (50%). Five discharged children were admitted again because their stool showed positive result in SARS-CoV-2 PCR. COVID-19 in children is mainly caused by family transmission, and their symptoms are mild and prognosis is better than adult. However, their PCR result in stool showed longer time than their families. Because of the mild or asymptomatic clinical process, it is difficult to recognize early for pediatrician and public health staff.

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1. **The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak.**  
   Rothan Hussin A. Journal of autoimmunity 2020;:102433.

Coronavirus disease (COVID-19) is caused by SARS-COV2 and represents the causative agent of a potentially fatal disease that is of great global public health concern. Based on the large number of infected people that were exposed to the wet animal market in Wuhan City, China, it is suggested that this is likely the zoonotic origin of COVID-19. Person-to-person transmission of COVID-19 infection led to the isolation of patients that were subsequently administered a variety of treatments. Extensive measures to reduce person-to-person transmission of COVID-19 have been implemented to control the current outbreak. Special attention and efforts to protect or reduce transmission should be applied in susceptible populations including children, health care providers, and elderly people. In this review, we highlights the symptoms, epidemiology, transmission, pathogenesis, phylogenetic analysis and future directions to control the spread of this fatal disease.

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1. **The network investigation on knowledge, attitude and practice about Novel coronavirus pneumonia of the residents in Anhui Province**  
   Chen Y. Zhonghua yu fang yi xue za zhi [Chinese journal of preventive medicine] 2020;54:No page numbers.

Objective: To analyze the current situation of the knowledge, attitudes and practice about Novelcoronavirus pneumonia (NCP) of the residents in Anhui Province. <br/>Method(s): Anonymous network sampling survey was carried out with an electronic questionnaire that designed by the questionnaire star, and a total of 4016 subjects from Anhui province were investigated. The content of the survey includes that the basic information of subjects,the residents' knowledge, attitudes and practice about NCP, as well as their satisfaction with the prevention and control measures adopted by the government and health authorities and the suggestions on future prevention. The questionnaire doesn't involve any privacy information, and all questions were mandatory to ensure the response rate. <br/>Result(s): The M (P(25), P(75)) age the 4016 subjects was 21 (19, 24), and the ranging from 7 to 80 years old. The number of males was1431(35.6%). Social networking tools such as WeChat and QQ were the main sources of epidemic information for residents (97.8%, 3 929 respondents). Residents have a high awareness rate of the main symptoms, transmission routes, using of masks, hand washing and treatment information of NCP, while a low awareness rate of the atypical symptoms. 92.6% of the subjects (n=3 720) think that the outbreak was scary. In terms of psychological behavior scores, the results showed that female (9.38+/-4.81), the urban (9.37+/-5.02) and the medical workers (10.79+/-5.19) had a poorer mental health than the male (8.45+/-5.00) , the rural (8.71+/-4.75) and the non-medical workers (the students: 8.85+/-4.83; public institude workers: 9.02+/-5.08; others: 8.97+/-5.39) (P &lt; 0.05). 71.9% of the residents (n=2 887)were satisfied with the local epidemic control measures. The residents took various of the measures to prevent and control the epidemic. The ratio of residents that could achieve "no gathering and less going out" , "wear masks when going out" and "do not go to crowded and closed places" was up to 97.4% (n=3 913), 93.6% (n=3758) and 91.5% (n=3 673) respectively. <br/>Conclusion(s): The residents in Anhui province have a good KAP about NCP, yet it is necessary to strengthen the community publicity, the mental health maintenance of residents and students' health education.

1. **The transmission and diagnosis of 2019 novel coronavirus infection disease (COVID-19): A Chinese perspective.**  
   Han Yu Journal of medical virology 2020;:No page numbers.

2019 novel coronavirus (SARS-CoV-2), which originated in Wuhan, China, has attracted the world's attention over the last month. The Chinese government has taken emergency measures to control the outbreak and has undertaken initial steps in the diagnosis and treatment of 2019 novel coronavirus infection disease (COVID-19). However, SARS-CoV-2 possesses powerful pathogenicity as well as transmissibility and still holds many mysteries that are yet to be solved, such as whether the virus can be transmitted by asymptomatic patients or by mothers to their infants. Our research presents selected available cases of COVID-19 in China to better understand the transmission and diagnosis regarding this infectious disease.

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1. **The value of flexible bronchoscopy in pulmonary infections of immunosuppressed children**  
   Eroglu-Ertugrul N.G. Clinical Respiratory Journal 2020;14(2):78-84.

Objectives: To demonstrate the value of flexible bronchoscopy (FB) and bronchoalveolar lavage (BAL) when determining causes of lung infection in immunocompromised children; to investigate differences in causes and radiological features of lung infections following bone marrow transplantation (BMT) compared to other immunosuppressive conditions; to evaluate the reliability of radiological findings when predicting the pathogen. <br/>Method(s): We retrospectively evaluated 132 immunosuppressed children who underwent FB and BAL because pulmonary complications between January 1999 and May 2014 at the Hacettepe University Hospital Pediatric Pulmonology Unit. Two groups, Group I (n = 106) and Group II (n = 26), consisted of patients who had primary or secondary immunodeficiency and those who were immunosuppressed because BMT, respectively. Radiological findings before FB and macroscopic and microscopic findings of the procedure were evaluated. <br/>Result(s): FB and BAL were diagnostic in 86/132 patients (65.1%) and the antimicrobial treatment changed for 75/132 patients (56.8%). The most common pathogen was bacteria (Streptococcus pneumoniae was the leading one). Bacteria were more frequent in Group I than Group II (P =.008). No significant difference in radiological findings between Groups I and II was found. Considering all patients, a significant association was detected between viral pathogens and radiologically interstitial infiltration and a ground-glass appearance (P =.003). However, no significant association was detected between bacterial and fungal pathogens and the radiological findings. <br/>Conclusion(s): In immunosuppressed patients, FB and BAL should be evaluated early for clarifying the causative agents. Then, appropriate treatments can be utilised and the side effects and high cost of unnecessary treatment may be mitigated.<br/>Copyright &#xa9; 2019 John Wiley & Sons Ltd

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1. **Timing of permanent tooth emergence and its association with physical growth among children aged from four to seven years in nine cities of China**  
   Zhang Y.Q. Zhonghua er ke za zhi = Chinese journal of pediatrics 2020;58(3):206-212.

Objective: To investigate the timing of permanent tooth emergence and its association with physical growth among children aged 4-7 years in 9 cities of China, and to analyze the trend of permanent teeth development. <br/>Method(s): According to a stratified cluster sampling design, a cross-sectional survey on the timing of permanent tooth emergence children aged 4-7 years was carried out in 9 cities (Beijing, Harbin and Xi'an in northern China; Shanghai, Nanjing and Wuhan in central China; Guangzhou, Fuzhou and Kunming in southern China) from June to October in 2015. A total of 37 973 children (19 035 boys and 18 938 girls) were recruited and were divided into different age groups (4.0-&lt;4.5, 4.5-5.0, 5.0-5.5 and 6.0-&lt;7.0 years of age). The situation of the exfoliation of primary teeth and the eruption of permanent teeth were investigated. Height and weight were measured using the standardized methods. Z-scores of physical growth indicators were calculated using the growth standards for Chinese children in 2009. Probit regression analysis was used to determine the median and percentile age of transition from deciduous to permanent teeth. Chi-square test was used for comparison of categorical data and t test was used for comparison of measurement data between boys and girls, urban and suburban as well as among different ages and regions. Meanwhile, the data from the national survey on physical growth and development of children under 7 years of age in 9 cities of China in 1995 were used to analyze the trends of the permanent teeth development. <br/>Result(s): The rate of transition from deciduous to permanent teeth in 37 973 children aged 4-7 years was higher with age, which was 0.6% (42/7 568) in 4.0-&lt;4.5 years of age group, 30.3% (2 295/7 583) in 5.5-&lt;6.0 years of age group, and 74.5% (5 680/7 627) in 6.0-&lt;7.0 years of age group. The rates of transition from deciduous to permanent teeth in boys were all lower than those of girls except for children aged 4.0-&lt;4.5 years (all P&lt;0.01). The rate of transition from deciduous to permanent teeth in urban children was higher than that in suburban children for older than 5.5-6.0 years of age group in boys and older than 4.5-5.0 years of age group in girls, which was 74.2% (1 427/1 924) in urban boys aged 6.0-&lt;7.0 years and 69.2% (1 305/1 885) in suburban boys aged 6.0-&lt;7.0 years (chi(2)=11.446, P&lt;0.01). The age of transition from deciduous to permanent teeth was 6.00 (95%CI: 5.98-6.01) years and the range of the 3-97 percentile was 4.88-7.11 years of age. The median permanent tooth emergence age of girls was lower than that of boys (5.94 vs. 6.06 years) and the median age of urban children was lower than that of suburban children (5.94 vs. 6.05 years). The median permanent tooth emergence age of southern Chinese children (6.05 years) was higher than that of northern (5.97 years) and central Chinese children (5.97 years). The weight for age Z-scores (WAZ), height for age Z-scores (HAZ) and body mass index for age Z-scores (BMIZ) of children with transition from deciduous to permanent teeth (0.35+/-1.17, 0.32+/-1.00, 0.23+/-1.16) were significantly higher than those of children without transition from deciduous to permanent teeth (0.03+/-1.13, 0.03+/-1.02, 0.04+/-1.13, t=20.81,21.67,12.09, all P&lt;0.05). In comparison with the data in 1995, data in 2015 showed that the rate of transition from deciduous to permanent teeth was higher, for example, the rate of urban boys aged 6.0-&lt;7.0 years group was 63.8% (1 146/1 796) in 1995, and increased to 74.2% (1 427/1 924) in 2015 (chi(2)=46.748, P&lt;0.01). The median permanent tooth emergence age decreased by 0.24 years in 2015 as compared with that in 1995. <br/>Conclusion(s): The development of permanent teeth is earlier in girls than in boys, earlier in urban children than in suburban children and slightly delay in southern children than in central and northern Chinese children. In addition, the development of permanent teeth, which is related to the physical growth, slightly accelerate in China during the past 20 years.

1. **Transmissible Gastroenteritis Virus Infection Up-Regulates FcRn Expression via Nucleocapsid Protein and Secretion of TGF-beta in Porcine Intestinal Epithelial Cells**  
   Qian S. Frontiers in Microbiology 2020;10:No page numbers.

Transmissible gastroenteritis virus (TGEV) is a porcine intestinal coronavirus that causes fatal severe watery diarrhea in piglets. The neonatal Fc receptor (FcRn) is the only IgG transport receptor, its expression on mucosal surfaces is triggered upon viral stimulation, which significantly enhances mucosal immunity. We utilized TGEV as a model pathogen to explore the role of FcRn in resisting viral invasion in overall intestinal mucosal immunity. TGEV induced FcRn expression by activating NF-kappaB signaling in porcine small intestinal epithelial (IPEC-J2) cells, however, the underlying mechanisms are unclear. First, using small interfering RNAs, we found that TGEV up-regulated FcRn expression via TLR3, TLR9 and RIG-I. Moreover, TGEV induced IL-1beta, IL-6, IL-8, TGF-beta, and TNF-alpha production. TGF-beta-stimulated IPEC-J2 cells highly up-regulated FcRn expression, while treatment with a JNK-specific inhibitor down-regulated the expression. TGEV nucleocapsid (N) protein also enhanced FcRn promoter activity via the NF-kappaB signaling pathway and its central region (aa 128-252) was essential for FcRn activation. Additionally, N protein-mediated FcRn up-regulation promotes IgG transcytosis. Thus, TGEV N protein and TGF-beta up-regulated FcRn expression, further clarifying the molecular mechanism of up-regulation of FcRn expression by TGEV.<br/>&#xa9; Copyright &#xa9; 2020 Qian, Gao, Cao, Yang, Cui, Li, Meng, He and Li.

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1. **Using virtual reality to identify and modify risky pedestrian behaviors amongst Chinese children.**  
   Luo Heng Traffic injury prevention 2020;21(1):108-113.

Objective: China has a high fatality rate for child pedestrians, which highlights the necessity of implementing more effective pedestrian safety training programs in elementary schools. We thus investigated the efficacy of using virtual reality (VR) as an instructional technology to identify and modify risky pedestrian behaviors among Chinese children.Methods: Seventy-nine children (grades 1 through 3) from three elementary schools in Hubei province participated and were categorized into urban (n = 20), migrant (n = 29), or rural (n = 30) students based on the schools' locations. They completed a VR program comprising three street-crossing challenges to measure five pedestrian behaviors. The participants first attempted to complete the challenges by themselves in the first-time trial (T1) and then engaged in a personalized debriefing session before undertaking the challenges a second time (T2). Pedestrian performance for the two trials was compared by school location and grade level as between-subjects factors, and the rationale behind risky pedestrian behaviors was inductively analyzed.Results: Three risky pedestrian behaviors were observed in the program: dashing into the street, crossing on a blinking green light, and failing to check for traffic. Potential reasons for these behaviors included a lack of knowledge of road signs and traffic rules and the absence of daily adult supervision. The overall pedestrian performance increased from T1 to T2 with a moderate effect size (Ƞp2 = 0.59, p < .001). A significant main effect of the trials was found for the three pedestrian behaviors (for all values, p < .001); however, interactions of trial by location and trial by grade were nonsignificant in all univariate tests (for all values, p ≥ .05).Conclusions: VR is an effective technology to diagnose and correct risky pedestrian behaviors among Chinese children when accompanied with individual debriefing and repetitive practices. School location and grade level had no significant influence on children's pedestrian performance and learning outcomes, indicating the ubiquity of the pedestrian safety problem and the need for more effective instructional interventions.

1. **Viral and bacterial coinfection among hospitalized children with respiratory tract infections.**  
   Liu Junxiao American journal of infection control 2020;:No page numbers.

BACKGROUNDThe epidemiology of Mycoplasma pneumoniae (MP) and local dominant etiologies of pathogens that cause respiratory tract infections (RTIs) among central China children (≤14 years old) hospitalized are poorly understood.METHODSA total of 10,429 specimens were analyzed, and IgM antibodies against 9 respiratory pathogens including MP were detected using indirect immunofluorescence assay from serum.RESULTSIt showed that 59.3% of the enrolled children were positive for at least 1 pathogen; highest detection rates included those between 3 and <6 years of age (70.4%), female (63.2%), and who were hospitalized in 2014 (80.9%). The most predominant pathogen was MP (45.6%), followed by Parainfluenza viruses (PIVs) (22.6%) and influenza B viruses (IFVB) (14.7%). Coinfection was observed in 2,907 specimens (27.9%); the coinfection combination containing MP and PIVs had the highest detection rate of 15%, followed by MP and IFVB as well as IFVB and PIVs.CONCLUSIONSMP was the most commonly detected bacteria among hospitalized children, which should be included in the differential diagnosis for hospitalized children with RTI. These findings will contribute to the effective prevention and therapeutic approaches of pathogens among local children suffering from RTI.

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1. **Viral Surveillance of Children with Acute Respiratory Infection in Two Main Hospitals in Northern Jordan, Irbid, during Winter of 2016**  
   Awad S. Journal of Pediatric Infectious Diseases 2020;15(1):1-10.

Acute lower respiratory infection (ALRI) is a major cause of morbidity and mortality worldwide. Data regarding the etiology of acute respiratory infection (ARI) is scarce in developing countries. The aim of this study was to identify the viral etiology of ARI/ALRI in hospitalized children and factors associated with increased length of stay (LoS) and severe disease presentation in Northern Jordan. This was a prospective viral surveillance study using real-time reverse transcriptase-polymerase chain reaction in children younger than 5 years admitted with ARI to two main hospitals in Northern Jordan during the winter of 2016. Nasopharyngeal swabs were obtained and tested for respiratory syncytial virus (RSV) and other viruses. Demographic and clinical characteristics of RSV-positive patients were compared with those of RSV-negative patients. There were 479 patients hospitalized with ARI. Their mean age (standard deviation) was 10.4 (11.6) months. 53.9% tested positive for at least one virus, with RSV being the most commonly detected virus (34%). Compared with RSV-negative patients, RSV-positive patients were younger, more likely to have chronic lung disease, and more likely to present with cough, rhinorrhea, difficulty in breathing, retraction, flaring, grunting, wheezing, and a higher respiratory rate. Prematurity, presence of a chronic illness, oxygen saturation &lt; 90%, and atelectasis and consolidation on chest X-rays were significantly associated with an increased mean LoS. Patients with a history of prematurity had higher risk of severe disease (odds ratio = 2.6; 95% confidence interval: 1.5, 4.7; p = 0.001). Compared with patients 6 months old and younger, patients aged 6.1 to 12 months were less likely to have severe disease. Human metapneumovirus (HMPV)-positive ALRI was associated with increased odds of severe disease. Viruses are recognized as etiological agent of ARI/ALRI-associated morbidity in developing countries that need more attention and implementation of targeted strategies for prevention and detection. HMPV can be a cause of severe ALRI.<br/>Copyright &#xa9; 2020 by Georg Thieme Verlag KG, Stuttgart New York.

1. **Why are pregnant women susceptible to COVID-19? An immunological viewpoint**  
   Liu H. Journal of Reproductive Immunology 2020;139:No page numbers.

The 2019 novel coronavirus disease (COVID-19) was first detected in December 2019 and became epidemic in Wuhan, Hubei Province, China. COVID-19 has been rapidly spreading out in China and all over the world. The virus causing COVID-19, SARS-CoV-2 has been known to be genetically similar to severe acute respiratory syndrome coronavirus (SARS-CoV) but distinct from it. Clinical manifestation of COVID-19 can be characterized by mild upper respiratory tract infection, lower respiratory tract infection involving non-life threatening pneumonia, and life-threatening pneumonia with acute respiratory distress syndrome. It affects all age groups, including newborns, to the elders. Particularly, pregnant women may be more susceptible to COVID-19 since pregnant women, in general, are vulnerable to respiratory infection. In pregnant women with COVID-19, there is no evidence for vertical transmission of the virus, but an increased prevalence of preterm deliveries has been noticed. The COVID-19 may alter immune responses at the maternal-fetal interface, and affect the well-being of mothers and infants. In this review, we focused on the reason why pregnant women are more susceptible to COVID-19 and the potential maternal and fetal complications from an immunological viewpoint.<br/>Copyright &#xa9; 2020 Elsevier B.V.

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1. **[A pathological report of three COVID-19 cases by minimally invasive autopsies].**  
   Yao X. H Zhonghua bing li xue za zhi = Chinese journal of pathology 2020;49(0):E009.

Objective: To investigate the pathological characteristics and the clinical significance of novel coronavirus (2019-nCoV)-infected pneumonia (termed by WHO as corona virus disease 2019, COVID-19). Methods: Minimally invasive autopsies from lung, heart, kidney, spleen, bone marrow, liver, pancreas, stomach, intestine, thyroid and skin were performed on three patients died of novel coronavirus pneumonia in Chongqing, China. Hematoxylin and eosin staining (HE) and histochemical staining were performed to investigate the pathological changes of indicated organs or tissues. Immunohistochemical staining was conducted to evaluate the infiltration of immune cells as well as the expression of 2019-nCoV proteins. Real time PCR was carried out to detect the RNA of 2019-nCoV. Results: Various damages were observed in the alveolar structure, with minor serous exudation and fibrin exudation. Hyaline membrane formation was observed in some alveoli. The infiltrated immune cells in alveoli were majorly macrophages and monocytes. Moderate multinucleated giant cells, minimal lymphocytes, eosinophils and neutrophils were also observed. Most of infiltrated lymphocytes were CD4-positive T cells. Significant proliferation of type II alveolar epithelia and focal desquamation of alveolar epithelia were also indicated. The blood vessels of alveolar septum were congested, edematous and widened, with modest infiltration of monocytes and lymphocytes. Hyaline thrombi were found in a minority of microvessels. Focal hemorrhage in lung tissue, organization of exudates in some alveolar cavities, and pulmonary interstitial fibrosiswere observed. Part of the bronchial epithelia were exfoliated. Coronavirus particles in bronchial mucosal epithelia and type II alveolar epithelia were observed under electron microscope. Immunohistochemical staining showed that part of the alveolar epithelia and macrophages were positive for 2019-nCoV antigen. Real time PCR analyses identified positive signals for 2019-nCoV nucleic acid. Decreased numbers of lymphocyte, cell degeneration and necrosis were observed in spleen. Furthermore, degeneration and necrosis of parenchymal cells, formation of hyaline thrombus in small vessels, and pathological changes of chronic diseases were observed in other organs and tissues, while no evidence of coronavirus infection was observed in these organs. Conclusion: s The lungs from novel coronavirus pneumonia patients manifest significant pathological lesions, including the alveolar exudative inflammation and interstitial inflammation, alveolar epithelium proliferation and hyaline membrane formation. While the 2019-nCoV is mainly distributed in lung, the infection also involves in the damages of heart, vessels, liver, kidney and other organs. Further studies are warranted to investigate the mechanism underlying pathological changes of this disease.

1. **[Analysis of CT features of 15 children with 2019 novel coronavirus infection].**  
   Feng K. Zhonghua er ke za zhi = Chinese journal of pediatrics 2020;58(4):275-278.

Objective: To explore imaging characteristics of children with 2019 novel coronavirus (2019-nCoV) infection. Methods: A retrospective analysis was performed on clinical data and chest CT images of 15 children diagnosed with 2019-nCoV infection. They were admitted to the Third People's Hospital of Shenzhen from January 16 to February 6, 2020. The distribution and morphology of pulmonary lesions on chest CT images were analyzed. Results: Among the 15 children, 5 were males and 10 females, aged from 4 to 14 years. Five of the 15 children were febrile and 10 were asymptomatic on the first visit. The first nasal or pharyngeal swab samples in all the 15 cases were positive for 2019-nCoV nucleic acid. For their first chest CT images, 6 patients had no lesions, while 9 patients had pulmonary inflammatory lesions. Seven cases had small nodular ground glass opacities and 2 cases had speckled ground glass opacities. After 3 to 5 days of treatment, 2019-nCoV nucleic acid in a second respiratory sample turned negative in 6 cases. Among them, chest CT images showed less lesions in 2 cases, no lesion in 3 cases, and no improvement in 1 case. The remaining 9 cases were still positive in a second nucleic acid test. Six patients showed similar chest CT inflammation, while 3 patients had new lesions, which were all small nodular ground glass opacities. Conclusions: The early chest CT images of children with 2019-nCoV infection are mostly small nodular ground glass opacities. The clinical symptoms of children with 2019-nCoV infection are nonspecific. Dynamic reexamination of chest CT and nucleic acid are important.

1. **[Clinical analysis of 31 cases of 2019 novel coronavirus infection in children from six provinces (autonomous region) of northern China].**  
   Wang D. Zhonghua er ke za zhi = Chinese journal of pediatrics 2020;58(4):E011.

Objective: To analyze the epidemiological history, clinical manifestations, treatment and the short-term prognosis of 31 cases of 2019 novel coronavirus(2019-nCoV) infection in children from six provinces (autonomous region) in northern China. Methods: A retrospective analysis of the epidemiological history, clinical symptoms, signs, laboratory examinations, chest imaging, treatment and the short-term prognosis of 31 cases of 2019-nCoV was conducted. The patients were diagnosed between January 25th, 2020 and February 21st, 2020 in 21 hospitals in 17 cities of six provinces(autonomous region) of Shaanxi, Gansu, Ningxia, Hebei, Henan and Shandong. Results: The age of the 31 children with 2019-nCoV infection was 7 years and 1 month (6 months -17 years). Nine cases (29%) were imported cases. Other 21 cases (68%) had contact with confirmed infected adults. One case (3%) had contact with asymptomatic returnees from Wuhan. Among the 31 children, 28 patients (90%) were family cluster cases. The clinical types were asymptomatic type in 4 cases (13%), mild type in 13 cases (42%), and common type in 14 cases (45%). No severe or critical type existed. The most common symptom was fever (n=20, 65%), including 1 case of high fever, 9 cases of moderate fever, 10 cases of low fever. Fever lasted from 1 day to 9 days. The fever of fifteen cases lasted for ≤3 d, while in other 5 cases lasted > 3 d. Other symptoms included cough (n=14, 45%), fatigue (n=3, 10%) and diarrhea (n=3, 9%). Pharyngalgia, runny nose, dizziness, headache and vomiting were rare. In the early stage, the total leukocytes count in peripheral blood decreased in 2 cases (6%), the lymphocytes count decreased in 2 cases (6%), and the platelet count increased in 2 cases (6%).Elevation of C-reactive protein (10%, 3/30), erythrocyte sedimentation rate(19%,4/21), procalcitonin(4%,1/28), liver enzyme(22%, 6/27) and muscle enzyme (15%, 4/27) occurred in different proportions. Renal function and blood glucose were normal. There were abnormal chest CT changes in 14 cases, including 9 cases with patchy ground glass opacities and nodules, mostly located in the lower lobe of both lungs near the pleural area. After receiving supportive treatment, the viral nucleic acid turned negative in 25 cases within 7-23 days. Among them, 24 children (77%) recovered and were discharged from hospital. No death occurred. Conclusions: In this case series, 2019-nCoV infections in children from six provinces (autonomous region) in northern China are mainly caused by close family contact. Clinical types are asymptomatic, mild and common types. Clinical manifestations and laboratory examination results are nonspecific. Close contact history of epidemiology, nucleic acid detection and chest imaging are important bases for diagnosis. After general treatment, the short-term prognosis is good.

1. **[Clinical features and chest CT findings of coronavirus disease 2019 in infants and young children].**  
   Zhou Yun Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics 2020;22(3):215-220.

OBJECTIVETo study the clinical features and chest CT findings of coronavirus disease 2019 (COVID-19) in infants and young children.METHODSA retrospective analysis was performed for the clinical data and chest CT images of 9 children, aged 0 to 3 years, who were diagnosed with COVID-19 by nucleic acid detection between January 20 and February 10, 2020.RESULTSAll 9 children had an epidemiological history, and family clustering was observed for all infected children. Among the 9 children with COVID-19, 5 had no symptoms, 4 had fever, 2 had cough, and 1 had rhinorrhea. There were only symptoms of the respiratory system. Laboratory examination showed no reductions in leukocyte or lymphocyte count. Among the 9 children, 6 had an increase in lymphocyte count and 2 had an increase in leukocyte count. CT examination showed that among the 9 children, 8 had pulmonary inflammation located below the pleura or near the interlobar fissure and 3 had lesions distributed along the bronchovascular bundles. As for the morphology of the lesions, 6 had nodular lesions and 7 had patchy lesions; ground glass opacity with consolidation was observed in 6 children, among whom 3 had halo sign, and there was no typical paving stone sign.CONCLUSIONSInfants and young children with COVID-19 tend to have mild clinical symptoms and imaging findings not as typical as those of adults, and therefore, the diagnosis of COVID-19 should be made based on imaging findings along with epidemiological history and nucleic acid detection. Chest CT has guiding significance for the early diagnosis of asymptomatic children.

1. **[Clinical features of 2019 novel coronavirus pneumonia in the early stage from a fever clinic in Beijing].**  
   Zhang M. Q Zhonghua jie he he hu xi za zhi = Zhonghua jiehe he huxi zazhi = Chinese journal of tuberculosis and respiratory diseases 2020;43(3):215-218.

Objective: To summarize and analyze the clinical and imaging characteristics of patients with 2019 novel coronavirus pneumonia in the early stage in Beijing. Methods: A retrospective analysis of clinical and imaging data of 9 patients with 2019 novel coronavirus infection diagnosed in one fever clinicic in Beijing from January 18, 2020 to February 3, 2020. Results: 5 male and 4 female was included in those 9 patients, whose median age was 36 years, and the age range from 15 to 49 years. 8 of these patients had no underlying disease and one suffered from diabetes. 7 patients had a history of travel to Wuhan City or Hubei Province, and one patient was a medical staff. Two family clustered was found. The incubation period was 1 to 6 days. The clinical manifestations were fever in 8 cases (8/9) , dry cough in 5 cases (5/9) , pharyngalgia in 4 cases (4/9) , fatigue in 4 cases (4/9) , body soreness in 4 cases (4/9) , and blocked or watery nose in 1 case (1/9) . Six patients (6/9) had abnormal cell peripheral blood, of which 3 (3/9) had an increased monocyte count, 2 (2/9) had a reduced lymphocyte, and 1 (1/9) had an increased leukocyte count, while the 3 patients had normal cell blood routines. The median of CRP was 16.3 mg/L, including 5 patients with slightly elevated (5/9) , 4 patients with normal values (4/9) . the results of procalcitonin test were negative in5 patients. Three patients were examined by chest X-ray examination, one of which was normal, one case showed infiltrates of right upper lung, and another showed in right lower lung. All patients underwent chest HRCT. And 7 cases (7/9) showed multiple ground glass exudation, including 5 cases (5/7) involved bilateral lungs, 2 cases (2/7) involved unilateral lung, 3 cases (3/7) with patchy consolidation, and 2 cases (2/9) showed no abnormality. Conclusions: The patents with 2019 novel coronavirus pneumonia in this study generally have an epidemiological history. The clinical manifestations are fever and cough. Peripheral white blood cell counts were most normal And PCT were all negative. Chest HRCT manifested as multiple ground-glass opacities with partly consolidation. Some patients had normal chest radiographs but HRCT showed pneumonia. Some patients had no pneumonia on chest HRCT.

1. **[Construction and evaluation of a novel diagnosis process for 2019-Corona Virus Disease].**  
   Xiong Z. Zhonghua yi xue za zhi 2020;100(0):E019.

Objective: To construct and evaluate a diagnosis process for 2019-Corona Virus Disease (COVID-19). Methods: A continuous cohort of adults and adolescent (≥12 years) who screened COVID-19 was included in Xiangya Hospital of Central South University from January 23 to February 3, 2020 in which cases were divided the test library and the verification library. Their gender, age, onset time were recorded. Take epidemiological history, fever, and the blood lymphocytes decline as clinical indicators, used CT to evaluate the possibility of COVID-19 and range of lung involvement. According to the current national standards, throat swabs of suspected cases were collected and the nucleic acid of COVID-19 was detected by reverse transcription-polymerase chain reaction (RT-PCR). The Xiangya process was constructed according to multi-index, compared with clinical indicators, CT results and national standards, the efficiency of detecting confirmed cases were verified in the test and verification library. Results: A continuous cohort of 382 adults who screened COVID-19 was included in which 261 cases were in the test library and 121 cases were in the verification library. In the 382 cases, 192 were males (50.3%) and 190 were females (49.7%), with a median age of 35 years (range: 15-92 years). There were 183 cases (47.9%) with epidemiological history, 275 cases (72.0%) with fever, 212 cases (55.5%) with decreased hemolytic lymphocytes, CT positive 114 cases (29.8%), 43 cases (11.3%) with positive CT-COVID-19, and 30 cases (7.9%) with positive throat swab nucleic acid. Compared with clinical indicators, the sensitivity and specificity of CT were 0.950 and 0.704, respectively. The accuracy of CT to make a definite diagnosis was higher than that of epidemiological history, fever, and blood lymph count decline (0.809 vs 0.660, 0.532, 0.596, P=0.001, 0.002, 0.003, respectively). The sensitivity of this process and the program recommended by the Health Commission all were high (all were 1.000) , and the specificity and accuracy of the process were higher than the program recommended by the Health Commission (0.872 vs 0.765, 0.778 vs 0.592, both P<0.001). The CT-COVID-19 would have reduced the missed diagnosis rate caused by false negative of nucleic acid test (31 vs 64, difference rate 51.6%), the positive rate of nucleic acid test was 64.5% (20/31). In validation library, the specificity and accuracy of the Xiangya process was 0.967, the positive rate of nucleic acid test was 76.9% (10/13). Conclusions: The Xiangya process can predict the nucleic acid test results of COVID-19 well, and can be applied as a reliable basis for confirmed cases detection in adults and adolescent (≥12 years) in areas other than Hubei during the epidemic period of COVID-19. The cohort size needs to be increased for further validation.

1. **[Effects of parental rearing patterns and their consistency on the emotional and behavioral problems of preschool children].**  
   Zou C. S Zhonghua yu fang yi xue za zhi [Chinese journal of preventive medicine] 2020;54(3):283-288.

Objective: To explore the effect of parental rearing patterns and their consistency on the emotional and behavioral problems of preschool children. Methods: From October to November 2017, 27 987 children aged 3 to 6 years old from 109 kindergartens in 11 cities of Hubei, Anhui and Jiangsu Provinces were selected by using the cluster sampling method. A total of 27 200 valid questionnaires which were completed by subjects' parents were collected. The emotional and behavioral problems of preschool children were collected by "strengths and difficulties questionnaire" and the parental rearing patterns were evaluated by the "Parental Behavior Scale". The differences in emotional and behavioral abnormality rates of preschool children with different characteristics were analyzed; with emotional and behavioral problems as dependent variables and parental support/participation and compulsion/hostility as independent variables, the multivariate logistic regression model was used to analyze the effect of parental rearing patterns and their consistency on the emotional and behavioral problems of preschool children. Results: The age of children was (4.35±0.96) years old, and 51.4% of children were 13 975 males. There were 24 634 (90.6%) urban children and 17 916 (65.9%) only children. Both parents with strong support/participation accounted for 14.9%, and those with poor support/participation accounted for 11.9%; both parents with strong compulsion/hostility accounted for 15.2%, and those with low compulsion/hostility accounted for 11.3%. The rates of emotional symptoms, conduct behavior, hyperactive behavior, peer interaction, total difficulty score, and abnormal prosocial behavior of preschool children were 9.5%, 9.5%, 18.2%, 24.5%, 11.2%, and 10.2%, respectively. The multivariate logistic regression model analysis showed that after adjusting for gender, only child, living area, family economic status, mother's age and education level, father's education level, and other factors, compared with fathers/mothers with strong support/participation and low compulsion/hostility and parents with strong support/participation and low compulsion/hostility, preschool children who had fathers/mothers with poor support/participation and strong compulsion/hostility or parents with poor support/participation and strong compulsion/hostility were more likely to have emotional symptoms, conduct behavior, hyperactive behavior, peer interaction, total difficulty score, and abnormal prosocial behavior (P<0.05). Conclusions: Parental rearing patterns and their consistency are related to the emotional and behavioral problems of preschool children.

1. **[Emergency response plan for the neonatal intensive care unit during epidemic of 2019 novel coronavirus].**  
   Pediatric Committee Medical Association of Chinese People′s Liberation Army Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics 2020;22(2):91-95.

2019 novel coronavirus (2019-nCoV) infection has been spreading in China since December 2019. Neonates are presumably the high-risk population susceptible to 2019-nCoV due to immature immune function. The neonatal intensive care unit (NICU) should be prepared for 2019-nCoV infections as far as possible. The emergency response plan enables the efficient response capability of NICU. During the epidemic of 2019-nCoV, the emergency response plan for the NICU should be based on the actual situation, including diagnosis, isolation, and treatment, as well as available equipment and staffing, and take into account the psychosocial needs of the families and neonatal care staff.

1. **[Epidemiological characteristics of 2019 novel coronavirus family clustering in Zhejiang Province].**  
   Sun W. W Zhonghua yu fang yi xue za zhi [Chinese journal of preventive medicine] 2020;54(0):E027.

Objective: Family clusters of Novel coronavirus pneumonia in Zhejiang province were analyzed to provide epidemiological basis for disease control. Methods: The data of family clusters occurred from January 20 to February 10 in Zhejiang Province were collected. Descriptive analysis was used to analyze the clinical symptoms and the serial interval between the subsequent cases and the index cases. Chi-square test was used to analyze the age distribution, gender distribution and the relationship between the subsequent cases and the index cases. Results: 391 cases including 148 family index cases, 189 subsequent cases and 54 asymptomatic infected cases. The clinical symptoms between family index cases and subsequent cases are similar, fever is the most common symptoms in the two groups 114 (77.03%) and 92 (48.68%) respectively, the cases with diarrhea symptoms accounted for the least proportion, which were 7 (4.73%) and 5 (2.65%). The serial interval between the family index cases and the subsequent cases [M (P(25), P(75))] was 3.00 (1.00, 6.00) days. Family secondary attack rate for subsequent cases and asymptomatic infected cases are 31.61% and 43.20% respectively, the family secondary attack rate of the spouses of the family index cases is 63.87%, and are higher than that of their children (30.53%), parents (28.37%) and other family members (20.93%), the difference was statistically significant. Conclusion: 2019 novel coronavirus has shorter serial interval and higher family secondary attack rate, the secondary attack rate of spouses is higher than other family members.

1. **[Expert recommendations on the management of patients with advanced non-small cell lung cancer during epidemic of COVID-19 (Trial version)].**  
   Lung Cancer Study Group Chinese Thoracic Society Chinese Medical Association Zhonghua jie he he hu xi za zhi = Zhonghua jiehe he huxi zazhi = Chinese journal of tuberculosis and respiratory diseases 2020;43(0):E031.

The outbreak of coronavirus disease 2019 (COVID-19) has become a public health emergency of major international concern. Given the systemic immunosuppressive state caused by malignancy and anticancer treatments, patients with advanced lung cancer may be at a higher risk of COVID-19 infection. During epidemic of COVID-19, a guideline for the optimal management of patients with advanced lung cancer urgently needs to be proposed to distinguish the symptoms of COVID-19 and the side effects of antitumor drugs. This network questionnaire survey was conducted on the lung cancer group of the Chinese Thoracic Society, Chinese Medical Association; the lung cancer group of the Chinese Society of Clinical Oncology Youth Committee; and the Chinese Respiratory Oncology Collaboration. 321 valid questionnaires were received. Based on the guidelines on lung cancer and the results of the questionnaires, a consensus was reached. During the epidemic of COVID-19, We recommended that patients with advanced NSCLC should be treated as outpatients as possible at the nearest medical center; Patients who need to be hospitalized for antitumor treatment should be excluded from COVID-19 infection; More intensive attention should be paid to identification of COVID-19-related symptoms and adverse reactions caused by the malignancy or antitumor treatments. Stronger personal protection should be made for advanced NSCLC patients; An intentional postponing of antitumor treatment should be considered according to patient performance status. Treatment strategies should be made according to different types of advanced NSCLC patients and efficacy and toxicity of drugs.

1. **[Management plan for prevention and control of novel coronavirus pneumonia among children in Xiangya Hospital of Central South University].**  
   Peng Jing Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics 2020;22(2):100-105.

Since December 2019, an epidemic of novel coronavirus pneumonia (NCP) has occurred in China. How to effectively prevent and control NCP among children with limited resources is an urgent issue to be explored. Under the unified arrangement of the Xiangya Hospital of Central South University, the Department of Pediatrics has formulated an action plan with Xiangya unique model to prevent and control NCP among children according to the current epidemic situation and diagnostic and therapeutic program in China.

1. **[Oral Health Management of Children during the Epidemic Period of Coronavirus Disease 2019].**  
   Wang Yan Sichuan da xue xue bao. Yi xue ban = Journal of Sichuan University. Medical science edition 2020;51(2):151-154.

Coronavirus disease 2019 (COVID-19) is becoming a major public health event affecting China and even the whole world. During the epidemic period of corona virus disease, appropriate oral health management and disease prevention of children is very important for children's oral and general health. In order to prevent the occurrence of cross-infection and epidemic spreading of COVID-19 during dental practice, the recommendations to parents include: not only training children to maintain hand hygiene at home, exercise appropriately, strengthen physical resistance, but also helping children develop good oral and diet habit such as effective brushing and flossing to avoid oral diseases and emergency. If non-emergency oral situation occur, parents could assist their child to take home based care such as rinsing to relieve the symptoms. When oral emergencies such as acute pulpitis, periapical periodontitis, dental trauma, oral and maxillofacial infections happen, parents and children should visit dental clinic in time with correct personal protection. During the epidemic period, children's oral emergencies should be treated in accordance with current guidelines and control of COVID-19.

1. **[Recommendation for the diagnosis and treatment of novel coronavirus infection in children in Hubei (Trial version 1)].**  
   Pediatric Branch of Hubei Medical Association Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics 2020;22(2):96-99.

Since December 2019, a cluster of patients have been diagnosed to be infected with 2019 novel coronavirus (2019-nCoV) in Wuhan, China. The epidemic has been spreading to other areas of the country and abroad. A few cases have progressed rapidly to acute respiratory distress syndrome and/or multiple organ function failure. The epidemiological survey has indicated that the general population is susceptible to 2019-nCoV. A total of 14 children (6 months to 14 years of age, including 5 cases in Wuhan) have been confirmed to be infected with 2019-nCoV in China so far. In order to further standardize and enhance the clinical management of 2019-nCoV infection in children, reduce the incidence, and decrease the number of severe cases, we have formulated this diagnosis and treatment recommendation according to the recent information at home and abroad.

1. **[Recommendations for the diagnosis, prevention and control of the 2019 novel coronavirus infection in children (first interim edition)].**  
   Society of Pediatrics Chinese Medical Association Zhonghua er ke za zhi = Chinese journal of pediatrics 2020;58(0):E004.

1. **[Recommendations on the clinical management of the COVID-19 infection by the «new coronavirus» SARS-CoV2. Spanish Paediatric Association working group].**  
   Calvo Cristina Anales de pediatria (Barcelona, Spain : 2003) 2020;:No page numbers.

On 31 December 2019, the Wuhan Municipal Committee of Health and Healthcare (Hubei Province, China) reported that there were 27 cases of pneumonia of unknown origin with symptoms starting on the 8 December. There were 7 serious cases with common exposure in market with shellfish, fish, and live animals, in the city of Wuhan. On 7 January 2020, the Chinese authorities identified that the agent causing the outbreak was a new type of virus of the Coronaviridae family, temporarily called «new coronavirus», 2019-nCoV. On January 30th, 2020, the World Health Organisation (WHO) declared the outbreak an International Emergency. On 11 February 2020 the WHO assigned it the name of SARS-CoV2 and COVID-19 (SARS-CoV2 and COVID-19). The Ministry of Health summoned the Specialties Societies to prepare a clinical protocol for the management of COVID-19. The Spanish Paediatric Association appointed a Working Group of the Societies of Paediatric Infectious Diseases and Paediatric Intensive Care to prepare the present recommendations with the evidence available at the time of preparing them.

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1. **[Retracted: Clinical and epidemiological characteristics of 34 children with 2019 novel coronavirus infection in Shenzhen].**  
   Wang X. F Zhonghua er ke za zhi = Chinese journal of pediatrics 2020;58(0):E008.

Objective: To describe the characteristics of clinical manifestations and epidemiology of children with 2019 novel coronavirus (2019-nCoV) infection. Methods: All 34 children with laboratory-confirmed 2019-nCoV infection by quantitative real-time reverse transcription-PCR through nasopharyngeal swab specimens were admitted to the Third People's Hospital of Shenzhen from January 19 to Febuary 7, 2020. Clinical data and epidemiological history of these patients were retrospectively collected and analyzed. Results: Among the 34 cases, 14 were males, and 20 were females. The median age was 8 years and 11 months. No patients had underlying diseases. There were 28 children (82%) related with a family cluster outbreak. There were 26 children (76%) with a travel or residence history in Hubei Province. These patients could be categorized into different clinical types, including 22 (65%) common cases, 9 (26%) mild cases and 3 (8.8%) asymptomatic cases. No severe or critical cases were identified. The most common symptoms were fever (17 cases, 50%) and cough (13 cases, 38% ). In the 34 cases, the white blood cell counts of 28 cases (82%) were normal. Five cases had white blood cell counts more than 10×10(9)/L. One case had white blood cell counts less than 4×10(9)/L. Neutropenia and lymphopenia was found in one case, respectively. C-reactive protein levels and erythrocyte sedimentation rates were elevated in 1 and 5 case, respectively. Elevated procalcitonin was found in 1 case and D-Dimer in 3 cases. The levels of lactic dehydrogenase (LDH) were more than 400 U/L in 10 cases. The CT images of these patients showed bilateral multiple patchy or nodular ground-glass opacities and/or infiltrating shadows in middle and outer zone of the lung or under the pleura. Twenty patients were treated with lopinavir and ritonavir. Glucocorticoids and immunoglobulin were not used in any cases. All the cases improved and were discharged from hospital. Further following up was need. Conclusions: The clinical manifestations in children with 2019-nCoV infection are non-specific and are milder than that in adults. Chest CT scanning is heplful for early diagnosis. Children's infection is mainly caused by family cluster outbreak and imported cases. Family daily prevention is the main way to prevent 2019-nCoV infection.

1. **[SARS-CoV-2 infection during pregnancy. Information and proposal of management care. CNGOF].**  
   Peyronnet V. Gynecologie, obstetrique, fertilite & senologie 2020;:No page numbers.

A new coronavirus (SARS-CoV-2) highlighted at the end of 2019 in China is spreading across all continents. Most often at the origin of a mild infectious syndrome, associating mild symptoms (fever, cough, myalgia, headache and possible digestive disorders) to different degrees, SARS-Covid-2 can cause serious pulmonary pathologies and sometimes death. Data on the consequences during pregnancy are limited. The first Chinese data published seem to show that the symptoms in pregnant women are the same as those of the general population. There are no cases of intrauterine maternal-fetal transmission, but cases of newborns infected early suggest that there could be vertical perpartum or neonatal transmission. Induced prematurity and cases of respiratory distress in newborns of infected mothers have been described. Pregnancy is known as a period at higher risk for the consequences of respiratory infections, as for influenza, so it seems important to screen for Covid-19 in the presence of symptoms and to monitor closely pregnant women. In this context of the SARS-Covid-2 epidemic, the societies of gynecology-obstetrics, infectious diseases and neonatalogy have proposed a French protocol for the management of possible and proven cases of SARS-Covid-2 in pregnant women. These proposals may evolve on a daily basis with the advancement of the epidemic and knowledge in pregnant women. Subsequently, an in-depth analysis of cases in pregnant women will be necessary in order to improve knowledge on the subject.

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1. **[SARS-CoV-2 infection with gastrointestinal symptoms as the first manifestation in a neonate].**  
   Wang Jin Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics 2020;22(3):211-214.

Since December 2019, the outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has occurred in Wuhan, Hubei Province, China. The infected cases were noted mostly in adults, but rarely reported in children, especially neonates. Most children with SARS-CoV-2 infection present mainly with respiratory symptoms, but less commonly with gastrointestinal symptoms, and tend to have mild clinical symptoms. A neonate with SARS-CoV-2 infection, who had vomiting and milk refusal as the first symptom, was recently admitted to Wuhan Children's Hospital. After two weeks of treatment, the patient recovered gradually and was discharged. Here, this case is reported to improve the understanding of SARS-CoV-2 infection in neonates.

1. **[Standardized management guideline for pediatric wards of hematology and oncology during the epidemic of coronavirus disease 2019].**  
   Subspecialty Group of Hematology and Oncology Society of Pediatrics of Hubei Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics 2020;22(3):177-182.

With the spread of coronavirus disease 2019 (COVID-19) and growing knowledge of its diagnosis and treatment, it has been clear that children are also susceptible to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The children with hematological tumors are a special population with immunosuppression and special therapeutic characteristics. Here the management guideline for pediatric wards of hematology and oncology during COVID-19 epidemic is established based on the features of children with hematological tumors.

1. **[Twin girls infected with SARS-CoV-2].**  
   Zhang Guo-Xun Zhongguo dang dai er ke za zhi = Chinese journal of contemporary pediatrics 2020;22(3):221-225.

This article reports the diagnosis and treatment of twin girls who were diagnosed with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in Hunan Province, China. The twin girls, aged 1 year and 2 months, were admitted on January 29, 2020 due to fever for one day and cough and sneezing for two days respectively. Both recovered after symptomatic treatment. The two girls had mild symptoms and rapid recovery, suggesting that children with SARS-CoV-2 infection may be mild and have a good prognosis. There were differences in the clinical symptoms and imaging findings between the twin girls, suggesting that SARS-CoV-2 infection has diverse clinical features in children.

1. **A Minimally Replicative Vaccine Protects Vaccinated Piglets Against Challenge With the Porcine Epidemic Diarrhea Virus**  
   Singh G. Frontiers in Veterinary Science 2019;6:No page numbers.

Porcine epidemic diarrhea virus (PEDV), is an economically important enteric coronavirus, with over a 90% mortality rate in neonatal piglets. The virus emerged in the US in 2013, resulting in severe production losses. Effective vaccine development against PEDV is a challenge. Inactivated vaccines are of questionable efficacy. Attenuated vaccines, while more effective, require a relatively long lead development time, are associated with safety concerns and are also unable to prevent new field outbreaks. To combine the safety and efficacy advantages of inactivated and attenuated PEDV vaccines, respectively, in this study, we tested the hypothesis that subjecting PEDV virions to heat treatment at 44degreeC for 10 min to reversibly unfold structural proteins, followed by exposure to RNAse to fragment the genome, would result in a vaccine preparation with intact viral structure/antigenicity but highly diminished replicative abilities. We expected the vaccine to be both safe and effective in a piglet challenge model. Following the heat and RNAse treatment, PEDV virions had an intact electron microscopic ultrastructure and were amplified only in the 3rd passage in Vero cells, indicating that diminished replication was achieved in vitro. Strong PEDV spike-protein specific and virus neutralizing antibody responses were elicited in vaccinated piglets. Upon challenge, all vaccinated pigs were protected against fecal viral shedding and intestinal pathology, while the unvaccinated controls were not. The vaccine virus was not detected in the fecal matter of vaccinated pigs prior to challenge; nor did they develop intestinal lesions. Thus, the described approach has significant promise in improving current approaches for PEDV immunization.<br/>&#xa9; Copyright &#xa9; 2019 Singh, Singh, Pillatzki, Nelson, Webb, Dillberger-Lawson and Ramamoorthy.

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1. **A multicenter nonrandom clinical study using induction regimen of FLAG-IDA or dae in treatment of 101 children with newly diagnosed CBF-AML in South of China: Clinical responses and the midterm report of survival**  
   Feng X. Blood 2019;134:No page numbers.

OBJECTIVE: Patients with core binding factor (CBF) AML generally have a favorable prognosis, but the appropriate intensity of chemotherapy and number of courses are still key points for further exploration by the different leukemic group. Our prospective multicenter clinical study was designed to use high intensity, 4-courses of chemotherapy (backbone of MRC AML 15 protocol) to treat childhood CBF-AML and to observe the feasibility and effectiveness in China. <br/>METHOD(S): Total of 101 children with CBF-AML from 9 centers of south of China were enrolled on the C-HUANAN Children AML 2015 protocol from 2015.1 to 2018.11, accounting for 30.6% of total AML (non-APL) cases. There were 59 boys and 42 girls, aged between 2- 14 years old. The diagnosis of CBF-AML was established by PCR-based detection of RUNX1-RUNX1T1 and CBFbeta-MYH11 fusion gene transcripts or by FISH based detection of t(8;21) and inv(16) aberration, respectively. Nine cases were combined with FTL3-ITD. Eleven cases were combined with ASXL1 mutation, and 23 cases were combined with c-KIT mutation. The induction regimen were non-randomized to DAE group and FLAG-IDA group. The induction regimen of DAE group including coures 1 (DAE 3+5+10), course 2 (DAE 3+5+8) . The induction regimen of FLAG-IDA including two courses of FLAG-IDA. Consolidation treatment was same and consisted of 2 courses: 1.HAE or MACE; 2.MidAC. Follow-up observation was then started after 4 courses of treatment. All of patients were followed-up to 06/30/2019, median follow-up time was 25 months. <br/>RESULT(S): The overall complete remission rate was 93.1% after two courses of induction, 93.8% in the DAE group and 92.8% in the FLAG-IDA group. There was no statistical difference between the two groups. The MRD negative rate (&lt;0.1%) detected by the flow cytometry after first course was 57/87 (65.5%) and 67/77 (87.0%) after second course respectively. The RUNX1-RUNX1T1 or CBFbeta-MYH11 gene negative rate was 28/60 (46.7%) and 25/43 (58.1%) after first course and second course of treatment respectively .The overall survival rate (OS) was 83.2%, and the leukemia-free survival rate was 81.1%.Among them, the OS and LFS of the DAE group were 76.4% and 73.2%, respectively, and the OS and LFS of the FLAG-IDA group were 86.3% and 84.6%, respectively( P= 0.331 and 0.241).The OS and LFS of the RUNX1-RUNX1T1 group were 81.8% and 79.2%, respectively.The OS and LFS of the CBFbeta/MYH11 group were both 88.9%( P= 0.542 and 0.403). The OS and LFS in CBF-AML with FLT3- ITD positive were both 62.2%. The OS and LFS in CBF-AML without FLT3-ITD were 85.3% and 82.9%, respectively (P=0.045 and 0.081),there was significantly inferior OS in CBF-AML with FLT3- ITD subgroup. Among them, the OS was 60.0% and 85.9% in RUNX1-RUNX1T1 with or without FLT3- ITD group respectively( P=0.041), there was significantly inferior OS in RUNX1-RUNX1T1 with FLT3- ITD subgroup. There were no significant differences in OS and LFS between the CBF with or without C-kit and ASXL1 genes. The overall relapse was 10.9%, and treatment related mortality was 6.9%. <br/>Conclusion(s): The childhood CBF-AML accounted for 30.6% of children's newly diagnosed AML in the South China Children's AML Group. The complete remission rate reached to 93.1% by using 2 courses of intensive induction regimen of DAE or FLAG-IDA. Only 2 courses of consolidation chemotherapy were administered. Two years OS and LFS were higher than 80%.There were significant difference in OS of CBF-AML with FLT3-ITD, and RUNX1-RUNX1T1 AML with FLT3-ITD. There were no significant differences in that of LFS. The overall LFS was close to the outcome of the MRC AML 15 protocol, but there was a gap in OS. The main reason was that the most of relapsed patients abandoned treatment. On other hand the treatment related mortality need to be further reduced.

1. **A New Scoring System for Prediction of Intravenous Immunoglobulin Resistance of Kawasaki Disease in Infants Under 1-Year Old**  
   Wu S. Frontiers in Pediatrics 2019;7:No page numbers.

Background: Children with Kawasaki disease (KD) under 1-year old are at high risk for intravenous immunoglobulin (IVIG) resistance. The study was designed to explore the predictive measure of IVIG resistance in infants under 1-year old with KD. <br/>Method(s): This study enrolled children under 1-year old suffering from KD in Peking University First Hospital and Wuhan Children's Hospital. All infants were divided into IVIG-responsive and IVIG-resistant groups. The differences in demographic characteristics, clinical features, and laboratory examinations were compared and the risk factors of IVIG resistant KD were analyzed. Furthermore, a scoring system was developed for predicting IVIG resistance in KD infants and an external validation was performed. <br/>Result(s): A total of 282 infants (194 boys, median age of 7.0 months) were enrolled in this study, of whom 23 children were IVIG-resistant. Compared with IVIG-responsive infants, those in the IVIG-resistant group had a high neutrophil-to-lymphocyte ratio (NLR), high platelet-to-lymphocyte ratio (PLR), high mean platelet volume-to-lymphocyte ratio (MPVLR) in peripheral blood, and low serum albumin, and low serum sodium before IVIG therapy (all P &lt; 0.01). Multiple regression analysis indicated that high levels of peripheral NLR and MPVLR, and low levels of serum albumin and serum sodium were independent risk factors for IVIG resistant KD infants. A scoring system, which included peripheral NLR &gt;= 2.69 (1 point), MPVLR &gt;= 2.78 (1 point), serum albumin &lt;= 30.7 g/L (1 point), and serum sodium &lt;= 135.2 mmol/L (1 point), was established. A cut-off value of a total score of 2 points or higher yielded a sensitivity of 87.0% and a specificity of 78.4%, with an area under the curve of 0.891. External validation with clinical diagnostic standard showed that a cut-off value of total score of 2 points or higher for predicting the IVIG-resistance yielded a sensitivity of 70.0% and a specificity of 75.1%. <br/>Conclusion(s): For the first time, we proposed a predictive model of IVIG resistance in KD infants under 1-year old. The scoring system, which accounts for baseline peripheral NLR, MPVLR, and serum albumin and sodium, predicts with relatively high sensitivity and specificity for IVIG-resistant infants with KD under 1-year old.<br/>&#xa9; Copyright &#xa9; 2019 Wu, Long, Chen, Huang, Liao, Sun, Zhang, Zhang, Yan, Qi, Liu, Chen, Zhang and Du.

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1. **A not so common cold-a case of acute respiratory distress syndrome due to adenovirus-associated pneumonia**  
   Dogra M. American Journal of Respiratory and Critical Care Medicine 2019;199(9):No page numbers.

Adenovirus is a double-stranded DNA virus, and is a common cause of febrile illnesses and upper respiratory tract syndromes in children and infants. Most diseases are self limited. It has rarely been reported to cause severe lower respiratory tract infections in immunocompromised adult patients. We report a rare case of Acute respiratory distress syndrome (ARDS) due to adenovirus-associated pneumonia in an immunocompetent patient. Case Report; A 45 year old healthy male came to the hospital with fever, chills, cough and shortness of breath for 7 days and was requiring supplemental oxygen. Chest X ray on admission showed consolidation in the right upper lobe. He was started on ceftriaxone and azithromycin for suspected community acquired pneumonia. On day 2 of admission, he became increasingly hypoxemic and was transferred to the ICU. He required high flow nasal cannula initially and mechanical ventilation on day 3. Antibiotics were switched to vancomycin, zosyn and oseltamivir for broader coverage. Respiratory panel PCR was positive for Adenovirus and negative for Influenza virus, respiratory syncytial virus, human metapneumovirus, parainfluenza virus, coronavirus, bordetella pertussis, mycoplasma pneumoniae and chlamydia pneumoniae. Sputum and blood bacterial and fungal cultures were negative. On day 4, his PaO2/FiO2 ratio worsened and chest x ray showed worsening diffuse opacities, suggestive of ARDS. Patient was paralyzed, proned and was started on APRV mode of ventilation. Repeat microbiologic cultures including bacterial, AFB and fungal cultures were obtained through bronchoscopic alveolar lavage, which were negative as well. Patient was managed supportively and was successfully extubated on day 10. Subsequently he was transferred to general ward and was discharged home. He was alive and had normal activities at the 1-year follow up assessment. Discussion; ARDS is an acute, diffuse, inflammatory lung injury, associated with increased vascular permeability, diffuse alveolar damage and loss of aerated tissue. It is characterized by non-cardiogenic pulmonary edema with bilateral chest radiograph opacities and hypoxemia refractory to oxygen therapy. Adenovirus is a rare cause of ARDS in immunocompetent patients. Patients initially present with flu-like symptoms, cough, fever and can progress to rapidly worsening hypoxia refractory to oxygen therapy. The management is mostly supportive. Potential agents include brincidofovir and cidofovir, but there use is limited due to potential severe nephrotoxicity and myelosuppression. Conclusion; This case aims to sensitize physicians to consider adenovirus-associated ARDS as a differential in immunocompetent patients.(Figure Presented).

1. **Acupuncture and moxibustion combined with western medication for ninety cases of Bell's palsy at different stages: A randomized controlled trial**  
   Mao H.-F. World Journal of Acupuncture - Moxibustion 2019;29(4):249-253.

Objective: To observe the differences in the clinical effect on Bell's palsy at the acute stage and the recover stage, as well as the differences in the clinical effect between the simple acupuncture-moxibustion therapy and the combined therapy of acupuncture-moxibustion and western medication, explore the optimal intervention time point and therapeutic regimen. <br/>Method(s): All of the patients were collected from the outpatients and the inpatients in the Specific Department of Acupuncture for Facial Paralysis in Hubei Chinese Medicine Hospital. A total of 128 patients with Bell's palsy were collected from February 2017 through to February 2018 and 90 patients of them were in compliance with the inclusion criteria. 90 cases were randomized into three groups, named group A (acupuncture and moxibustion at the acute stage), group B (acupuncture and moxibustion combined with western medication at the acute stage) and group C (acupuncture and moxibustion combined with western medication at the recovery stage), 30 cases in each one. In the group A, acupuncture and moxibustion were adopted at the acute stage of Bell's palsy. In the group B, at the acute stage, acupuncture and moxibustion were adopted in combination with the oral medication of hormone and vitamin. In the group C, at the recovery stage, acupuncture and moxibustion were adopted in combination with the oral medication of hormone and vitamin. The clinical healing time and the total effective rate were observed in the patients of the three groups and the occurrence of sequelae in facial paralysis was followed-up. <br/>Result(s): 1 The clinical healing time in the Group B was slightly shorter than the Group A, but without statistical significance in comparison (P &gt; 0.05). The clinical healing time in either the Group A or the Group B was shorter than Group C, indicating the statistical significance in comparison (both P &lt; 0.05). 2The results of 3-month follow-up observation showed that there were 3 cases of sequelae in the group A, 2 cases in the Group B and 7 cases in the Group C. 3 After treatment, the total effective rate in either the Group A or the Group B was higher than the Group C, indicating the statistical significance in comparison (both P &lt; 0.05). <br/>Conclusion(s): The simple use of acupuncture and moxibustion at the acute stage achieves the similar clinical effect on Bell's palsy as the treatment of acupuncture-moxibustion combined with western medication. The simple application of acupuncture and moxibustion prevents from the potential side effects of hormone to the largest extent and displays its dominate advantages in safety. Besides, the early intervention of acupuncture-moxibustion shortens the healing time and effectively improves the prognosis of Bell's palsy.<br/>Copyright &#xa9; 2019

1. **ART-PCREstablishment and Application of a RT-PCR Assay for Detection of Senecavirus A(SVA)**  
   Fan H. Acta Veterinaria et Zootechnica Sinica 2019;50(6):1312-1318.

Senecavirus A(SVA) is a nonenveloped, single-stranded RNA virus, which can cause vesicular lesions in sows and newborn piglet death. In order to establish a rapid assay for detection of SVA, we compared the genetic sequences of 40 SVA genes published on NCBI, and the best primers was selected from three pairs of primers which designed based on the conserved regions of sequences. The RT-PCR detection method of SVA was established successfully after the optimization of primer concentration, annealing temperature, extension time and cycle number. SVA, Encephalomyocarditis virus (EMCV), foot-and-mouth disease virus (FMDV), pseudorabies virus (PRV), porcine reproductive and respiratory syndrome virus (PRRSV), swine fever virus (CSFV), porcine epidemic diarrhea virus (PEDV) were detected by RT-PCR, which showed a good specificity with no cross-reaction. The sensitivity test was carried out as well, and sensitivity of the detection could reach up to 1 TCID<sub>50</sub>, which shows it is more sensitive than the methods reported in foreign literatures. One hundred samples of pig tissue were detected using this method, and the positive rate was 2%. The establishment of this method, with its great specificity, high sensitivity and ideal reliability, could provide an effective technical means for SVA detection and epidemiological investigation.<br/>Copyright &#xa9; 2019, Chinese Journal of Animal Science and Veterinary Medicine Co., Ltd. All right reserved.

1. **Association of Adverse Childhood Experience and Attention Deficit Hyperactivity Disorder with depressive symptoms among men who have sex with men in China: moderated mediation effect of resilience.**  
   Ding Changmian BMC public health 2019;19(1):1706.

BACKGROUNDAdverse childhood experience (ACE), attention deficit hyperactivity disorder (ADHD), and resilience can all contribute to depressive symptoms. However, little is known regarding the complex relationships between these factors and their joint effects on depressive symptoms. This study aimed to explore the underlying mechanism of ACE, ADHD, and resilience on depressive symptoms among men have sex with men (MSM) in China.METHODSA total of 714 MSM were recruited from gay/bisexual men-serving venues in Wuhan, Changsha, and Nanchang of China. The data was collected using computer-assisted self-interview. The mediated and moderated mediation models were employed to explore the underlying mechanisms between ACE, ADHD, resilience, and depressive symptoms.RESULTSAmong 714 MSM, 51.4% reported at least one ACE and 13.0% reported three or more. ACE had a direct (β = 1.01, 95% CI: 0.45-1.57) effect on depressive symptoms. ADHD partially mediated the correlation between ACE and depressive symptoms (indirect effect: 0.55; 95% CI: 0.34-0.79). Additionally, the effect of ACE on depressive symptoms was moderated and buffered by resilience (β = -0.09, 95% CI: -0.15 - -0.03).CONCLUSIONThe findings suggested that, programs and policies that promote resilience and address ADHD might protect Chinese MSM exposed to ACE from depressive symptoms.

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1. **Association of body mass index with rates of hospitalization in patients with respiratory viral infections?Puerto Rico, 2012-2018**  
   Tobolowsky F.A. Open Forum Infectious Diseases 2019;6:No page numbers.

Background: Obesity is a serious public health problem in Puerto Rico, where 31% of the population is obese. Multiple studies have suggested that adults with influenza who are underweight, overweight, or obese have increased risk of hospitalization compared with those of normal weight. We sought to determine whether risk of hospitalization among patients infected with influenza or other respiratory viruses differs by BMI among patients in Puerto Rico. <br/>Method(s): We analyzed data from patients enrolled in the Sentinel Enhanced Dengue Surveillance System (SEDSS), a prospective study of patients with acute febrile illness (AFI), from May 2012 to September 2018. We evaluated those older than 24 months, who had height, weight, and clinical disposition recorded, and tested positive by RT-PCR for infection with influenza A (n = 1253), influenza B (n = 844), adenovirus (n = 435), respiratory syncytial virus (n = 289), parainfluenza virus (n = 361), metapneumovirus (n = 247), or coronavirus (n = 15). BMI categories were determined using standard cutoffs in adults and BMI-for-age percentiles for children and adolescents. Risk of hospitalization by BMI category was calculated using multivariate Poisson regression. <br/>Result(s): Among the 3,388 patients included, 675 (20%) were overweight, 926 (27%) were obese, 405 (12%) were underweight, and 1382 (41%) were normal weight. Median age was 13.4 (range: 2-100 years), and 50% were male. Risk of hospitalization was not significantly different in children and adult patients infected with a respiratory virus who were overweight relative to those that had normal BMI; however, once hospitalized, obese individuals of any age had a mean length of hospital stay 1.7 days longer than normal weight persons (95% CI: 0.27-3.17 days). Among adult patients, underweight patients were nearly 3 times more likely to be hospitalized compared with normal weight patients (relative risk 2.8, 95% CI: 1.4-5.9). Underweight children were not at increased risk of hospitalization. <br/>Conclusion(s): Among patients infected with a respiratory virus, risk of hospitalization was higher among underweight adult patients, and obese patients had a longer mean length of stay once hospitalized. Body mass index should be considered when evaluating risk and managing these patients.

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1. **Attenuation and characterization of porcine enteric alphacoronavirus strain GDS04 via serial cell passage.**  
   Xu Zhichao Veterinary microbiology 2019;239:108489.

Porcine enteric alphacoronavirus (PEAV) is a newly identified swine enteropathogenic coronavirus that causes watery diarrhea in newborn piglets. In this study, an original, highly virulent PEAV strain GDS04 was serially passaged in Vero cells. The virus titers and sizes of syncytia increased gradually with the cell passages. Newborn piglets were orally inoculated with PEAV P15, P67 and P100. Compared with P15 and P67, P100 resulted in only mild clinical signs and intestinal lesions in piglets. The virus shedding in feces and viral antigens in intestinal tract were markedly reduced in P100-inoculated piglets. Importantly, all P100-inoculated newborn piglets survived, indicating that P100 was an attenuated variant. Sequence analysis revealed that the virulent strain GDS04 had four, one, six and eleven amino acid differences in membrane, nucleocapsid, spike and ORF1ab proteins, respectively, from P100. Furthermore, more differences in the predicted three-dimensional structure of S protein between GDS04 and P100 were observed, indicating that these differences might be associated with the pathogenicity of PEAV. Collectively, our research successfully prepared a PEAV attenuated variant which might serve as a live attenuated vaccine candidate against PEAV infection.

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1. **Clinical presentation and outcomes of long-term care residents with coronavirus respiratory infection: A retrospective cohort study**  
   Williams V.R. Open Forum Infectious Diseases 2019;6:No page numbers.

Background. Human coronaviruses (CoVs) are a major cause of respiratory infection and institutional outbreaks, yet the epidemiology and clinical outcomes of these viruses is poorly described among the elderly residing in long-term care facilities (LTCFs). Methods. We performed a retrospective cohort study of LTCF residents with positive nasopharyngeal or mid-turbinate swabs for CoVs (OC43, 229E, NL63 and HKU1) between January 2013 and December 2018. Demographic and clinical data were obtained from resident charts including clinical presentation, treatment, outcome, and transmission to other residents. Variables were compared using univariate analysis. Results. 3268 residents met inclusion criteria (median age 93 years, 90% male) comprising 7.5% (246/3268) of all positive respiratory virus specimens detected during the study period. 97(39%) of cases were associated with a respiratory outbreak while 149(61%) were sporadic cases that did not result in transmission. OC43 (52%) was the most commonly identified CoV and was more commonly associated with outbreak cases (76% vs. 37%; P &lt; 0.001). In total, 87% of all cases had two or more of runny nose/ congestion, cough, sore throat/hoarse voice or fever. The most common symptoms among residents were cough (85%), runny nose/congestion (79%), and sore throat/ hoarse voice (59%) and only 17% of residents had a measured temperature of &gt;= 37.8C. Only 6% of residents received antibiotic treatment for suspected secondary bacterial pneumonia. The 30-day mortality rate was 3.7% with 67% of deaths attributable to the CoV infection. There was no statistically significant difference in symptoms, treatment or outcomes associated with outbreaks or seasonality. Conclusion. CoVs make up an important proportion of respiratory viral infections among LTCF residents and may result in frequent outbreaks. Most residents remain afebrile and have self-limited illness while only a small minority develop secondary bacterial pneumonia and death. Given these findings the benefits of control measures should be weighed against the impact on resident quality of life.

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1. **Colostral and mature breast milk protein compositional determinants in Qingdao, Wuhan and Hohhot: maternal food culture, vaginal delivery and neonatal gender**  
   Liu B. Asia Pacific journal of clinical nutrition 2019;28(4):800-811.

BACKGROUND AND OBJECTIVES: Breast milk proteins are essential to infants as they provide nutrition and protection. This study evaluated multiple factors that might influence breast milk proteins to identify the determinants that lead to inter-individual and longitudinal differences. METHODS AND STUDY DESIGN: Five major breast milk proteins (beta-casein, alpha-lactalbumin, lactoferrin, serum albumin and kappa-casein) from breast milk samples collected from 55 mothers in three cities (Hohhot, Wuhan and Qingdao) in China were analyzed using a validated ultraperformance liquid chromatography-mass spectrometry method. Various factors were statistically evaluated for their associations with breast milk proteins: mother's age, parity, delivery mode, infant gender and infant birthweight. <br/>RESULT(S): Although decreased in concentrations, the proportions of beta-casein and alpha-lactalbumin increased from colostrum (33.8% and 26.8%) to mature milk (40.3% and 31.6%), respectively. Mothers of older age were found to produce a lower concentration of total protein. Compared with vaginal delivery, caesarean section was associated with lower concentrations of kappa-casein, lactoferrin and beta-casein in mature milk. Infant gender influenced breast milk proteins in colostrum: mothers who delivered a girl tended to produce more kappa-casein, lactoferrin and total protein. Furthermore, regional differences were found, and mothers from Hohhot produced significantly higher concentrations of alpha-lactalbumin and lactoferrin than those from Qingdao and Wuhan. This regional difference might be linked to the different dietary patterns of these mothers among cities. <br/>CONCLUSION(S): Our study deepens the understanding of breast milk protein dynamics in Chinese population and provides evidence on potential determinants, which can serve as guidance for infant nutrition optimization.

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1. **Day-to-day variability in home-based forced oscillation technique parameters correlates with asthma control and exacerbation burden in pediatric asthma subjects**  
   Wong A. American Journal of Respiratory and Critical Care Medicine 2019;199(9):No page numbers.

RATIONALE: Forced Oscillation Technique (FOT) offers exciting potential as a monitoring tool in asthma, given its effort-independent nature as a tidal breathing measure of lung mechanics assessing airway calibre and lung stiffness (respiratory system resistance, Rrs, and reactance, Xrs, AX). In pilot data (Robinson et al., Chest 2014) day-to-day variability in FOT parameters, measured in school children in an asthma camp setting over one week, differentiated asthma severity and levels of asthma control. This study explores home-based utility over an extended period. AIMS: To determine whether extended home-based, parent-supervised FOT monitoring (day-to-day variability in Rrs, Xrs and AX) reflects asthma control and exacerbation burden in pediatric subjects. <br/>METHOD(S): Persistent asthmatics (8-18 years, &gt;=2 asthma exacerbations in last 12 months) were recruited from CHW asthma clinic (n=25). After training, FOT (tremoFloTM, Thorasys Ltd) was collected daily for 4 months, supplemented by asthma questionnaires (daily symptom, weekly ACQ and monthly ACT and AQLQ) and medication adherence (SmartinhalersTM, Adherium). Exacerbations were also recorded for the remainder of the year. Linear regression analysis examined correlation of Rrs and Xrs day-to-day variability (CoV across monitoring period, and during both non-exacerbation and exacerbation periods) and asthma control (mean ACQ, ACT and AQLQ score) and exacerbations (%exacerbation days, total n). <br/>RESULT(S): 25 subjects (mean+/-SD age 12.7+/-2.5 years, baseline FEV<sub>1</sub> 92.5+/-16.7% predicted) with 21 completed monitoring periods to date (mean+/-SD 116.3+/-21.0 days, 82.3+/-13.3% days acceptable FOT data). Asthma control: Overall Rrs CoV correlated with ACQ (r<sup>2</sup>=0.22, p=0.03). Trends toward significance were observed between Rrs CoV and ACT (r<sup>2</sup>=0.15, p=0.09) and between Xrs CoV and ACQ (r<sup>2</sup>=0.18, p=0.052). Asthma exacerbations: Overall Rrs CoV (r<sup>2</sup>=0.30, p=0.01), Xrs CoV (r<sup>2</sup>=0.27, p=0.015) and AX CoV (r<sup>2</sup>=0.24, p=0.02) correlated with total exacerbations (3.1+/-2.3), whilst only a trend towards significant correlation was observed between %Exacerbation days (22.8+/-17.3%) with Rrs CoV (r<sup>2</sup>=0.17, p=0.06). Defining CoV from only non-exacerbation periods, R5 CoV (see Figure) correlated with both total exacerbations (r<sup>2</sup>=0.33, p=0.006) and %exacerbation days (r<sup>2</sup>=0.22, p=0.03), as did AX CoV (r<sup>2</sup>=0.30, p=0.01, and r<sup>2</sup>=0.21, p=0.03, respectively). X5 CoV correlated with total exacerbations during monitoring (r<sup>2</sup>=0.28, p=0.01) and also future exacerbation rate (0.35+/-0.32 exacerbations/month, r<sup>2</sup>=0.33, p=0.02). <br/>CONCLUSION(S): Home-based paediatric day-to-day FOT parameter variability correlated with asthma control and exacerbations, both current and future. These findings support future studies to define clinical utility of this monitoring strategy. (Figure Presented) .

1. **Decreased circulating levels of MOTS-c in individuals with newly diagnosed type 1 diabetes children**  
   Du C. Hormone Research in Paediatrics 2019;91:70-71.

Background and Aims: A novel bioactive peptide, mitochondrial- derived peptide (MOTS-c), has recently attracted interests as a potential prevention or therapeutic option for obesity and type 2 diabetes mellitus in mice. MOTS-c profiles have not yet been reported in type 1 diabetes (T1DM). We aimed to determine circulating MOTS-c levels in T1DM and explore the association between MOTS-c levels and various metabolic parameters. <br/>Method(s): In this case-control study, 60 age-, sex- matched children were recruited in the Hubei Province of China in 2015-2017. Thirty (16 females and 14 males) of these individuals were newly diagnosed T1DM children and 30 (15 females and 15 males) were of normal glucose. Subjects were excluded if they used medications such as insulin or metformin. MOTS-c levels in the fasting plasma were assessed using a commercially available enzyme-linked immunosorbent assay (ELISA), clinical data (e.g., serum glucose, insulin, C-peptide, HbA1c, and lipid profile) were recorded, and anthropometric measurements were performed. Finally, we investigated correlations between MOTS-c levels and related variables. <br/>Result(s): Circulating MOTS-c levels were significantly decreased in newly diagnosed T1DM children compared with those in the normal control group (445.45 +/- 21.29 ng/mL vs. 565.41 +/- 20.19 ng/mL, p &lt; 0.001). In addition, when stratified by sex, the trend of plasma MOTS-c reduction was similar in female and male patients with newly diagnosed T1DM (female 438.44 +/- 33.06 ng/ mL vs. 557.85 +/- 27.85 ng/mL, p &lt; 0.05; male 453.47 +/- 26.75 ng/mL vs. 572.98 +/- 30.08 ng/mL, p &lt; 0.05, respectively). Finally, we observed that MOTS-c levels were negatively correlated with random blood glucose (r = -0.380, p = 0.003), HbA1c (r = -0.408, p = 0.001), and triacylglycerol (r = -0.283, p = 0.029), and positively correlated with HDL-cholesterol (r = 0.294, p = 0.023) and C-peptide (r = 0.338, p = 0.015). <br/>Conclusion(s): Circulating MOTS-c levels were decreased in newly diagnosed T1DM children. Although the role of MOTS-c as a treatment for T1DM will require further investigation, it is possible that a decline in MOTS-c might be a biomarker of T1DM children.

1. **Delayed Lactogenesis Is Associated with Suboptimal Breastfeeding Practices: A Prospective Cohort Study**  
   Huang L. The Journal of nutrition 2019;:No page numbers.

BACKGROUND: Breastfeeding has many established health benefits to both babies and mothers. There is limited evidence on the association between delayed lactogenesis and breastfeeding practices. <br/>OBJECTIVE(S): We assessed the association between delayed lactogenesis and breastfeeding practices in women initiating breastfeeding. DESIGN: We used data from a prospective cohort study in Wuhan, China, which enrolled pregnant women at 8-16 weeks of gestation and followed up to postpartum. Women were included who had a singleton live birth, initiated breastfeeding, and provided information on infant feeding. Maternal lactogenesis status was assessed by face-to-face interview at day 4 postpartum. Breastfeeding practices (full breastfeeding and/or any breastfeeding) were queried by telephone interview at 3, 6, and 12 mo postpartum. Poisson regression and Cox regression were used to identify the association between delayed lactogenesis and breastfeeding practices. <br/>RESULT(S): Delayed lactogenesis was reported by 17.9% of the 2877 participants. After adjusting for potential confounders, when compared with timely lactogenesis, delayed lactogenesis was significantly associated with higher risk of inability to sustain full breastfeeding at 3 mo postpartum (RR: 1.24, 95% CI: 1.10, 1.39) and 6 mo postpartum (RR: 1.14, 95% CI: 1.04, 1.24). Delayed lactogenesis was also significantly associated with early termination of any breastfeeding (HR: 1.15, 95% CI: 1.01, 1.30) in the adjusted model. In a combined analysis, women with higher gestational weight gain (GWG, &gt;=16 kg for underweight and normal weight, 15 kg for overweight/obesity) and who subsequently experienced delayed lactogenesis had the highest risk of ending any breastfeeding earlier (adjusted HR: 1.32, 95% CI: 1.11, 1.55) compared with those who gained less GWG and experienced timely lactogenesis. <br/>CONCLUSION(S): This study shows that delayed lactogenesis was associated with low rate of full breastfeeding and shorter duration of any breastfeeding. Greater efforts to promote breastfeeding should be targeted towards women with delayed lactogenesis.<br/>Copyright &#xa9; The Author(s) 2019.

1. **Delays in care seeking, diagnosis and treatment of patients with pulmonary tuberculosis in Hubei, China**  
   Yang Q. International Health 2019;12(2):101-106.

Early diagnosis and treatment are essential for effective tuberculosis (TB) control. However, delays in the diagnosis and treatment of TB in central China have not been sufficiently investigated. This cross-sectional study was conducted between October 2013 and March 2014 in Hubei, China to identify risk factors of delays in care seeking, diagnosis and treatment among patients with TB. <br/>Method(s): A total of 1342 patients with TB seen in the designated institutions were included. Multivariate logistic regression was used to analyse factors associated with delays in TB diagnosis and treatment. <br/>Result(s): Overall, 21.54%, 23.62% and 42.25% of patients with TB experienced delays in care seeking, diagnosis and treatment, respectively. Multivariate logistic regression showed that medical insurance and monthly household income were significantly associated with delays in care seeking. The time to reach a township hospital or the facility of a patient's first consultation was significantly associated with delays in diagnosis. Sex, education, time to reach a township hospital and the facility where the diagnosis was made were significantly associated with delays in treatment. <br/>Conclusion(s): Delays in TB diagnosis and treatment in Hubei remain a serious issue. Improvements in the capability and accessibility of health care services are imperative to reduce delays and expedite TB diagnosis and treatment.<br/>Copyright &#xa9; 2020 The Author(s) 2020. Published by Oxford University Press on behalf of Royal Society of Tropical Medicine and Hygiene.

1. **Early respiratory viral infections in infants with cystic fibrosis**  
   Deschamp A.R. Journal of Cystic Fibrosis 2019;18(6):844-850.

Background: Viral infections contribute to morbidity in cystic fibrosis (CF), but the impact of respiratory viruses on the development of airway disease is poorly understood. <br/>Method(s): Infants with CF identified by newborn screening were enrolled prior to 4 months of age to participate in a prospective observational study at 4 centers. Clinical data were collected at clinic visits and weekly phone calls. Multiplex PCR assays were performed on nasopharyngeal swabs to detect respiratory viruses during routine visits and when symptomatic. Participants underwent bronchoscopy with bronchoalveolar lavage (BAL) and a subset underwent pulmonary function testing. We present findings through 8.5 months of life. <br/>Result(s): Seventy infants were enrolled, mean age 3.1 +/- 0.8 months. Rhinovirus was the most prevalent virus (66%), followed by parainfluenza (19%), and coronavirus (16%). Participants had a median of 1.5 viral positive swabs (range 0-10). Past viral infection was associated with elevated neutrophil concentrations and bacterial isolates in BAL fluid, including recovery of classic CF bacterial pathogens. When antibiotics were prescribed for respiratory-related indications, viruses were identified in 52% of those instances. <br/>Conclusion(s): Early viral infections were associated with greater neutrophilic inflammation and bacterial pathogens. Early viral infections appear to contribute to initiation of lower airway inflammation in infants with CF. Antibiotics were commonly prescribed in the setting of a viral infection. Future investigations examining longitudinal relationships between viral infections, airway microbiome, and antibiotic use will allow us to elucidate the interplay between these factors in young children with CF.<br/>Copyright &#xa9; 2019

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1. **Effectiveness and survival of 4 courses of chemotheray in 321 children with acute myeloid leukemia in china: A multicenter, nonrandomized clinical study**  
   Zhi Z.Y. Blood 2019;134:No page numbers.

Objectives Increasing the intensity of chemotherapy can improve long-term survival in young patients with acute myeloid leukemia, but the number of appropriate courses is still worth exploring. We prospectively used MRC-AML 15 protocol as backbone to designed the C-HUANAN-AML15 protocol, which including 2 courses of inductions and 2 courses of consolidation to treat new diagnosed acute myeloid leukemia children in order to adapt to China's actual situation. The midterm outcome of effectiveness and survival was analyzed in the multicenter of south of China. Patients and methods Total of 321 newly diagnosed childhood AML patients from 9 centers of south of China from November 2014 to December 2018 were included in the study. 194 boys and 127 girls, with median age 6 (0.5-14) years old were enrolled. The median follow-up period was 16 (4 to 73) months up to July 2019. Risk stratifications were based on genetic abnormalities and response to induction chemotherapy . One hundred and seven patients (33.3%),146 patients (45.5%),68 patients (21.2%) were classified as low-risk group (LR), intermediate-risk group (IR) and high-risk group (HR) respectively. The protocol C-HUANAN-AML15 protocol including tandem 2 courses of FLAG-IDA regimen (marked as group A, n=225) , or sequential DAE(3+5+10) and DAE(3+5+8) regimen (marked as group B, n=96) were applied to induction chemotherapy. One course of Homoharringtonine (substitution of Amsacrine in MRC-AML 15 protocol)/ Cytarabine/ Etoposide and one course of Mitoxantrone/ Cytarabine in consolidation chemotherapy were uniform in both groups. 57 patients (39 patients in group A and 18 patients in group B, P=0.752) selected hematopoietic stem cell transplantation (HSCT) after 2-3 courses of chemotherapy. In the 264 patients who only underwent chemotherapy, the LR/IR/HR ratio in the A and B group was 65(34.9%),82(44.1%),39(21.0%) and 34(43.6%),37(47.4%),7(9.0%) respectively (P=0.056). The similarity of clinical data was analyzed by the chi square test and COX proportional hazard function model. Complete remission (CR) rates, treatment related mortalities (TRM), event-free survival (EFS) and overall survival (OS) were compared by Log-Rank chi square test. Results The CR rates in A and B group were 87.6% and 83.3% after 1st course induction regimen, and 92.4% and 89.2% after 2nd course induction regimen, which were not significantly different (P=0.375, 0.337). The 3-year EFS and OS of all patients were 65.8+/-3.2% and 70.3+/-3.4% respectively. The 3- year EFS and OS of 264 patients who only received chemotherapy was 65.4+/-7.4% and 71.7+/-3.4%. The 3-year EFS of HR, IR and LR in patients who received only chemotherapy were 40.3+/-8.8%, 62.0+/-5.2% and 83.5+/-4.3% respectively (P=0.000). The 3-year OS of HR, IR and LR in patients who received only chemotherapy were 46.9+/-9.0%, 69.1+/-5.1% and 86.1+/-4.0% respectively (P=0.000). The 3-year EFS of A and B group in patients who received only chemotherapy was 70.8+/-4.0% and 56.7+/-6.3% (P=0.059); The 3-year OS of A and B group in patients who received only chemotherapy was 78.7+/-3.6% and 58.6+/-6.4% (P=0.005). The 3-year EFS and OS of 57 patients who received HSCT was 60.2+/-8.9% and 65.4+/-7.4%(P=0.477, 0.821). The EFS of IR and HR patients who received HSCT were superior than that of who received only chemotherapy, but they were not significantly different (78.6+/-8.6%vs62.4+/-5.1%, P=0.121; 44.4+/-12.9%vs38.9+/-8.8%, P=0.208). Univariate analysis showed that initial white blood cell count (&gt;=50x10<sup>9</sup>/L), RUNX1-RUNX1T1 fusion gene, EVI1 gene positive, FLT3-ITD mutation, no CR after 1st course and 2nd course induction affected 3-year EFS (all P&lt;0.05). Multivariate prognostic analysis with COX proportional hazard function model for EFS showed that EVI1 gene (HR0.397, 95%CI 0.201-0.785, P=0.008) and no CR after 2nd course induction (HR0.319, 95%CI 0.134-0.763, P=0.010) were independent risk factors. Conclusion This prospectively clinical study indicated that intensive induction with FLAG-IDA or DAE followed only 2 courses of consolidation chemotherapy was effective in the LR and IR group, and could be utilized as first line treatment in childhood AML. EVI1 gene positive and no CR after 2nd induction course were independent risk factors for EFS. More effective strategies are needed to be explored for HR group patients, EVI1 gene positive patients and those who cannot achieve CR after 2nd course induction.

1. **Etiology of acute respiratory infections in children under five years old. results from an active community surveillance and passive hospital surveillance in Lima, Peru**  
   Tinoco Y.O. American Journal of Tropical Medicine and Hygiene 2019;101(5):576.

Acute respiratory infections (ARI) constitutes a major cause of morbidity and mortality in children. Different pathogens were described to cause ARI however their contribution and role as etiological agents are not well understood. We aimed to describe the etiology of ARI among children &lt; 5 years in two settings: (1) Severe acute respiratory illness (SARI) in a hospital setting and (2) influenza-like illness (ILI) from a community active surveillance, both in a similar geographic area and time period. To perform the testing we used Taqman Array Cards, which detect 30 respiratory pathogens. From February 2014-March 2015, we sampled 258 nasopharyngeal & oropharyngeal (OP) swabs from SARI children. SARI was defined as fever &gt;=38 C with cough & disease onset in last 10 days prior to hospitalization. Simultaneously, we collected 150 OP swabs from children with ILI in community cohort; ILI was defined as sudden onset of fever &gt;=38 C, with cough and /or rhinorrhea and/ or nasal congestion. Of the SARI-patients, 95% (244) had at least one agent detected. Respiratory Syncytial Virus was the most common (33%, 13) followed by Streptococcus pneumonia ([STPN], 15%, 6) and Human metapneumovirus (13%, 5). Among ILI patients, 91% (136) had at least one agent detected. Among those with a detected, pathogen, 31% (12) were Moraxella catarrhalis (MOCA) and 13% (5) for each Influenza A & B, Haemophilus influenza (Hib) and STPN. Identification of only one pathogen was not common among SARI patients (16%, 39) or ILI patients (29%, 39); however, there were statistically significantly more single detections among ILI patients compared with SARI patients (p= 0.003). Hib, MOCA and STPN were the most common co-detections (46%-62%) found among ILI and SARI children. Importantly, we found that Legionella species, Human coronavirus NL63 and 229E, Bordetella pertussis, Pseudomonas aeruginosa, Influenza C, Group A streptococcus and Pneumocystis jiroveci were present only in SARI hospitalized children. Our results demonstrate that more than 90% of pathogens could be identified in OP swabs and pathogens detected were different between community and hospitalized settings.

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1. **Expression of amphiregulin in different types of nasal polyps and its correlation with tissue remodeling**  
   Gao L. Zhonghua er bi yan hou tou jing wai ke za zhi = Chinese journal of otorhinolaryngology head and neck surgery 2019;54(11):850-856.

Objective: To explore the expression of amphiregulin (AREG) in nasal polyps patients with different degrees of eosinophil infiltration, and to analyze the correlation between AREG and tissue remodeling. <br/>Method(s): Forty-eight patients underwent endoscopic sinus surgery in the Department of Otorhinolaryngology Head and Neck Surgery, Remin Hospital, Wuhan University from July 2017 to August 2018 were recruited, including 40 males and 8 females, aged from 16 to 60 years old. The subjects were divided into three groups: control group (n=14), eosinophilic chronic sinusitis with nasal polyps (ECRSwNP) group (n=19) and noneosinophilic chronic rhinosinusitis with nasal polyps (non-ECRSwNP) group (n=15). The relative expression of AREG in nasal mucosa was detected by Western blot assay and immunohistochemical staining. Tissue remodeling was detected by HE staining, AB-PAS staining and Masson staining. Kruskal-Wallis test was used for comparison among multiple groups, and Spearman correlation analysis was conducted between the expression level of AREG and the related indexes of tissue remodeling. <br/>Result(s): The expression of AREG in ECRSwNP group was significantly higher than that in non-ECRSwNP group and control group (median protein expression of Western blot was 1.592 vs 0.617 vs0.582, all P&lt;0.05). The degree of epithelial injury and goblet cell metaplasia in ECRSwNP group was significantly higher than that in control group (all P&lt;0.05), the percentage of collagen fibrosis area in ECRSwNP group was significantly lower than that in control group (P=0.01). In chronic rhinosinusitis with nasal polyps (CRSwNP) patients, the area of mucous glands was negatively correlated with the expression of AREG (r=-0.616, P&lt;0.05), and the percentage of collagen fibrosis area was negatively correlated with the expression of AREG (r=-0.738, P&lt;0.05). <br/>Conclusion(s): The expression of AREG is higher in ECRSwNP patients, which is related to the process of tissue remodeling.

1. **Functional characterization and proteomic analysis of porcine deltacoronavirus accessory protein NS7**  
   Choi S. Journal of Microbiology and Biotechnology 2019;29(11):1817-1829.

Porcine deltacoronavirus (PDCoV) is an emerging swine enteric coronavirus that causes diarrhea in neonatal piglets. Like other coronaviruses, PDCoV encodes at least three accessory or species-specific proteins; however, the biological roles of these proteins in PDCoV replication remain undetermined. As a first step toward understanding the biology of the PDCoV accessory proteins, we established a stable porcine cell line constitutively expressing the PDCoV NS7 protein in order to investigate the functional characteristics of NS7 for viral replication. Confocal microscopy and subcellular fractionation revealed that the NS7 protein was extensively distributed in the mitochondria. Proteomic analysis was then conducted to assess the expression dynamics of the host proteins in the PDCoV NS7-expressing cells. High-resolution two-dimensional gel electrophoresis initially identified 48 protein spots which were differentially expressed in the presence of NS7. Seven of these spots, including two up-regulated and five down-regulated protein spots, showed statistically significant alterations, and were selected for subsequent protein identification. The affected cellular proteins identified in this study were classified into functional groups involved in various cellular processes such as cytoskeleton networks and cell communication, metabolism, and protein biosynthesis. A substantial down-regulation of alpha-actinin-4 was confirmed in NS7-expressing and PDCoV-infected cells. These proteomic data will provide insights into the understanding of specific cellular responses to the accessory protein during PDCoV infection.<br/>Copyright&#xa9; 2019 by The Korean Society for Microbiology and Biotechnology.

1. **Genetic diversity of MERS-CoV spike protein gene in Saudi Arabia**  
   Sohrab S.S. Journal of Infection and Public Health 2019;:No page numbers.

Background: Middle East respiratory syndrome coronavirus (MERS-CoV) was primarily detected in 2012 and still causing disease in human and camel. Camel and bats have been identified as a potential source of virus for disease spread to human. Although, significant information related to MERS-CoV disease, spread, infection, epidemiology, clinical features have been published, A little information is available on the sequence diversity of Spike protein gene. The Spike protein gene plays a significant role in virus attachment to host cells. Recently, the information about recombinant MERS-CoV has been published. So, this work was designed to identify the emergence of any another recombinant virus in Jeddah, Saudi Arabia. <br/>Method(s): In this study samples were collected from both human and camels and the Spike protein gene was amplified and sequenced. The nucleotide and amino acid sequences of MERS-CoV Spike protein gene were used to analyze the recombination, genetic diversity and phylogenetic relationship with selected sequences from Saudi Arabia. <br/>Result(s): The nucleotide sequence identity ranged from 65.7% to 99.8% among all the samples collected from human and camels from various locations in the Kingdom. The lowest similarity (65.7%) was observed in samples from Madinah and Dammam. The phylogenetic relationship formed different clusters with multiple isolates from various locations. The sample collected from human in Jeddah hospital formed a closed cluster with human samples collected from Buraydah, while camel sample formed a closed cluster with Hufuf isolates. The phylogenetic tree by using Aminoacid sequences formed closed cluster with Dammam, Makkah and Duba isolates. The amino acid sequences variations were observed in 28/35 samples and two unique amino acid sequences variations were observed in all samples analyzed while total 19 nucleotides sequences variations were observed in the Spike protein gene. The minor recombination events were identified in eight different sequences at various hotspots in both human and camel samples using recombination detection programme. <br/>Conclusion(s): The generated information from this study is very valuable and it will be used to design and develop therapeutic compounds and vaccine to control the MERS-CoV disease spread in not only in the Kingdom but also globally.<br/>Copyright &#xa9; 2019 The Authors

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1. **High levels of unreported intraspecific diversity among RNA viruses in faeces of neonatal piglets with diarrhoea**  
   Cortey M. BMC Veterinary Research 2019;15(1):No page numbers.

Background: Diarrhoea is a major cause of death in neonate pigs and most of the viruses that cause it are RNA viruses. Next Generation Sequencing (NGS) deeply characterize the genetic diversity among rapidly mutating virus populations at the interspecific as well as the intraspecific level. The diversity of RNA viruses present in faeces of neonatal piglets suffering from diarrhoea in 47 farms, plus 4 samples from non-diarrhoeic piglets has been evaluated by NGS. Samples were selected among the cases submitted to the Veterinary Diagnostic Laboratories of Infectious Diseases of the Universitat Autonoma de Barcelona (Barcelona, Spain) and Universidad de Leon (Leon, Spain). <br/>Result(s): The analyses identified the presence of 12 virus species corresponding to 8 genera of RNA viruses. Most samples were co-infected by several viruses. Kobuvirus and Rotavirus were more commonly reported, with Sapovirus, Astrovirus 3, 4 and 5, Enterovirus G, Porcine epidemic diarrhoea virus, Pasivirus and Posavirus being less frequently detected. Most sequences showed a low identity with the sequences deposited in GenBank, allowing us to propose several new VP4 and VP7 genotypes for Rotavirus B and Rotavirus C. <br/>Conclusion(s): Among the cases analysed, Rotaviruses were the main aetiological agents of diarrhoea in neonate pigs. Besides, in a small number of cases Kobuvirus and Sapovirus may also have an aetiological role. Even most animals were co-infected in early life, the association with enteric disease among the other examined viruses was unclear. The NGS method applied successfully characterized the RNA virome present in faeces and detected a high level of unreported intraspecific diversity.<br/>Copyright &#xa9; 2019 The Author(s).

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1. **High-density Bacterial Nasal Carriage in Children Is Transient and Associated with Respiratory Viral Infections - Implications for Transmission Dynamics**  
   Thors V. Pediatric Infectious Disease Journal 2019;38(5):533-538.

Background: This longitudinal study describes the associations between respiratory viral infections, rhinitis and the prevalence and density of the common nasopharyngeal bacterial colonizers, Streptococcus pneumoniae (Sp), Moraxella catarrhalis (Mc), Haemophilus influenzae (Hi) and Staphylococcus aureus. <br/>Method(s): In an observational cohort study, 161 children attending day care centers in Bristol, United Kingdom, were recruited. Monthly nasopharyngeal swabs were taken and stored frozen in Skim-milk, tryptone, glucose and glycerin broth (STGG) broth. Quantitative polymerase chain reaction was used for detection of respiratory viruses and 4 bacterial species. t tests and logistic regression models were used for analysis. <br/>Result(s): The frequent colonisers, Sp, Mc and Hi were more frequently found at high density in contrast to Staphylococcus aureus although temporally, high-density carriage was short lived. Respiratory viral infections and symptoms of rhinitis were both independently and consistently associated with higher bacterial density with an observed 2-fold increase in density for Sp, Mc and Hi (P = 0.004-0.017). <br/>Conclusion(s): For Sp and Hi, the association between young age and higher bacterial DNA density was explained by more frequent viral infection and increased nasal discharge, while the associations between some viral specie's and some bacterial species' density appear to be stronger than others. Increased colonization density and rhinitis may promote transmission of these commonly carried organisms.<br/>Copyright &#xa9; 2018 Wolters Kluwer Health, Inc. All rights reserved.

1. **Human bocavirus in children hospitalized for acute respiratory tract infection in Rome**  
   Petrarca L. World Journal of Pediatrics 2019;:No page numbers.

Background: The role of human bocavirus (HBoV) as a respiratory pathogen has not been fulfilled yet. We aimed to describe clinical and serological characteristics of children with HBoV hospitalized for acute respiratory tract infection and to evaluate whether differences occur between HBoV alone and in co-infection. <br/>Method(s): We retrospectively reviewed data from 60 children (median age of 6.2 months, range 0.6-70.9) hospitalized for acute respiratory symptoms, with HBoV detected from a respiratory sample, using a reverse transcriptase-PCR for 14 respiratory viruses (including respiratory syncytial virus (RSV), influenza virus A and B, human coronavirus OC43, 229E, NL-63 and HUK1, adenovirus, rhinovirus, parainfluenza virus1-3, and human metapneumovirus). <br/>Result(s): HBoV was detected alone in 29 (48.3%) patients, while in co-infection with other viruses in 31 patients (51.7%), with a peak between December and January. Among the 60 patients, 34 were bronchiolitis, 19 wheezing, 3 pneumonia, 2 upper respiratory tract infection, and 2 whooping cough. Seven children (11.6%) required admission to the paediatric intensive care unit (PICU) for respiratory failure. No differences was observed in age, family history for atopy and/or asthma, clinical presentations, chest X-ray, or laboratory findings in children with HBoV alone vs. multiple viral detection. RSV was the most frequently co-detected virus (61.3%). When compared with HBoV detection alone, the co-detection of RSV and HBoV was associated with male sex (P = 0.013), younger age (P = 0.01), and lower blood neutrophil count (P = 0.032). <br/>Conclusion(s): HBoV can be detected alone and in co-infection respiratory samples of children with an acute respiratory tract infection. A cause-effect relationship between HBoV and respiratory infection is not clear, so further studies are needed to clarify this point.<br/>Copyright &#xa9; 2019, Children's Hospital, Zhejiang University School of Medicine.

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1. **Improved quantification of myelin water fraction using joint sparsity of T2 \* distribution.**  
   Chen Quan Journal of magnetic resonance imaging : JMRI 2019;:No page numbers.

BACKGROUNDMyelin water fraction (MWF) can be quantified with analysis of the T2 \* distribution, whereas deducing the T2 \* spectrum from several echoes is an underdetermined and ill-posed problem.PURPOSETo improve the quantification of myelin water content by using nonnegative jointly sparse (NNJS) optimization.STUDY TYPEProspective.SUBJECTSNine healthy subjects.FIELD STRENGTH/SEQUENCE3T, multiecho gradient echo.ASSESSMENTThe results of NNJS were compared with that of the nonnegative least square (NNLS)-based algorithms. Simulated models with varied MWF at different noise levels were used to evaluate the accuracy of estimations. In human data, the MWF values of different regions were compared with previous studies and the coefficient of variation (COV) was used to assess the spatial coherence.STATISTICAL TESTPaired t-test.RESULTSIn simulation, the relative errors of MWF obtained from synthesized data with signal-to-noise ratio (SNR) at 500, 200, 150, and 100 were 0.08, 0.09, 0.10, and 0.12 for NNJS, 0.29, 0.43, 0.48, and 0.53 for regularized NNLS (rNNLS), and 0.19, 0.24, 0.25, and 0.26 for spatially-regularized NNLS (srNNLS). In human data, the mean values of MWF produced by NNJS in different regions were consistent with previous studies. Compared with the NNLS-based algorithms, lower COVs generated by NNJS were observed in genu, forceps minor, forceps major, and internal capsule, which were 0.44 ± 0.08, 0.48 ± 0.07, 0.46 ± 0.03, and 0.48 ± 0.09 in NNJS, 0.88 ± 0.28, 0.96 ± 0.18, 0.72 ± 0.03, and 0.85 ± 0.15 in rNNLS, and 0.56 ± 0.17, 0.64 ± 0.14, 0.50 ± 0.04 and 0.58 ± 0.13 in srNNLS.DATA CONCLUSIONQuantitative results of both simulated and human data show that NNJS provides more plausible estimation than the NNLS-based algorithms. Visual advantages of NNJS in spatial consistency can be confirmed by the comparative COV index. The proposed algorithm might improve the quantification of myelin water content.LEVEL OF EVIDENCE2 Technical Efficacy: Stage 1 J. Magn. Reson. Imaging 2019.

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1. **Influenza and other respiratory pathogens among hospitalized children in public hospitals in Peru**  
   Romero C. American Journal of Tropical Medicine and Hygiene 2019;101(5):577.

Acute Lower Respiratory Infections (ALRI) are a major cause of morbidity and mortality in young children. Influenza is an important etiology (from 9% to 17%) of Severe Acute Respiratory Infection (SARI) among hospitalized children while respiratory syncytial virus (RSV) is also responsible for substantial global morbidity and mortality. Estimates of the burden of respiratory virus associated hospitalization from low-middle income country are limited and most SARI cases in public hospitals are diagnosed syndromically. From August 2017 to July 2018 we conducted a passive surveillance of SARI among children under 5 years in 3 public hospitals in Peru. SARI case definition followed that of WHO. A nasopharyngeal swab was collected and tested by FilmArray Respiratory Panel, which detects 20 pathogens (17 virus and 3 bacteria). We enrolled 489 SARI hospitalized children and detected at least one pathogen in 84% (411/489) of the sample tested. We identified RSV in 34% (165/489), Human Rhinovirus/Enterovirus in 28% (135/489), Human Metapneumovirus in 13% (65/489), Influenza in 8% (37/489), Parainfluenza virus in 7% (33/489), Coronavirus in 6% (28/489), Bordetella pertusis in 2% (8/489) and Adenovirus in 1% (4/489). From April to June 2018, we observed an increase detection of RSV with an average of 72% of positivity. These results provide a description of the etiology of SARI among children less than 5 years. Collectively, the data generated from continued analysis may help to guide clinical judgment of physician in public hospitals and plan mitigation strategies and vaccination policies.

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1. **Isolation and Identification of Porcine Epidemic Diarrhea Virus and Its Effect on Host Natural Immune Response**  
   Qian S. Frontiers in Microbiology 2019;10:No page numbers.

Porcine epidemic diarrhea (PED) is a highly infectious intestinal disease caused by porcine epidemic diarrhea virus (PEDV). A PEDV strain was isolated from the piglet intestinal tract in Vero cells in Jiangsu Province, designated as the JS-A strain. PEDV was identified as the isolated virus by cytopathology, immunofluorescence assay, western blotting, transmission electron microscopy, and sequence analysis. The full-length genome of the JS-A isolate and the S gene were systematically analyzed, indicating that PEDV JS-A belongs to the G2a subtype, which is closely related to the prevalent PEDV in many countries and different from many current vaccines. Animal regression tests showed that piglets that are orally infected with the virus continue to develop diarrhea with yellowish and unpleasant odors. Further, piglets showed reduced food consumption and weight loss in the challenged group, while there were no abnormalities in the control group. In addition, Toll-like receptors (TLRs), RIG-I, and the downstream medium gene in the intestinal mucosa of newborn pigs infected with PEDV JS-A strain were studied. The neonatal Fc receptor (FcRn) was the only IgG transport receptor and protected IgG from degradation. Therefore, PEDV JS-A infection might inhibit FcRn expression by down-regulating TLRs and downstream signaling molecules. Taken together, isolation of the JS-A variant contributes to evolutionary analysis of the diarrhea virus. Further, the experimental infection model lays a foundation for further research related to vaccine development and the antiviral natural immune response of infected piglets, which helps us to better understand PEDV pathogenesis and immune mechanism.<br/>&#xa9; Copyright &#xa9; 2019 Qian, Zhang, Jia, Sun, Zhang, Xiao and Li.

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1. **MetaSystematic evaluation and Meta-analysis on effectiveness and safety of Yupingfeng Granules on recurrent respiratory tract infection**  
   Zhang L.-D. Zhongguo Zhongyao Zazhi 2019;44(20):4379-4386.

To evaluate the effectiveness and safety of Yupingfeng Granules in the treatment of recurrent respiratory tract infection. Six Chinese and English databases were retrieved, namely CNKI, WanFang, VIP, CBM, PubMed and Cochrane Library. Randomized controlled trials of Yupingfeng Granules in the treatment of recurrent respiratory tract infection were collected and screened. According to the evaluation criteria and tools of Cochrane, the heterogeneity among the studies was analyzed, and the Meta-analysis was carried out by RevMan 5.3 software. A total of 16 studies were included in this study, with a total sample size of 1 788 cases, including 901 cases in the experimental group and 887 cases in the control group. Among them, 11 intervention measures were Yupingfeng Granules combined with Western medicine routine vs routine Western medicine, and 5 research interventions were Yupingfeng Granules combined with pidomod vs pidomod based on routine therapy. Meta-analysis showed that the total effective rate of Yupingfeng Granules combined with Western medicine in the treatment of recurrent respiratory tract infection was better than that of Western medicine (RR=1.27, 95%CI[1.21, 1.34], P&lt;0.000 01). Based on the routine therapy, the total effective rate of Yupingfeng Granules combined with pidomod in the treatment of recurrent respiratory tract infection was better than that of pidomod (RR=1.23, 95%CI[1.13,1.35],P&lt;0.000 01). A total of 21 cases of adverse events were reported in this study, including 6 cases in the experimental groups combined with traditional Yupingfeng Granules therapy and conventional Western medicine therapy and 15 in the control group. The adverse events were mainly gastrointestinal reactions, such as fatigue, nausea and diarrhea, which can tolerate or disappear with no impact on treatment. The incidence of adverse events in the two groups was not statistically significant (RR=0.44, 95%CI[0.19, 1.03], P=0.06). The results showed no significant difference in the incidence of adverse events between the two groups during treatment. Based on the routine therapy, no adverse event was reported in Yupingfeng Granules pidomod vs pidomod, indicating that both groups were safe. The analysis showed that Yupingfeng Granules combined with routine Western medicine therapy or combined with pidomod could increase the level of immunoglobulin and T lymphocytes in children. Based on the existing data and methods, Yupingfeng Granules combined with routine Western medicine therapy for recurrent respiratory tract infection can improve the total effective rate, immune function and body immunity, with no serious adverse reaction. However, because of the low quality of the literatures included in this study, it is still necessary to adopt well-designed large-sample clinical trials in conformity to international standards to improve the quality of evidence.<br/>Copyright &#xa9; 2019, Editorial Board of China Journal of Chinese Materia Medica. All right reserved.

1. **Molecular epidemiology and decreased susceptibility to disinfectants in carbapenem-resistant Acinetobacter baumannii isolated from intensive care unit patients in central China**  
   Guo J. Journal of Infection and Public Health 2019;12(6):890-896.

Background: Infection with carbapenem-resistant Acinetobacter baumannii (CRAB) is an increasing problem for critically ill patients. The srains are frequently resistant to all antibiotics and disinfectants are often used to block the spread of these bacteria, playing an important role in infection control. <br/>Objective(s): The aim of this study was to investigate the antibiotic susceptibility, the clonal relationship, disinfectant resistance gene, beta-lactamase genes and the disinfectant sensitivity of 82 A. baumannii isolates collected at a large hospital in Wuhan, China. <br/>Design(s): A retrospective basic study. <br/>Method(s): Here we investigated 82 A. baumannii isolates from intensive care unit patients in a major teaching hospital in China for the distribution of resistance-associated genes and susceptibility to chlorine disinfectant (CLR), benzalkonium bromide (BB) and Chlorhexidine gluconate(CHG). Multi-locus sequence typing (MLST) was applied to explore their genetic evolution relationships. <br/>Result(s): qacE (30.48%, 25/82) and qacE1 (76.82%, 63/82) genes were detected in our study, while none were positive for qacA/B, qacC/D or qacG. The MIC values of CLR were 250 mg/L; The MIC values ranged from 32 to 128 mug/mL for BB; The MIC values ranged from 0.0019% to 0.0078% for CHG. The presence or absence of qacE gene has a significant impact(p 0.05) on MICs of BB or CHG. All isolates harboured bla<sub>OXA-51/23</sub> genes, and 98.78% of isolates contained the ISaba1 insertion sequence. All isolates were classified into 8 sequence types(STs) within clonal complex 92(CC92). <br/>Conclusion(s): The predominant CRAB strains in our intensive care unit are bla<sub>OXA-23</sub>-containing A. baumannii of CC92. The high prevalence of qac genes and reduced susceptibility to disinfectants confirm the need for continued vigilance against nosocomial infections.<br/>Copyright &#xa9; 2019 The Authors

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1. **Molecular epidemiology of infectious bronchitis virus and avian metapneumovirus in Greece**  
   Andreopoulou M. Poultry science 2019;98(11):5374-5384.

Respiratory diseases like infectious bronchitis virus (IBV) and avian metapneumovirus (aMPV) have been held accountable for major losses for poultry production. Nevertheless, scarce information was present dealing with the prevalence and molecular epidemiology of these infections in Greece and the efficacy of currently applied control strategies. To fill this gap, a specific epidemiological study was designed. A total of 106 broiler and layer farms, including 10 backyard and 96 commercial flocks, were sampled between March 2016 and May 2017, and the obtained tracheal swabs were tested for IBV and aMPV using RT-PCR based techniques followed by sequencing. For each farm, data regarding production type, flock features, clinical signs, and vaccination program were also recorded. Different associations between vaccination protocol, production type, animal category, birds density, age, presence of clinical signs, and IBV and/or aMPV infection were tested. Both IBV and aMPV field strain prevalence were proven high, approximately 20 and 30%, respectively, being the GI-19 lineage (14 out of 19; 73.6%) and B subtype (30 out of 30; 100%), the most commonly detected IBV and aMPV genetic types. Infection with IBV field strains was significantly associated with clinical sign presence (odds ratio = 8.55 [95CI = 2.17-42.90]). Remarkably, only the vaccination protocol involving a double vaccination at 1 D of age was proven protective against IBV-induced symptomatology, with the odds of developing disease being 4.14 [95CI = 1.34-14.51] times lower. No association was demonstrated between aMPV infection and clinical outbreaks or between aMPV and IBV detection, suggesting the marginal role of the former pathogen in poultry farming. Globally, the present study provides the first detailed investigation of the epidemiological scenario of 2 viruses traditionally considered of pivotal relevance in poultry farming and demonstrates that remarkable benefits could be obtained with just minor adjustments in vaccination protocols.<br/>Copyright &#xa9; 2019 Poultry Science Association Inc.

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1. **Molecular epidemiology of respiratory viruses among Malaysian Young children with a confirmed respiratory infection during 2014-2015**  
   Yew S.M. Journal of Thoracic Disease 2019;11(11):4626-4633.

Background: In many developing countries, acute respiratory tract infections (ARTIs) are the main cause of morbidity and mortality among young children. This study aims to evaluate the molecular epidemiology of respiratory viruses among Malaysian children with confirmed respiratory infections between July 2014 and July 2015. <br/>Method(s): A total of 394 nasopharyngeal swabs were collected prospectively from children age 0-5 years old with ARTIs from hospitals in Kuala Lumpur. Respiratory viral panel (RVP) assay was used to identify the viral aetiology of respiratory infections. <br/>Result(s): From a total of 394 samples, the positive detection rate was 79.9% (n=315). A total of 15 types of RNA viruses and a single type of DNA virus were detected. Enterovirus/rhinovirus (n=112, 28.4%), respiratory syncytial virus (RSV) (n=85, 21.6%), adenovirus (n=64, 16.2%), human bocavirus (n=34, 8.6%), and human metapneumovirus (n=29, 7.4%) were the five predominant viruses. Enterovirus/rhinovirus and RSV constituted most of the viral respiratory infections among young children, especially among children less than 1 year old. No coronavirus was detected among children between 3 and 5 years old. Co-infection caused by 2 or 3 respiratory viruses were detected in 52 patients (13.2%). Enterovirus/rhinovirus, adenovirus, and human bocavirus demonstrated pronounced seasonality. The infection rate peaked during mid-year, while the lowest activity occurred during early of the year. <br/>Conclusion(s): The use of molecular assay as a routine diagnostic in the hospitals can improve the diagnosis and management of respiratory tract infections among children.<br/>Copyright &#xa9; Journal of Thoracic Disease. All rights reserved.

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1. **Observation of the therapeutic and characteristic effects of terlipressin on refractory cirrhotic ascites**  
   Xing F. Zhonghua gan zang bing za zhi = Zhonghua ganzangbing zazhi = Chinese journal of hepatology 2019;27(12):982-988.

Objective: To observe the therapeutic effect of terlipressin on refractory ascites (RA) in cirrhosis, and its role and impact on acute kidney injury (AKI). <br/>Method(s): A non-randomized controlled clinical trial data of 111 hospitalized cases of liver cirrhosis accompanied with RA was collected from Shuguang Hospital Affiliated to Shanghai University of Traditional Chinese Medicine, Zhongshan Hospital of Hubei Province, The First Affiliated Hospital of Zhengzhou University, The First Affiliated Hospital of Medical School of Zhejiang University, and People's Hospital of Pudong New Area of Shanghai between March 2015 and March 2017. 26 cases of conventional treatment group (control group) were divided into two subgroups: RA without AKI (RA-NAKI) and RA with AKI (RA-AKI), and each subgroup consisted 13 cases. Patients with bacterial infection were treated with diuretics, albumin supplementation and antibiotics. 85 cases were presented in terlipressin combined treatment group, of which 27 cases were of RA-NAKI and 58 cases were of RA-AKI. Control group was injected terlipressin 1mg of intravenous drip or static push (once q6 h ~ 12 h) for more than 5 days. The treatment duration lasted for 2 weeks with 4 weeks of follow-up. Body weight, 24-hour urine volume, abdominal circumference, mean arterial pressure (MAP), liver and kidney function, anterior hepatic ascites, deepest point of ascites, and ultrasonographic detection of ascites in supine position before treatment, one and two weeks after treatment and 4 weeks after follow-up were compared. Count data were tested by chi (2). Samples of four groups at baseline were compared. One-way analysis of variance was used for normal distribution data and Kruskal-Wallis H test for non-normal distribution data. Repeated measures analysis of variance was used to compare the difference in efficacy between different time points before and after treatment in the group. The LSD method of one-way ANOVA was used to compare the two groups. A t-test of independent samples was used to compare the efficacy of different time series between the two groups. Mann-Whitney rank- sum test was used to compare the data of non-normal distribution between the two groups. <br/>Result(s): (1) Baseline data were compared among 4 subgroups of terlipressin RA-NAKI and control RA-AKI. Control group age was higher than that of terlipressin group, and the serum creatinine (SCr) of the RA-AKI group was higher than RA-NAKI group, and there was no significant difference in the rest of the baseline data and the combined medication (P &gt; 0.05). (2) An intra-group comparison between control and trelipressin before and after treatment showed that all patients had lower body mass, abdominal circumference and deepest ascites, and higher serum albumin (P &lt; 0.05). 24-hour urine volume and MAP was significantly increased in the terlipressin group, while the pre-ascites, SCr and child Turcotte Pugh (CTP) scores were decreased. Body weight, abdominal circumference, pre-ascites, and deepest ascites of the terlipressin group were decreased, while MAP was increased during the treatment and follow-up periods. The differences were statistically significant when compared with the control group at the same time (P &lt; 0.05). There was a statistically significant difference in the increase of 24-h urine volume in the terlipressin group compared with the control group (P &lt; 0.05). The decrease in SCr and CTP in the terlipressin group after 2 weeks of treatment and 4 weeks of follow-up was statistically significant compared with the control group (P &lt; 0.05). (3) Among the two subgroups of RA-AKI and RA-NAKI in the terlipressin group, the baseline SCr value of the former was higher than that of the latter. After treatment, the body weight, abdominal circumference, pre-ascites, deepest ascites and CTP scores were decreased. In the RA-AKI group, 24-hour urine volume, MAP, SCr and serum albumin concentration were significantly increased. The difference between the two subgroups before and after treatment was compared, and the body weight of RA-AKI group at 1, 2 weeks of treatment and 4 weeks of follow-up was significantly lower than RA-NAKI group, which were (- 2.3 +/- 0.2 vs. - 1.5 +/- 0.2) kg, (- 4.1 +/- 0.2 vs. - 2.6 +/- 0.2) kg, (- 4.2 +/- 0.3 vs. - 2.4 +/- 0.3) kg, respectively. RA-NAKI group urine volume was significantly increased at 2 weeks of treatment and 4 weeks of follow-up, which was (468 +/- 42 vs. 110 +/- 131) ml, (272 +/- 34 ml vs. 11 +/- 112) ml, respectively. SCr reduction (18.3 +/- 4.7 vs. 0.9 +/- 2.4) micro&#32;mol/l at 4 weeks of follow-up was apparent in RA-NAKI group, and the difference was statistically significant (P &lt; 0.05). <br/>Conclusion(s): Addition of terlipressin to conventional treatment may significantly increase MAP, 24-h urine volume, improve renal function and promote ascites resolution in patients with refractory cirrhotic ascites. Moreover, its combination effect is more obvious in AKI patients, and adverse reactions are mild.

1. **Prenatal second-hand smoke exposure and newborn telomere length**  
   Liu B. Pediatric Research 2019;:No page numbers.

Background: Cigarette smoking is associated with shorter telomere lengths in adults, but evidence on the effect of prenatal tobacco exposure is limited. We aimed to investigate the association between prenatal second-hand smoke exposure and newborn telomere length. <br/>Method(s): We recruited 762 mother-newborn pairs from Wuhan Children's Hospital (Wuhan Maternal and Child Healthcare Hospital) between November 2013 and March 2015. Information on second-hand smoke exposure was obtained via questionnaires. Relative telomere length was measured in DNA extracted from umbilical cord blood. We used linear regression to assess the associations between prenatal second-hand smoke exposure and newborn telomere length. <br/>Result(s): In the fully adjusted model, prenatal second-hand smoke exposure was associated with 9.7% shorter newborn telomere length (percent difference: -9.7%; 95% confidence interval (CI): -15.0, -4.0). The estimate for boys was lower (percent difference: -10.9%; 95% CI: -18.6, -2.5) than that for girls (percent difference: -8.5%; 95% CI: -15.8, -0.5), but the interaction term between newborn sex and prenatal second-hand smoke was not significant (P = 0.751). <br/>Conclusion(s): This study demonstrated that prenatal second-hand smoke exposure may be a preventable risk factor for accelerated biological aging in the intrauterine stage, and further suggested possible sex differences in the susceptibility to prenatal second-hand smoke.<br/>Copyright &#xa9; 2019, International Pediatric Research Foundation, Inc.

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1. **Respiratory and gastrointestinal infections at the 2017 Grand Magal de Touba, Senegal: A prospective cohort survey**  
   Hoang V.-T. Travel Medicine and Infectious Disease 2019;32:No page numbers.

Background: The Grand Magal of Touba is the largest Muslim pilgrimage in Senegal with a potential for infectious disease transmission. <br/>Method(s): Clinical follow-up, adherence to preventive measures and qPCR-based respiratory and gastrointestinal pathogens carriage pre- and post-Magal, were assessed. <br/>Result(s): 110 pilgrims from South Senegal were included. The duration of stay in Touba was 3 days. 41.8% and 14.5% pilgrims reported respiratory and gastrointestinal symptoms. Most individuals having the onset of symptoms during their stay in Touba, or soon after returning. The acquisition of rhinoviruses, coronaviruses and adenovirus was 13.0, 16.7 and 4.6% respectively and that of Streptococcus pneumoniae and Haemophilus influenzae was 3.7% and 26.9%. Acquisition of gastrointestinal viruses and parasites was low, while bacterial acquisition ranged from 2.2% for Campylobacter jejuni to 33.0% for enteropathogenic Escherichia coli. <br/>Conclusion(s): This preliminary study confirms that Grand Magal pilgrims are likely to be exposed to communicable disease risk as observed in other pilgrimage settings. Further study including larger numbers of pilgrims are needed to investigate potential risk factors for respiratory and gastrointestinal infections at the Grand Magal.<br/>Copyright &#xa9; 2019 Elsevier Ltd

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1. **Respiratory Virus Epidemiology among US Infants with Severe Bronchiolitis: Analysis of 2 Multicenter, Multiyear Cohort Studies**  
   Hasegawa K. Pediatric Infectious Disease Journal 2019;38(8):No page numbers.

In 2 multicenter cohort studies of 2912 infants hospitalized for bronchiolitis during 2007-2014, the 5 most common pathogens were RSV (76.5%), rhinovirus (23.8%), coronavirus (6.9%), adenovirus (6.4%) and human metapneumovirus (6.0%). Hospitalization months significantly differed for these common pathogens (P &lt;= 0.01), except for coronavirus (P = 0.30). There was a significant heterogeneity in temporal patterns by region in RSV-A and -B (both P &lt; 0.001).<br/>Copyright &#xa9; 2019 Wolters Kluwer Health, Inc. All rights reserved.

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1. **Respiratory virus infection among hospitalized adult patients with or without clinically apparent respiratory infection: a prospective cohort study.**  
   To K. K W. Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases 2019;25(12):1539-1545.

OBJECTIVESTo determine the viral epidemiology and clinical characteristics of patients with and without clinically apparent respiratory tract infection.METHODSThis prospective cohort study was conducted during the 2018 winter influenza season. Adult patients with fever/respiratory symptoms (fever/RS group) were age- and sex-matched with patients without fever/RS (non-fever/RS group) in a 1:1 ratio. Respiratory viruses were tested using NxTAG™ Respiratory Pathogen Panel IVD, a commercially-available multiplex PCR panel.RESULTSA total of 214 acutely hospitalized patients were included in the final analysis, consisting of 107 with fever/RS (fever/RS group), and 107 age- and sex-matched patients without fever/RS (non-fever/RS group). Respiratory viruses were detected in 34.1% (73/214) of patients, and co-infection occurred in 7.9% (17/214) of patients. The incidence of respiratory virus was higher in the fever/RS group than in the non-fever/RS group (44.9% (48/107) versus 23.4% (25/107), p 0.001). Influenza B virus, enterovirus/rhinovirus and coronaviruses were detected more frequently in the fever/RS group, whereas parainfluenza virus 4B and adenovirus were detected more frequently in the non-fever/RS group. Among the non-fever/RS group, chest discomfort was more common among patients tested positive for respiratory viruses than those without respiratory virus detected (44% (11/25) versus 22% (18/82), p 0.04).CONCLUSIONSRespiratory viruses can be frequently detected among hospitalized patients without typical features of respiratory tract infection. These patients may be a source of nosocomial outbreaks.

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1. **Rhinovirus in children presenting to the emergency department: Role of viral load in disease severity and co-infections**  
   Waghmare A. Open Forum Infectious Diseases 2019;6:No page numbers.

Background: Rhinovirus (RV) quantitation by reverse transcription-quantitative PCR is limited by variable amplification efficiency across genotypes. We used a precise viral quantitation method, reverse transcription-digital PCR (RT-dPCR), to characterize the role of viral load in clinical outcomes and in viral co-infections in children presenting to a tertiary hospital emergency department (ED). <br/>Method(s): Children &lt; 18 years with respiratory symptoms for &lt;= 14 days were enrolled from December 1, 2016 to December 31, 2018. Participants had nasal and throat specimens obtained and multiplex PCR testing with a commercial assay (FilmArray; bioMerieux). RV positive samples were quantified using RT-dPCR. Samples with sufficient viral load were sequenced at a 543 bp fragment of the RV VP4/ VP2 region. RV species were assigned by comparison to RV sequences in GenBank using BLAST. Clinical data were collected into REDCap. T-tests were used to compare mean viral loads between groups. <br/>Result(s): Of 1703 children enrolled in the ED, 697 were RV/enterovirus positive by FilmArray [median age 18 months (interquartile range 9-39 months)]. Of 590 subjects with viral load available, 276 (47%) were admitted to the hospital. Among RV mono-infections (N = 434), mean viral load did not differ between subjects admitted vs. discharged from the ED (7.03 log copies/mL for both, P = 0.97). Among admitted subjects with RV mono-infection, viral load also did not differ between subjects requiring supplemental oxygen vs. not (7.01 vs. 7.10 log copies/mL, P = 0.6). Subjects with viral co-infections had lower mean RV viral loads (6.31 log copies/mL) compared with those with RV only (7.03 log copies/mL; P &lt; 0.001) (figure). Significantly different RV viral loads were seen with co-infections with respiratory syncytial virus (RSV), metapneumovirus (MPV) and parainfluenza (PIV), but not with influenza, adenovirus or coronavirus. In 525 sequenced samples (46% RV-A, 4% RV-B, 50% RV-C), viral load did not vary between RV viral species (P = 0.09). <br/>Conclusion(s): Precise viral quantitation demonstrates children co-infected with RV and RSV, MPV or PIV have lower nasal viral loads than those with RV alone. Among RV mono-infections, RV viral load was not associated with admission or need for supplemental oxygen.

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1. **Sociodemographic characteristics associated with adolescent depression in urban and rural areas of Hubei province: a cross-sectional analysis.**  
   Li Guo BMC psychiatry 2019;19(1):386.

BACKGROUNDChina has experienced rapid socioeconomic, and health transitions over the last four decades, and urban-rural disparities are becoming increasingly apparent. Research on depression among rural and urban students can provide evidence on the relationship between sociodemographic characteristics and adolescent depression.METHODSWe examined the association between sociodemographic characteristics and adolescent depression among 3605 students from Wuhan city and Jianli county that was recruited from the local junior middle school via a cross-sectional study. Univariate and multivariate logistic regression models were used to explore the sociodemographic characteristics of adolescent depression in urban and rural areas, respectively. Nomograms were constructed to calculate individual depression risk of junior middle school students.RESULTS32.47% of rural students and 35.11% of urban students display depressive symptoms. The protective factors of depression in urban students are exercise habit, younger, key class, better academic achievement and males, while Left-behind children (LBC), poor academic achievement and females had higher depression risk in rural area. Two nomograms were constructed to screen the adolescent depression in urban and rural junior middle school students, respectively. The clinical tools were well calibrated.CONCLUSIONThe field-based research examined sociodemographic characteristics potentially associated with adolescent depression and offered an effective and convenient tool of individualized depression risk evaluation for junior middle school students. Future longitudinal epidemiologic research on adolescent depression may help to further validate the discovery of present study, which will support developing policies and practices to minimize the factors of adolescent depression.

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1. **Solunum yolu enfeksiyonlu cocuklarda saptanan viral etkenlerin epidemiyolojisi ve mevsim dagiliminin belirlenmesiDetermination of epidemiology and seasonal distribution of viral agents detected in children with respiratory tract infection**  
   Tokak S. Cocuk Enfeksiyon Dergisi 2019;13(4):No page numbers.

Objective: The aim of this study was to determine the viral pathogens in the respiratory tract infections of children who applied to various outpatient clinics of our hospital and to investigate their seasonal distribution. <br/>Material(s) and Method(s): Between January 2016 and January 2017, 997 children (45.1% female, 54.9% male, 0 month-17 years) who were diagnosed with upper or lower respiratory tract infection were included in the study. Twenty-one viral respiratory pathogens were analyzed by multiplex polymerase chain reaction method by using Fast Track FTD kit (Fast Track Diagnosis, Luxemburg). <br/>Result(s): One or more respiratory viruses were detected in 761 (76.3%) of 997 patients and no virus was detected in 236 (22.8%) of the patients. In our study, distrubition of respiratory tract viruses were as; Adenovirus (2.76%), Bocavirus (4.20%), Coronavirus 229E (0.92%), Coronavirus OC43 (6.96%), Enterovirus (6.04%), Metapneumovirus A (4.60%), Metapneumovirus B (4.47%), Parainfluenza 1 (0.13%), Parainfluenza 2 (1.18%), Parainfluenza 3 (8.80%), Parainfluenza 4 (1.18%), Parainfluenza 4a (0.13%), Parainfluenza 4b (0.13%), Rhinovirus (48.75%), RSVA/B (37.84%), Influenza B (3.02%) and Parechovirus (6.57%). When we observe the seasonal distribution of viral agents, RSV was the most common agent in winter and it was rhinovirus in spring, summer and autumn season. <br/>Conclusion(s): Approximately 80% of the patients included in the study had a viral agent that may be responsible for clinical symptoms. For this reason, the rapid and sensitive diagnosis of viruses causing viral respirato-ry infections will reduce the cost of treatment, reduce unnecessary use of antibiotics and prevent the development of resistance to antibiotics and will guide the clinician to prevent the infections caused by these viruses.<br/>&#xa9;Copyright 2019 by Pediatric Infectious Diseases and Immunization Society.

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1. **The 3.1-angstrom cryo-electron microscopy structure of the porcine epidemic diarrhea virus spike protein in the prefusion conformation**  
   Wrapp D. Journal of Virology 2019;93(23):No page numbers.

Porcine epidemic diarrhea virus (PEDV) is an alphacoronavirus that has a significant agricultural and economic impact due to the high mortality rate associated with infection of neonatal piglets. Like other coronaviruses, PEDV makes use of a large, trimeric spike (S) glycoprotein to mediate membrane fusion and gain entry into host cells. Despite the importance of the spike protein in viral entry and host immune responses, high-resolution structural information concerning this large macromolecular machine has been difficult to obtain. Here, we report the cryo-electron microscopy structure of the PEDV S protein in the prefusion conformation at a resolution of 3.1 A. Our studies revealed that the sialic acid-binding domain at the N terminus of the S1 subunit has an orientation that is substantially different from that observed in the previously determined spike structure from human alphacoronavirus NL63. We also observed dissociated S1 subunit trimers wherein the putative receptor-binding domains exist in a conformation differing from that observed in the intact spike proteins, suggesting that the PEDV receptor-binding domain undergoes conformational rearrangements akin to those that have been described in the related betacoronaviruses. Collectively, these data provide new insights into the biological processes that mediate alphacoronavirus attachment, receptor engagement, and fusion triggering while also identifying a source of conformational heterogeneity that could be manipulated to improve PEDV vaccine antigens. IMPORTANCE Coronavirus spike proteins are large, densely glycosylated macromolecular machines that mediate receptor binding and membrane fusion to facilitate entry into host cells. This report describes the atomic-resolution structure of the spike protein from porcine epidemic diarrhea virus, a pathogenic alphacoronavirus that causes severe agricultural damage. The structure reveals a novel position for the sialic acid-binding attachment domain in the intact spike. We also observed shed fusion-suppressive capping subunits that displayed the putative receptorbinding domain in an accessible conformation. These observations provide a basis for understanding the molecular mechanisms that drive the earliest stages of alphacoronavirus infection and will inform future efforts to rationally design vaccines.<br/>Copyright &#xa9; 2019 Wrapp and McLellan.

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1. **The global burden of premature mortality due to the Middle East respiratory syndrome (MERS) using standard expected years of life lost, 2012 to 2019**  
   Salamatbakhsh M. BMC public health 2019;19(1):1523.

BACKGROUND: It has been 8years since the first case of Middle East respiratory syndrome coronavirus (MERS-CoV) was reported in Saudi Arabia and the disease is still being reported in 27 countries; however, there is no international study to estimate the overall burden related of this emerging infectious disease. The present study was conducted to assess the burden of premature mortality due to Middle East respiratory syndrome (MERS) worldwide. <br/>METHOD(S): In this retrospective analysis, we have utilized publicly available data from the WHO website related to 1789 MERS patients reported between September 23, 2012 and May 17, 2019. To calculate the standard expected years of life lost (SEYLL), life expectancy at birth was set according to the 2000 global burden of disease study on levels 25 and 26 of West model life tables from Coale-Demeny at 82.5 and 80years for females and males, respectively. <br/>RESULT(S): Overall, the total SEYLL in males and females was 10,702 and 3817.5years, respectively. The MERS patients within the age range of 30-59year-olds had the highest SEYLL (8305.5years) in comparison to the patients within the age groups 0-29 (SEYLL=3744.5years) and&gt;=60years (SEYLL=2466.5years). The total SEYLL in all age groups in 2012, 2013, 2014, 2015, 2016, 2017, 2018, and 2019 were 71.5, 2006.5, 3162, 4425.5, 1809.5, 878, 1257.5 and 909years, respectively. The most SEYLL related to MERS-CoV infection was in the early four years of the onset of the pandemic (2012 to 2015) and in the last four years of the MERS-CoV pandemic (216 to 2019), a significant reduction was observed in the SEYLL related to MERS-CoV infection in the MERS patients. <br/>CONCLUSION(S): We believe that the findings of this study will shed light about the burden of premature mortality due to MERS infection in the world and the results may provide necessary information for policy-makers to prevent, control, and make a quick response to the outbreak of MERS-CoV disease.

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1. **The Risk of Serious Bacterial Infection in Febrile Infants 0-90 Days of Life with a Respiratory Viral Infection**  
   Nicholson E.G. Pediatric Infectious Disease Journal 2019;38(4):355-361.

Background: Molecular diagnostic methods enhance the sensitivity and broaden the spectrum of detectable respiratory viruses in febrile infants &lt;=90 days of life. We describe the occurrence of respiratory viruses in this population, as well as the rates of serious bacterial infection (SBI) and respiratory viral coinfection with regard to viral characteristics. <br/>Method(s): This was a prospective observational cohort study performed in the emergency department that included previously healthy febrile infants &lt;=90 days of life. Clinical and historical characteristics were documented, and a respiratory nasal wash specimen was obtained from each patient. This sample was tested for 17 common respiratory pathogens, and a chart review was conducted to ascertain whether the infant was diagnosed with an SBI. <br/>Result(s): In a 12-month period, 67% of the 104 recruited febrile infants were positive for a respiratory virus. The most commonly detected viruses were rhinovirus, respiratory syncytial virus, enterovirus and influenza. The rate of respiratory viral and SBI coinfection was 9% overall, and infants with either a systemic respiratory virus or negative viral testing were 3 times more likely to have an SBI than those with viruses typically restricted to the respiratory mucosa (95% confidence interval: 1.1, 9.7). <br/>Conclusion(s): Respiratory viruses are readily detectable via nasopharyngeal wash in febrile infants &lt;=90 days of life. With the enhanced sensitivity of molecular respiratory diagnostics, rates of coinfection of respiratory viruses and SBI may be higher than previously thought. Further investigation utilizing molecular diagnostics is needed to guide usage in febrile infants &lt;=90 days.<br/>Copyright &#xa9; 2019 Wolters Kluwer Health, Inc. All rights reserved.

1. **The role of PCR in diagnostics of acute respiratory viral infections in children**  
   Serhiyenka K. European Respiratory Journal 2019;54:No page numbers.

Acute respiratory virus infections (ARVI) are most frequent pathology in the structure of morbidity and mortality among infectious diseases worldwide. <br/>Material(s) and Method(s): Materials for laboratory study served as nasopharyngeal swabs in the first 2 days of illness onset in patients under the age of 18 years. Swabs were detected for the presence of genetic material of influenza viruses A and B, parainfluenza, respiratory syncytial virus (RSV), adenovirus, rhinovirus, metapneumovirus, bokavirus and coronavirus by PCR detection in real time were delivered at the laboratory of influenza and influenzalike illness. Results and Discussion: Among 607 surveyed patients the frequency of detection of RNA/DNA respiratory viruses in different years ranged from 55% to 72% (average 65%), which confirms the viral etiology of ORI in most cases. The analysis of the results showed that 88% of cases respiratory viruses identified monoinfection and in 12% of cases observed simultaneous infection with two or more agents. In the structure of the pathogens of ARVI as the main etiological agents of ARVI were prevalent parainfluenza (24%), rhinoviruses (16%) and RSV (16%). The frequency of detection of influenza A viruses and bocaviruses amounted to 11% and 4% respectively. Metapneumo-, adeno-, and influenza B viruses were identified with the same frequency (5%), coronavirus was isolated in 2% of cases. The analysis of the study by PCR nasopharyngeal smears taken from patients with symptoms of ARVI leads to the following <br/>CONCLUSION(S): O in most cases (65%) acute respiratory infections are viral O application of PCR method to detect a wide range of respiratory viruses and co-infection several viruses.

1. **Two-year onset of respiratory symptoms among Chinese school children: The role of dampness, ETS and redecoration at home and PM10, NO2, SO2 and inadequate ventilation flow in the classroom**  
   Norback D. European Respiratory Journal 2019;54:No page numbers.

The aim was to study onset of respiratory symptoms among students in China in relation to the school and home environment. A two-year prospective cohort study was performed among 1325 students in eight schools in Taiyuan in northern China. Air pollution was measured at baseline in the schools. Respiratory symptoms and the home environment were assessed by a questionnaire (baseline and follow-up). Associations were calculated by multilevel logistic regression. The 2-year onset was 14.3% for wheeze, 23.2% for daytime attacks of breathlessness, 15.4% for nocturnal cough 4.7% for nocturnal wheeze/breathlessness and 37.3% for respiratory infections. The mean concentrations of PM10, SO2, NO2, ozone and CO2 in the classrooms were 129 mug/m3, 68.0 mug/m3, 43.2 mug/m3, 8.6 mug/m3 and 1208 ppm respectively. Environmental tobacco smoke (ETS), dampness or mould at home and ozone in the classroom increased onset of wheeze. Onset of daytime breathlessness was associated with redecoration and dampness/mould at home and CO2 and relative air humidity (RH) in the classrooms. Dampness/mould at home, PM10, CO2 and RH in the classrooms and outdoor PM10, SO2 and NO2 increased onset of nocturnal cough. Onset of nocturnal wheeze/breathlessness was associated with dampness/mould at home and RH and PM10 in the classrooms. Respiratory infections were more common at higher levels of outdoor PM10. In conclusion, air pollution (PM10, ozone, SO2 and NO2) and inadequate ventilation flow in the classrooms as well as ETS, dampness or mould and chemical emissions from redecoration at home can increase onset of respiratory symptoms.

1. **Typical epidemiology of respiratory virus infections in a Brazilian slum**  
   Goes L.G.B. Journal of Medical Virology 2019;:No page numbers.

Host population size, density, immune status, age structure, and contact rates are critical elements of virus epidemiology. Slum populations stand out from other settings and may present differences in the epidemiology of acute viral infections. We collected nasopharyngeal specimens from 282 children aged &lt;=5 years with acute respiratory tract infection (ARI) during 2005 to 2006 in one of the largest Brazilian slums. We conducted real-time reverse transcription-polymerase chain reaction (RT-PCR) for 16 respiratory viruses, nested RT-PCR-based typing of rhinoviruses (HRVs), and collected clinical symptoms. Viruses were common causes of respiratory disease; with &gt;=1 virus being detected in 65.2% of patients. We detected 15 different viruses during 1 year with a predomidnance of HRV (33.0%) and human respiratory syncytial virus (hRSV, 12.1%) infections, and a high rate of viral coinfections (28.3%). We observed seasonality of hRSV, HRV and human coronavirus infections, more severe symptoms in hRSV and influenza virus (FLU) infections and prolonged circulation of seven HRV clusters likely representing distinct serotypes according to genomic sequence distances. Potentially unusual findings included the absence of human metapneumovirus detections and lack of typical FLU seasonal patterns, which may be linked to the population size and density of the slum. Nonetheless, most epidemiological patterns were similar to other studies globally, suggesting surprising similarities of virus-associated ARI across highly diverse settings and a complex impact of population characteristics on respiratory virus epidemiology.<br/>Copyright &#xa9; 2019 The Authors. Journal of Medical Virology published by Wiley Periodicals, Inc.

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1. **Viral etiologies of acute respiratory tract infections among hospitalized children - A comparison between single and multiple viral infections**  
   Yen C.-Y. Journal of Microbiology, Immunology and Infection 2019;52(6):902-910.

Background: Acute respiratory tract infections are commonly caused by viruses in children. The differences in clinical data and outcome between single and multiple viral infections in hospitalized children were analyzed. <br/>Method(s): We retrospectively reviewed the medical records of hospitalized children who had fever and a xTAG Respiratory Virus Panel (RVP) test over a 2-year period. The clinical data were analyzed and compared between single and multiple viral infections. Viral etiologies in upper and lower respiratory infections were analyzed and compared. <br/>Result(s): A total of 442 patients were enrolled. Patients with positive viral detection (N = 311) had a significantly lower rate of leukocytosis (p = 0.03), less evidence of bacterial infection (p = 0.004), and shorter duration of hospitalization (p = 0.019) than those with negative viral detection. The age of patients with multiple viral infections was younger than those with single viral infection; however, there were no significant differences in duration of fever, antibiotics treatment and hospitalization between these two groups. The most commonly identified virus was human rhinovirus. About 27% (n = 83) of patients had multiple viral infections. Overall, the highest percentage of human bocavirus infection was detected in multiple viral infections (79%). Lower respiratory tract infection (LRTI) was independently associated with multiple viral infections (p = 0.022), respiratory syncytial virus (RSV) infection (p = 0.001) and longer hospitalization duration (p = 0.011). <br/>Conclusion(s): Multiple viral infections were associated with younger age and a higher risk of developing LRTI. However, multiple viral infections did not predict a worse disease outcome. More studies are needed to unveil the interplay between the hosts and different viruses in multiple viral infections.<br/>Copyright &#xa9; 2019

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1. **Widespread of non-typeable Haemophilus influenzae with high genetic diversity after two decades use of Hib vaccine in China**  
   Dong Q. Journal of Clinical Laboratory Analysis 2019;:No page numbers.

Background: The aim of this study was to analyze the microbiological characteristics of nasopharyngeal carriage Haemophilus influenzae isolates collected from children with respiratory infections in Beijing hospital and Youyang Hospital of China. <br/>Method(s): The serotypes of all isolates were determined using latex agglutinated antisera (a-f). The minimum inhibitory concentrations (MICs) of 11 antibiotics were determined using E-test strips. For the beta-lactamase-negative ampicillin-resistant (BLNAR) isolates, ftsI gene was sequenced based on fragments amplified by PCR. STs of H influenzae isolates were determined by multi-locus sequence typing. <br/>Result(s): The overall carriage rate of H influenzae in the study population was 9.1% (362/3984). One hundred and ninety H influenzae isolates which were selected in our study were non-typeable (NTHi) and 44 (23.2%) of them were positive for beta-lactamase. All isolates were susceptible to ceftriaxone and levofloxacin. Susceptibility rates to erythromycin and sulfamethoxazole-trimethoprim in Beijing were significantly higher than Youyang (P &lt;.05). Thirty-six BLNAR isolates were identified. The MLST analysis showed 108 STs in 190 isolates, the most common of which were ST408 (11, 5.8%), ST914 (10, 5.3%), ST57 (9, 4.7%), and ST834 (6, 3.2%). Twelve STs were detected in both of the study sites, which covered 63 isolates. <br/>Conclusion(s): All isolates in the present study were NTHi, which suggested widespread of this type in China. The BLNAR isolates were detected more frequently than before. Because high genetic diversity of NTHi isolates of H influenzae exists worldwide, it is important to continuously monitor these bacteria in the future.<br/>Copyright &#xa9; 2019 The Authors. Journal of Clinical Laboratory Analysis published by Wiley Periodicals, Inc.

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1. **[Correlation between screen-watching time and emotional problems as well as combination effect of outdoor time among preschool children].**  
   Pan W. Zhonghua liu xing bing xue za zhi = Zhonghua liuxingbingxue zazhi 2019;40(12):1569-1572.

Objective: To evaluate the positive correlation between excessive screen-watching time, combined effect of screen-watching and outdoor time and the emotional problems in preschool children. Methods: A total of 27 200 preschool children aged 3-6 years in 109 kindergartens in 11 cities in Jiangsu, Hubei, Anhui participated in the study. Information on both screen-watching and outdoor time and social-demographic characteristics was collected through the Questionnaire on the healthy Development of Preschool Children. Emotional problems of these children were accessed by using the Strengths and Difficulties Questionnaire (SDQ). Correlation intensity between excessive screen time and emotional problems (suspicious or abnormal) in preschool children, and the combined effects of screen-watching and outdoor time were analyzed by binary logistic regression model. Results: The overall detected rate of emotional symptoms in preschool children was 17.9% (4 868/27 200). Rates showed in preschool children would include: with screen-watching time>1 h/d as 62.4% (16 983/27 200) and with outdoor time<2 h/d as 65.7% (17 873/27 200). After adjusting for confounding factors as gender, age, place of residence, family economic status, BMI, parents' age and education level, data showed that the screen-watching time was positive correlated with emotional symptoms (OR=1.15, 95%CI: 1.08-1.24) while the outdoor time was positive correlated with emotional symptoms (OR=1.08, 95%CI: 1.01-1.16). Strong correlation between the combination of screen-watching and outdoor time and the existing emotional problems among preschool children was seen. Conclusions: Excessive screen-watching time was prevalent among preschool children. Screen-watching time was positively associated with the existing emotional problems while the combined effect of screen-watching time and outdoor time was stronger.

1. **[Genetic Analysis and Prenatal Diagnosis for Thalassemia of Pregnant Women in Wuhan Area of China].**  
   Cai Wen-Qian Zhongguo shi yan xue ye xue za zhi 2019;27(6):1919-1924.

OBJECTIVETo investigate the common genotypes of thalassemia of the pregnant woman in Wuhan area of China, and to make the prenantal gentic diagnosis for the fetus at high risk of thalassemia.METHODSA total of 357 pregnant woman with the primary positive screening in Wuhan area were included in this study. Genotypes were measured with PCR-flow cytometry, and fluorescence hybridization was used for detecting thalassmia gene. The husbands of the pregnant women with thalassmia were recalled for genetic analysis of thalassemia, and 9 cases of fetuses with high risk of thalassemia were detected by amniocontesis after genetic counseling.RESULTSIn 357 cases of the pregnant women in Wuhan area, the 214 cases were diagnosed as thalassemia, 80 cases were diagnosed as alpha thalassemia (up to 90%), whose genotypes were determind as --SEA/αα (78.75%) and -α3.7/αα (15.00%), while 133 cases were determind with genotype of IVS-2-654/N (43.61%), CD41-42/N (20.30%) and CD17/N (19.55%) in beta thalassemia (up to 80%). 9 prenatal diagnosis continued pregnancy included 1case of -α3.7/--SEA, 1 case of -α3.7/αα, 2 cases of --SEA/αα, 2 cases of IVS-2-654/N and 3 cases of normal, however, the pregnancy in prenatal diagnosis of -α3.7/--SEA voluntarily was terminated after genetic counseling. Follow-up results after delivery were consistent with prenatal diagnosis.CONCLUSIONMinor and static thalassemia were very common in Wuhan area. Genetic detection after primary screening, genetic counseling and prenatal diagnosis in pregnant women could provide a theoretical basis for the development of regional specific prevention of intermedius and critical thalassemia which is meaning for rearing and bearing better children.

1. **Pathogens associated with febrile respiratory illnesses in Haitian children**  
   Kim Y. Pediatrics 2018;141(1):No page numbers.

Background: There are limited data available on etiology of febrile respiratory illnesses in Haitian children. One of the most recent study of Caribbean countries by the Caribbean Epidemiology Centre showed significant incidence of respiratory syncytial virus (RSV) and influenza A virus in the Caribbean counties. However, this study did not include Haiti and was not focused on children. A recent Haitian study of children being admitted to the hospital showed significant morbidity and mortality from respiratory illnesses. Given the recent earthquake in Haiti and numerous international aid workers traveling to Haiti who may introduce new pathogens, determining the distribution of pathogens associated with febrile respiratory illness in Haitian children is important in optimizing their care. <br/>Objective(s): To determine the pathogens associated with febrile respiratory illnesses in Haitian children. <br/>Method(s): We have established a cohort of students attending schools run by the Christianville Foundation in the Gressier region of Haiti. During the 2013-2014 and 2014-2015 academic year, nasal swabs were obtained from children presenting with febrile respiratory illness. The swabs were stored in -20C. Nucleic acid was isolated from these swabs using the nucleic acid isolation kit (Stratec) and real time PCR was performed using the Respiratory pathogens 21 plus kit (Fast-track Diagnostics). <br/>Result(s): The virus detected in order of frequency was rhinovirus 35.7%, influenza H1N1 13.7%, Adenovirus 6.6%, Enterovirus 6.0%, influenza B 4.9%, Coronavirus 43 3.8%, Human metapneumovirus 3.3%, influenza A 2.8%, Parainfluenza 4 2.7%, RSV 2.2%, Parainfluenza 2 2.2%, Bocavirus 1.6%, Parainfluenza 3 1.6%, Coronavirus 22 1.1%, Coronavirus HKU 1.1%, Parechovirus 0.5%, Parainfluenza 1 0%, and Coronavirus 63 0%. 27.4% of patients were positive for multiple viruses. As for bacteria detected, Streptococcus Pneumoniae 57%, Staphylococcus Aureus at 22%, Haemophilus influenza B 3.8%, Mycoplasma pneumonia 2.2%, and Chlamydia pneumonia 0.5%.18.7% of patients were positive for multiple bacteria. <br/>Conclusion(s): Rhinovirus was the most commonly detected virus of febrile respiratory illness in Haitian children. However, compared to other studies in the Caribbean region and other tropical countries, RSV incidence was low at only 2.2%. This may be due to the population studied with the youngest patient being 2 years of age and RSV being frequently detected in patients 2 years and younger. There was high frequency of Streptococcus Pneumoniae in this population at 57% but majority of these cases likely represent asymptomatic carrier status rather than the etiology of the febrile respiratory illness. Given the lack of immunization for Streptococcus Pneumoniae in Haiti, the rate of colonization is in line with previously published rates in unvaccinated countries. Haiti has started an initiative to vaccinate for Streptococcus Pneumoniae this year. Further studies will be required to validate the findings of this study and the efficacy of the vaccination program in Haiti.

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1. **Tracheal Microbiota in Patients with a Tracheostomy Before, during and after an Acute Respiratory Infection**  
   Perez-Losada M. Pediatric Infectious Disease Journal 2018;37(11):No page numbers.

Examining tracheal microbiota before, during and after acute respiratory infection in patients with a tracheostomy demonstrated large baseline intrapatient microbiota variability and a significant bloom of Haemophilus and Moraxella on day 1 of acute respiratory infection symptoms. The tracheal microbiota community composition changed significantly from baseline to 1 month after acute respiratory infection.<br/>Copyright &#xa9; 2018 Wolters Kluwer Health, Inc. All rights reserved.

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1. **Epidemiologia oraz przebieg kliniczny wirusowych zakazen drog oddechowych u dzieci w wieku 0-5 latEpidemiology and clinical course of viral respiratory infections in children aged 0-5 years**  
   Nitsch-Osuch A. International Review of Allergology and Clinical Immunology in Family Medicine 2016;22(2):72-80.

Viral respiratory tract infections are a major cause of outpatient and hospital admissions among young children. The aim of the study was to describe the incidence and the course of viral respiratory infections in children aged 0-5 years. Material and methods. The total number of 114 children was included into the study. All patients presented influenza-like symptoms and were examined for the presence of 12 viruses. Nosopharyngeal swabs were tested with RT-PCR method for: influenza A virus, influenza B virus, parainfluenza 1, parainfluenza 2, parainfluenza 3 virus, rhinovirus, metapneumovirus, adenowirus, RSV A, RSV B virus and two coronaviruses: OC43 and 229E/NL63. Results. The viral etiology of respiratory tract infection was confirmed in 72 children (62%), in 62 (54%) patients the disease was caused by a single etiological agent, while in 9 (8%) patients there were viral coinfections. The most often found viruses were influenza A and B viruses (35 patients, 30%), and RSV infections (27 patients, 24%). Conclusions. Since influenza viruses are the most common etiological agents of respiratory tract infections in young children, it is strongly recommended to increase the influenza vaccine coverage rates among children younger than 5 years, as the vaccination is the most effective tool in the prevention of the disease.<br/>Copyright &#xa9; 2016 Medpress. All rights reserved.

1. **Clinical application of entire gastrointestinal barium meal combined with multi-temporal abdominal films in patients with intestinal neuronal dysplasia type B**  
   Li X.-Y. Saudi Medical Journal 2013;34(1):46-53.

Objectives: To report and evaluate the application of entire gastrointestinal barium meal combined with multi-temporal abdominal films in the diagnosis of patients with intestinal neuronal dysplasia type B (IND type B). <br/>Method(s): Thirty-six patients with symptoms of long-standing constipation were enrolled in this study. The study took place at the Department of General Surgery, Xiangyang Central Hospital, Hubei Province, China from July 2007 to October 2012. All of them had already been subjected to barium enema and anorectal manometry and were suspected to be IND type B, but were not confirmed by mucous membrane acetylcholinesterase determination. All underwent entire gastrointestinal barium meal combined with multi-temporal abdominal films. The data was collected and then analyzed retrospectively. <br/>Result(s): After entire gastrointestinal barium meal combined with multi-temporal abdominal films, 30 out of 36 cases in this group were diagnosed with intestinal neuronal diseases, and then treated with appropriate surgical treatment. The postoperative pathological diagnosis was IND type B. The other 6 patients in this group still could not be diagnosed explicitly after the test; thus, we treated them with conservative treatment. <br/>Conclusion(s): Entire gastrointestinal barium meal combined with multi-temporal abdominal films has the advantage of being able to test the gastrointestinal transfer capabilities, and to find physiological and pathological changes simultaneously. It could provide important proof for the diagnosis of patients with intestinal neuronal dysplasia type B.<br/>Copyright &#xa9; 2013 Saudi Arabian Armed Forces Hospital. All rights reserved.

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## C. Search History

|  | **Source** | **Criteria** | **Results** |
| --- | --- | --- | --- |
| 1. | Medline | exp CORONAVIRUS/ OR exp CORONAVIRUS INFECTIONS/ | 15042 |
| 2. | Medline | ((novel OR new OR nouveau OR 2019) ADJ2 (coronavirus\* OR "corona virus\*" OR coronovirus\* OR coronavirinae\*)).ti,ab | 1894 |
| 3. | Medline | ((wuhan OR hubei OR beijing OR shanghai OR huanan OR China OR Chinese) ADJ2 (coronavirus\* OR "corona virus\*" OR 2019-nCoV OR COVID-19 OR COVID19 OR SARS-CoV-2)).ti,ab | 374 |
| 4. | Medline | ((respiratory\* ADJ2 (symptom\* OR disease\* OR illness\* OR condition\* OR infection\*)) ADJ5 (wuhan OR hubei OR beijing OR shanghai OR huanan OR China OR Chinese)).ti,ab | 618 |
| 5. | Medline | (coronavirus\* OR coronovirus\* OR coronavirinae\* OR Coronavirus\* OR Coronovirus\* OR Wuhan\* OR Hubei\* OR Huanan OR "2019-nCoV" OR 2019nCoV OR nCoV2019 OR "nCoV-2019" OR "COVID-19" OR COVID19 OR "CORVID-19" OR CORVID19 OR "WN-CoV" OR WNCoV OR "HCoV-19" OR HCoV19 OR CoV OR "2019 novel\*" OR Ncov OR "n-cov" OR "SARS-CoV-2" OR "SARSCoV-2" OR "SARSCoV2" OR "SARS-CoV2" OR SARSCov19 OR "SARS-Cov19" OR "SARSCov-19" OR "SARS-Cov-19" OR Ncovor OR Ncorona\* OR Ncorono\* OR NcovWuhan\* OR NcovHubei\* OR NcovChina\* OR NcovChinese\*).ti,ab | 18512 |
| 6. | Medline | ("severe acute respiratory syndrome\*").ti,ab | 4761 |
| 7. | Medline | (1 OR 2 OR 3 OR 4 OR 5 OR 6) | 26708 |
| 8. | Medline | exp INFANT/ OR exp CHILD/ OR ADOLESCENT/ OR MINORS/ OR PUBERTY/ OR PEDIATRICS/ | 3526072 |
| 9. | Medline | (Infant\* OR infancy OR Newborn\* OR Baby\* OR Babies OR Neonat\* OR Preterm\* OR premature\* OR low birth weight OR VLBW OR LBW OR Postmatur\* OR Child\* OR Schoolchild\* OR (School ADJ age\*) OR Preschool\* OR Kid OR kids OR Toddler\* OR Teen\* OR Boy\* OR Girl\* OR Minor\* OR Pubert\* OR Pubescen\* OR Prepubescen\* OR adolescent OR Paediatric\* OR Pediatric\* OR Peadiatric\* OR youth\* OR "young people").ti,ab | 2631910 |
| 10. | Medline | (8 OR 9) | 4493617 |
| 11. | Medline | (7 AND 10) | 3871 |
| 12. | Medline | exp SENSITIVITY AND SPECIFICITY/ OR DIAGNOSIS/ OR DIAGNOSIS, DIFFERENTIAL/ | 1012126 |
| 13. | Medline | (manifest\* OR symptom\* OR sign\* OR sensitiv\*OR diagnose OR diagnosed OR diagnoses OR diagnosing OR diagnosis OR diagnostic).ti,ab | 4570446 |
| 14. | Medline | (12 OR 13) | 5142481 |
| 15. | Medline | (11 AND 14) | 1357 |
| 16. | Medline | (20191201-20200407).dp | 519978 |
| 17. | Medline | (15 AND 16) | 94 |
| 18. | EMBASE | exp CORONAVIRINAE/ OR exp "CORONAVIRUS INFECTIONS"/ | 18637 |
| 19. | EMBASE | ((novel OR new OR nouveau OR 2019) ADJ2 (coronavirus\* OR "corona virus\*" OR coronovirus\* OR coronavirinae\*)).ti,ab | 1668 |
| 20. | EMBASE | ((wuhan OR hubei OR beijing OR shanghai OR huanan OR China OR Chinese) ADJ2 (coronavirus\* OR "corona virus\*" OR 2019-nCoV OR COVID-19 OR COVID19 OR SARS-CoV-2)).ti,ab | 197 |
| 21. | EMBASE | ((respiratory\* ADJ2 (symptom\* OR disease\* OR illness\* OR condition\* OR infection\*)) ADJ5 (wuhan OR hubei OR beijing OR shanghai OR huanan OR China OR Chinese)).ti,ab | 636 |
| 22. | EMBASE | (coronavirus\* OR coronovirus\* OR coronavirinae\* OR Coronavirus\* OR Coronovirus\* OR Wuhan\* OR Hubei\* OR Huanan OR "2019-nCoV" OR 2019nCoV OR nCoV2019 OR "nCoV-2019" OR "COVID-19" OR COVID19 OR "CORVID-19" OR CORVID19 OR "WN-CoV" OR WNCoV OR "HCoV-19" OR HCoV19 OR CoV OR "2019 novel\*" OR Ncov OR "n-cov" OR "SARS-CoV-2" OR "SARSCoV-2" OR "SARSCoV2" OR "SARS-CoV2" OR SARSCov19 OR "SARS-Cov19" OR "SARSCov-19" OR "SARS-Cov-19" OR Ncovor OR Ncorona\* OR Ncorono\* OR NcovWuhan\* OR NcovHubei\* OR NcovChina\* OR NcovChinese\*).ti,ab | 21598 |
| 23. | EMBASE | ("severe acute respiratory syndrome\*").ti,ab | 5084 |
| 24. | EMBASE | (18 OR 19 OR 20 OR 21 OR 22 OR 23) | 32402 |
| 25. | EMBASE | exp CHILD/ OR ADOLESCENT/ OR "MINOR (PERSON)"/ OR PEDIATRICS/ | 3338768 |
| 26. | EMBASE | (Infant\* OR infancy OR Newborn\* OR Baby\* OR Babies OR Neonat\* OR Preterm\* OR premature\* OR low birth weight OR VLBW OR LBW OR Postmatur\* OR Child\* OR Schoolchild\* OR (School ADJ age\*) OR Preschool\* OR Kid OR kids OR Toddler\* OR Teen\* OR Boy\* OR Girl\* OR Minor\* OR Pubert\* OR Pubescen\* OR Prepubescen\* OR adolescent OR Paediatric\* OR Pediatric\* OR Peadiatric\* OR youth\* OR "young people").ti,ab | 3291858 |
| 27. | EMBASE | (25 OR 26) | 4575595 |
| 28. | EMBASE | "SENSITIVITY AND SPECIFICITY"/ OR DIAGNOSIS/ OR DIFFERENTIAL DIAGNOSIS/ | 1951938 |
| 29. | EMBASE | (manifest\* OR symptom\* OR sign\* OR sensitiv\*OR diagnose OR diagnosed OR diagnoses OR diagnosing OR diagnosis OR diagnostic).ti,ab | 12317363 |
| 30. | EMBASE | (28 OR 29) | 13008144 |
| 31. | EMBASE | (24 AND 27 AND 30) | 2735 |
| 32. | EMBASE | 31 [Since 01-Dec-2019] | 191 |

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