Cases of long-term outcomes of COVID-19 in children

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Objectives of this presentation

- COVID-19 has serious medical consequences on children
  - MIS-C
  - Long-COVID
- Vaccinate those who are age-eligible

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About me

- Physician specializing in infections in children
- Taking care of kids for over 20 years
  - 15 years at OHSU/Doernbecher Children's Hospital
- Professor, Pediatric Infectious Diseases
- Medical director for Infection Prevention and Control at OHSU/DCH
- I've been talking a LOT about COVID-19 since March 2020
  - Community, media news, state elected officials, national committees
- I believe in vaccinations for children, healthcare workers, and my family

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MIS-C

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Case 1

- I’m called at 11pm on a Friday night by a pediatric resident
- 8 month old little girl, otherwise well, who began to have fatigue, poor eating, and a fever since Wednesday evening
- The family had taken her to several clinics, who told them that the girl had a viral infection
- By Friday afternoon – she had a rash on her legs, and was very inactive
- The family, out of fear of her worsening condition, brought her to the Emergency department
- She looked terrible, and ended up in the pediatric intensive care unit (PICU).
  - The resident was calling me from there

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Case 1 (continued)

- Pictures of her rash were shown to me through her medical chart
- Given her constellation of: age, fever, rash, and low blood pressure
  - We thought she had a very serious bacterial infection known as meningococcus
  - Speed is of utmost importance with treatment
    - Antibiotics were prescribed
    - I notified public health, who found the girl's close contacts, and prescribed antibiotics to those persons to reduce their risk of getting this infection
- In the next 36 hours - minimal improvement in the little girl despite antibiotics and ICU care
- By Monday morning – we had to consider a different disease

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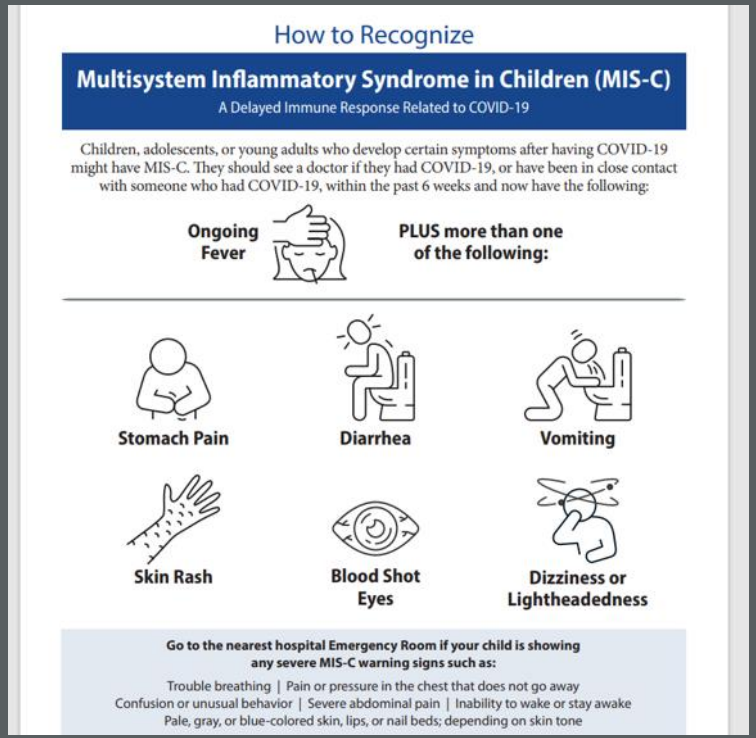
Multisystem Inflammatory Syndrome-Children (MIS-C)

- A condition where different body parts can become inflamed, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs.
  - This condition usually means being hospitalized, and in the ICU
- Many children with MIS-C either had COVID-19 in the past, or were around someone with COVID-19.
- 68 cases in Oregon
  - Highest risk ages are 5-11 years old



Oregon Health Authority, last accessed 5/13/2022

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Case 1 (continued)

- Mother and grandmother had tested positive by a nasal PCR COVID-19 two months ago. Little girl wasn't sick, and so wasn't tested
  - While in the PICU, her blood was tested, and showed she had been exposed to COVID-19.
- MIS-C treatment was initiated for the little girl
  - She also finished her course of intravenous antibiotics for possible bacterial infection.
- The child eventually left the hospital, to go home after a total of 2 weeks

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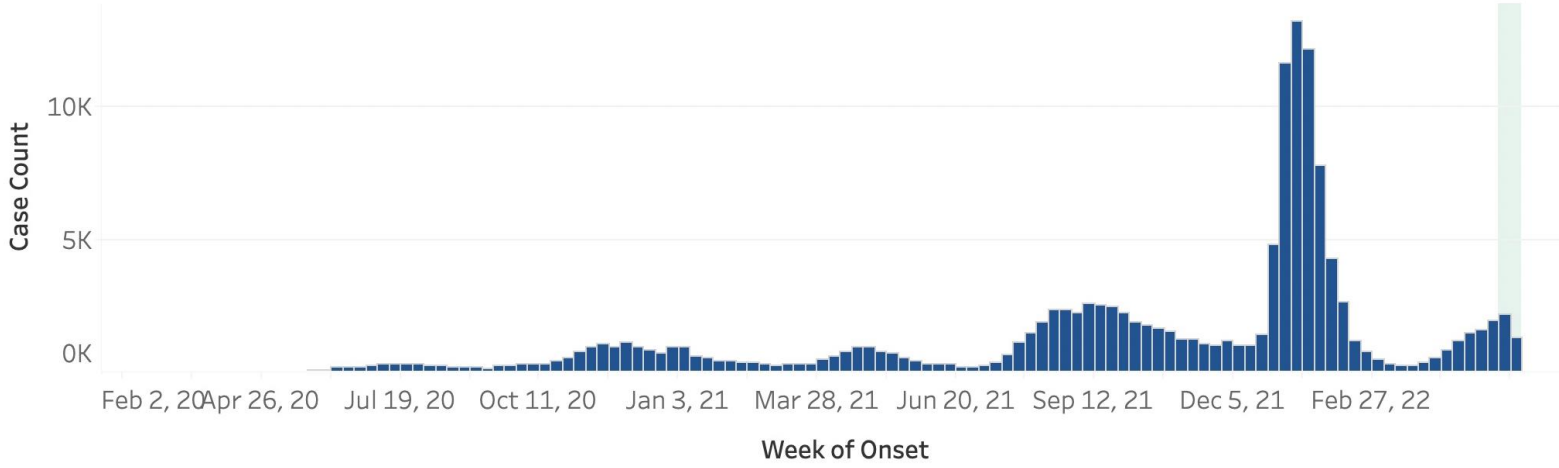
Impact of COVID-19 on children in Oregon

Pediatric COVID-19 case counts peaked dramatically in January 2022 and have been increasing since mid-March

The chart below shows the number of pediatric cases by week of onset. Illnesses that began in the last two weeks may not yet be reported.



Oregon Health Authority, last accessed 6/3/2022

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Severe COVID-19 in children in Oregon

There have been **8** pediatric deaths reported with COVID-19

Multisystem Inflammatory Syndrome in Children (MIS-C)

Cases of a COVID-19-associated "multisystem inflammatory syndrome in children" (MIS-C), which may resemble Kawasaki Disease, have been reported in people under the age of 21. In addition to a positive COVID-19 test, the syndrome includes fever, multisystem involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurologic), and laboratory evidence of inflammation.

69 cases of MIS-C

Oregon Health Authority, last accessed 6/3/2022

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Long COVID in kids

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Definition: Long COVID

Slides courtesy of Dr. Louise Vaz

- Symptoms develop during or after acute COVID-19 illness, continue for ≥12 weeks, and are not explained by an alternative diagnosis
  - Post – acute sequelae of SARS Co-V2 infections (PASC)
  - Post-(acute) COVID-19 condition
  - Long Haulers
  - Chronic COVID
- Described as relapsing-remitting condition
- Span multiple body systems and have significant effects on health and quality of life
- Can affect those who may have only had mild to no COVID-19 illness initially, all the way to having been hospitalized

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“Long COVID”

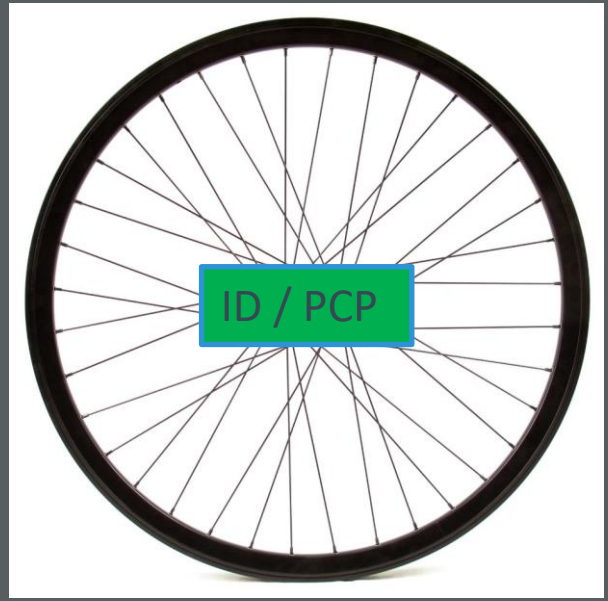
Recently infected individuals (adults and children) can experience ongoing health problems after COVID-19 infection (for months)

- Fatigue
- Shortness of breath
- Cough
- Joint pain
- Chest Pain
- Cognitive dysfunction (“brain fog”)
- Depression
- Headaches
- Intermittent fevers
- Tachycardia (fast heartbeat)

https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Flong-term-effects.html

Doernbecher Long COVID-19 team approach

- Infectious Diseases
- Physical Therapy
- Cardiology
- Pulmonary / Sleep Medicine
- Neurology
- Neuropsychology / Neurorecovery Program
- Nutrition
- Gastroenterology
- Otolaryngology
- Adolescent Medicine
- COVID Hotline RNs
- Primary Care Providers (PCP)



Referrals: Through Pediatric Infectious Diseases or COVID Hotline

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The number of kids being seen in the Pediatric Long COVID program at OHSU

Information courtesy of Dr. Louise Vaz

- 100 referrals to our clinic
  - 60 being seen
  - 38 being actively managed

- At the moment, the Pediatric Long COVID program at OHSU is suspended due to resource limitations
  - We are still following the current patients

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Why vaccinate children against COVID19?

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Reasons for pediatric COVID-19 immunization

1. Children can efficiently transmit SARS-CoV-2
2. AAP reports 1 in 10 cases are in children, and infection is a setup for development of MIS-C and long COVID disease
3. Indirect consequences of COVID-19 in children are devastating: increased mental health visits

https://coronavirus.jhu.edu/vaccines/report/covid-19-vaccines-for-children-aspiring-towards-a-safer-world

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Indirect Impacts of COVID-19 Pandemic on Children

- Worsening of mental or emotional health

- Widening of existing education gaps

- Decreased physical activity and increased body mass index (BMI)

- Decreased healthcare utilization

- Decreased routine immunizations

- Increase in Adverse Childhood Experiences (ACEs)

- Loss of caregivers

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Vaccinate your teens and young kids

- So they don’t get sick if they get COVID-19
  - Can have short and long-term health problems if they get sick from the virus

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Thank You

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