



## PROGRAM SIMPOZION

Conferința de Antibioterapie și Imunodepresie, 19-20 noiembrie 2021

Coordonator științific – Prof. univ. dr. Sorin Rugină; Conf. univ. dr. Irina Magdalena Dumitru

## Cazuri COVID la copii – cu sau fără antibiotic?

Conf dr Mihai CRAIU

Disciplina 2 Pediatrie INSMC "Alessandrescu-Rusescu"

UMF Carol Davila



## Elsevier Public Health Emergency Collection

Clin Microbiol Infect, 2021 Apr; 27(4): 520-531.

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PMCID: PMC7785281 PMID: 33418017

## Antibiotic prescribing in patients with COVID-19: rapid review and meta-analysis

Bradley J. Langford, <sup>1,2,\*</sup> Miranda So, <sup>2,4,5</sup> Sumit Raybandhan, <sup>6</sup> Valene Leung, <sup>1,7</sup> Jean-Paul R. Soucy, <sup>8</sup> Duncan Westwood, <sup>9</sup> Nick Daneman, <sup>1,4,9,10</sup> and Derek R. MacFadden, <sup>11</sup>

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### Associated Data

Supplementary Materials

Abstract Go to. €

### Background

The proportion of patients infected with SARS-CoV-2 that are prescribed antibiotics is uncertain, and may contribute to patient harm and global antibiotic resistance.

### Objective

The aim was to estimate the prevalence and associated factors of antibiotic prescribing in patients with COVID-19.

## Study Eligibility Criteria

We included randomized controlled trials; cohort studies; case series with ≥10 patients; and experimental or observational design that evaluated antibiotic prescribing.

### **Participants**

Antibiotice in COVID-19

The study participants were patients with laboratory-confirmed SARS-CoV-2 infection, across all healthcare settings (hospital and community) and age groups (paediatric and adult).

### Methods

The main outcome of interest was proportion of COVID-19 patients prescribed an antibiotic, stratified by geographical region, severity of illness and age. We pooled proportion data using random effects meta-analysis.

### Results

We screened 7469 studies, from which 154 were included in the final analysis. Antibiotic data were available from 30 623 patients. The prevalence of antibiotic prescribing was 74.6% (95% CI 68.3–80.0%). On univariable meta-regression, antibiotic prescribing was lower in children (prescribing prevalence odds ratio (OR) 0.10, 95% CI 0.03–0.33) compared with adults. Antibiotic prescribing was higher with increasing patient age (OR 1.45 per 10 year increase, 95% CI 1.18–1.77) and higher with increasing

proportion of patients requiring mechanical ventuation (OR 1.33 per 10% increase, 93% CI 1.13–1.34). Estimated bacterial co-infection was 8.6% (95% CI 4.7–15.2%) from 31 studies.

### Conclusions

Three-quarters of patients with COVID-19 receive antibiotics, prescribing is significantly higher than the estimated prevalence of bacterial co-infection. Unnecessary antibiotic use is likely to be high in patients with COVID-19.







## INFORMING PRACTICE

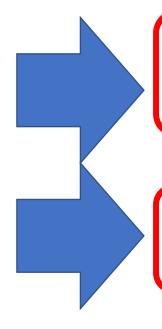
November 4, 2021

Bacterial Superinfection Is Found in a Minority of Patients Admitted with COVID-19 Respiratory Failure

Patricia Kritek, MD, reviewing Pickens CO et al. Am J Respir Crit Care Med 2021 Oct 15

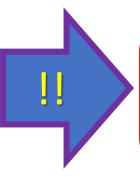
More frequent use of bronchoalveolar lavage might minimize empirical broad-spectrum antibiotic coverage for patients with COVID-19.

When patients with COVID-19 are admitted to the intensive care unit, guidelines recommend empirical coverage for bacterial superinfection with community-associated pathogens. Broad-spectrum antibiotics also are given commonly when concern is raised for ventilator-associated pneumonia (VAP), often without sampling of lower airspaces to minimize risk to clinicians.



Chicago hospital performed bronchoalveolar lavage (BAL) on all 179 patients admitted with respiratory failure due to COVID-19 during a 4-month period; three quarters of patients had initial BAL within 48 hours of admission. Additional BAL was performed in COVID-19 patients when clinical concern for VAP was present. Fluid was sent for both quantitative culture and multiplex polymerase chain reaction (PCR) testing.

After initial BAL, bacteria were detected in 21% of patients. Only three patients had resistant organisms (i.e., methicillin-resistant Staphylococcus aureus or Stenotrophomonas maltophilia); all three patients had received antibiotics previously. Other clinical criteria did not reliably predict bacterial infection. Mortality was not statistically different between patients with early bacterial superinfection and other patients. Almost all patients had BALs to assess for VAP at some point; half of these were unrevealing. Only seven VAPs were diagnosed with PCR alone (i.e., negative culture), and fewer than one third were caused by resistant organisms.



## COMMENT

Most patients admitted with respiratory failure due to COVID-19 do not need empirical bacterial coverage. However, determining which patients do need such coverage is difficult. Although routine bactor air admitted COVID-19 patients is not standard practice (and I don't think should be), these results suggest that more-aggressive lower airway sampling can be inficial, particularly to avoid unnecessary antibiotic use.

Va fi o prezentare despre noul coronavirus si copii.

 Scopul prezentării este acela de a trece in revistă particularitățile infecției SARS-CoV-2 in populații pediatrice, de diverse vârste.

• Obiectivul prezentării este acela de a va convinge că nu pot fi extrapolate toate strategiile utilizate la adult, in abordarea comunităților de copii.

Mesajul de luat acasă – "Copilul nu este un adult in miniatură"

## In Romania



Conform unui studiu de piata al GfK publicat in 2017 in Romania 74% din persoanele confruntate cu o problema de sanatate apeleaza INAINTE de a merge la medic la Social Media si la cautarea on-line pe Google.

## Retete "minune"



VIDEO Adina Alberts a publicat rețeta cu schema clasică de tratament pentru COVID-19

de Iulia Gorgorin | 10 Noi 2020 • 09:30











Medicul Adina Alberts a decis să facă publică rețeta cu schema clasică de tratament în cazul infectării cu SARS-Cov2. Adina Alberts spune că majoritatea a medicilor de familie sunt de acord cu această schemă de tratament.



Dragi colegi, medici de familie!

Mă adresez dvs în mod special acum, pentru că pe umerii dvs va cădea, în curând, greul acestei pandemii!

Trebuie să gestionați prin telefon mii de situații medicale. Trebuie să oferiți explicații, să dați rețete, să acordați atenție și grijă tuturor celor care din nefericire se vor infecta cu SARS-Cov2. Si nu vor fi puțini!

Este multă muncă. Trebuie să aveți disponibilitate pentru a spune mereu "prezent". "Linia întăi" se muta încet, încet către dvs, în cabinetele și pe telefoanele/ laptopurile dvs.

Fac un apel la toleranță și înțelegere.

Ca de obicei, EU ÎNCERC SĂ AJUT!

De aceea voi posta mai jos, schema clasică de tratament în cazul în care cetățenii au nesansa de a fi testăți pozitiv la SARS-Cov2.

→ Subliniez, aceste medicamente trebuie luate la indicaţia medicului dvs.

Marea majoritate a medicilor de familie sunt de acord cu această schemă de

tratament.

\*\*Tratament\*\*

\*\*T

- 1. Azitromicina cp de 500 mg, 1cp/zi, 5-7 zile.
- 2. Paracetamol cp de 500 mg, 1cp la 8 ore, în caz de febră sau dureri, 14 zile.
- 3. Aspenter, cp de 75 mg, 1 cp pe zi, 14 zile.
- 4. Medrol cp 4 mg, 1 cp /zi timp de 2 zile, apoi 2 cp/zi încă 2 zile, apoi câte 3 cp/zi până la 10 zile, la ora 10 dimineața.
- Protecție gastrică. Sunt multe variante. De exemplu: Omeran cp 20 mg, 1 cp la 12 ore, 14 zile.
- Probiotice. Sunt multe variante. De exemplu: Linex forte cp 60 mg, 1-2 cp pe zi, 14 zile.
- Antitusive. Sunt multe variante. De exemplu: BronhoKlir, 5 ml de 3 ori/zi, cât persistă tusea.
- 8. Septosol cu albastru de metilen pentru igiena orofaringiană, 1-3 cp/zi, 14 zile
- 9. Vitamine C 2 g/zi, 14 zile
- 10. Vitamina D 1000 UI/ zi, 14 zile.
- 11. Zinc cp 25 mg. 2 cp/zi. 14 zile.



## Unde suntem?

## Covid 'infodemic': Contested truths are a reality we must deal with

A general suspicion of all kinds of expertise has played out across a range of issues

① Tue, Jun 22, 2021, 01:00

Nuala O'Connor

18

186

illi LISTEN NOW 5:53



Anti-vaccine protest outside the Four Courts in Dublin on Monday. Distrust of medical and public health experts has deep roots and predates Covid. Photograph: Collins Courts



€ Back to Announcements Index

The Journal of Medical Internet Research welcomes submissions to a special theme issue examining the intersection of social media, ethics, and COVID-16 missiformation.

This call for papers is released ahead of the virtual consensus conference, "BEDDEMIL: A Blanton Conference on Social Media and COVID-19 Misonformation", scheduled for August 26, 2021. Participants and attendees are encouraged to submit research papers relevant to the conference proceedings. This call for papers is open to the public, including authors not affiliated with the meeting.

### FACT CHECK

TikTok says anti-vaccine misinformation video from conspiracy theorist 'doesn't violate guidelines'

BMIT ABC Fact Check Posted Bh ago, updated 4h ago



## Copilul nu este un adult in miniatură!



## Diferente adult/copil

	Children	Adults
Asymptomatic or mild illness	More likely	Less likely
Main presentation symptoms (e.g., fever, cough, shortness of breath)	Similar	Similar
Upper respiratory tract involvement	Predominantly	Present
Lower respiratory tract involvement	Less common	Frequent
Wheezing	Infrequent	Infrequent
ARDS	Infrequent (mainly < 1 year old)	Possible (mainly > 65 years old)
Rate of co-infection with other respiratory viruses	Higher	Lower
Chest radiographic changes	Generally less pronounced	Pronounced in most case
Neurological disorders and coagulopathy	Unknown prevalence	Present
Increased inflammation markers in severe cases	Yes	Yes
Severe Systemic Inflammatory Response Syndrome	Yes, as MIS-C	Yes, as Cytokine Storm
Mortality	Lower	Higher

## PIMS/MIS-C

### 2. Definition of MIS-C

On 13 May, the Centers for Disease Control (CDC) issued a health advisory establishing the following definition for a reportable case of MIS-C (see **Box 1** and **Figure 1** for details) [5]:

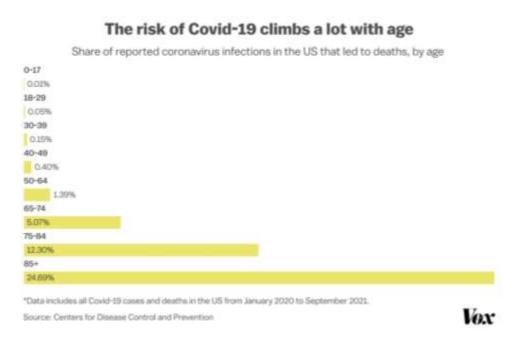
Box 1. CDC case definition for multisystem inflammatory syndrome in children (MIS-C).

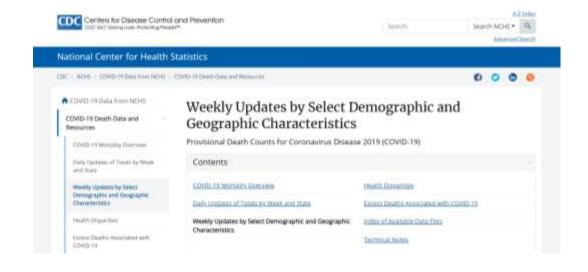


- (1) An individual aged < 21 years with:
- (2) Clinical criteria:
  - A minimum 24-h history of subjective or objective fever ≥ 38.0 °C AND
  - Severe illness necessitating hospitalization AND
  - Two or more organ systems affected (i.e., cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic, neurological)
- (3) Laboratory evidence of inflammation
  - One or more of the following: an elevated CRP, ESR, fibrinogen, procalcitonin, D-dimer, ferritin, LDH, or IL-6; elevated neutrophils or reduced lymphocytes; low albumin
- (4) Laboratory or epidemiologic evidence of SARS-CoV-2 infection
  - Positive SARS-CoV-2 testing by RT-PCR, serology, or antigen OR
  - COVID-19 exposure within 4 weeks prior to onset of symptoms
- (5) No alternative diagnosis

Abbreviations: CDC, Centers for Disease Control; CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; LDH, lactate dehydrogenase; RT-PCR, reverse transcriptase polymerase chain reaction; SARS-CoV-2, severe acute respiratory syndrome coronavirus-2.

## Cum evolueaza COVID-19 la copil?





Infectia cu SARS-CoV-2 la copil produce rareori forme semnificative de boala si DOAR 2% din copili infectati ajung spitalizati – American Academy of Pediatrics\* Children and COVID-19: State-Level Data Report (aap.org)

## Cum evolueaza COVID-19 la copil?



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## Children and COVID-19: State-Level Data Report

Home / Critical Updates on COVID-19 / Children and COVID-19: State-Level Data Report











State-level reports are the best publicly available and timely data on child COVID-19 cases in the United States. The American Academy of Pediatrics and the Children's Hospital Association are collaborating to collect and share all publicly available data from states on child COVID-19 cases. The definition of "child" case is based on varying age ranges reported across states (see report Appendix for details and links to all data sources).

As of November 4, over 6.5 million children have tested positive for COVID-19 since the onset of the pandemic. This week over 107,000 child cases were added, a slight increase over the prior week. Child cases have declined since a peak of 252,000 the week of September 2nd, but COVID cases among children remain extremely high. For the 13th week in a row child COVID-19 cases are above 100,000. Since the first week of September, there have been almost 1.5 million additional child cases.

## Sunt toti copiii la fel??

### PLOS ONE

Prevalence of COVID-19 in adolescents and youth compared with older adults in states experiencing surges

Barbara Rumain 1,34, Moshe Schneiderman3, Allan Geliebter4

- 1 Department of Pediatrics, New York Medical College, Valhalla, New York, United States of America,
- 2 Department of Psychology, Touro College & University System, New York, New York, United States of America, 3 SUNY Downstate College of Medicine, Brooklyn, New York, United States of America.
- 4 Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York, New York, United States of
- \* barbara namen Brown adu



### OPEN ACCESS

Citation: Flumain R. Schneiderman M. Geliebter A. (2021) Prevalence of COVID-19 in adolescents and yearth compared with citizer adults in states. reperiencing surges. PLoS ONE 16(3): x0242587. https://doi.org/10.1371/jpurnal.ponx.0242587

Editor: Dong-Yon Jin, University of Hong Kong. HONG KONG

Reguland: November 16, 2020

Assepted: February 15, 2021

Published: March 10, 2021

### Abstract

### Purpose

There has been considerable controversy regarding susceptibility of adolescents (10-19: years) and youth (15-24 years) to COVID-19. However, a number of studies have reported that adolescents are significantly less susceptible than older adults. Summer 2020 provided an opportunity to examine data on prevalence since after months of lockdowns, with the easing of restrictions, people were mingling, leading to surges in cases.

We examined data from Departments of Health websites in six U.S. states experiencing surges in cases to determine prevalence of COVID-19, and two prevalence-related measures, in adolescents and youth as compared to older adults. The two other measures related to prevalence were: (Percentage of cases observed in a given age group) + (percentage of cases expected based on population demographics); and percentage deviation, or [(% observed--% expected)/ % expected) x 100.

ournal List > Exp. Biol Med (Maywood) > v.245(3), 2021 Feb + PMC7659671



Exp Biol Med (Maywood), 2021 Feb; 246(3): 293-297

Published online 2020 Nov 19. doi: 10.1177/1535370220975118

PMCID: PMC7859671 PMID: 33210552

## A mini-review on the effects of COVID-19 on younger individuals

Machumitha Manivannan.1." Manasi P Joqelekar.2." Muthu Subash Kavitha.3 Balu Alagar Venmathi Maran.4 and Prakash Gengadaran 5.6

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Abstract Go to: 🖂

Coronavirus disease 2019 (COVID-19) pandemic has uprooted our lives like never before since its onset in the late December 2019. The world has seen mounting infections and deaths over the past few months despite the unprecedented measures countries are implementing, such as lockdowns, social distancing, mask-wearing, and banning gatherings in large groups. Interestingly, young individuals seem less likely to be impacted by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for COVID-19. While the rate of transmission, symptom presentation, and fatality is lower in children than people from other age groups, they have been disproportionately affected by strict lockdown measures needed to curb viral spread. In this review, we describe the association between patient age and COVID-19. epidemiology of SARS-CoV-2 infection in children, psychological effects associated with lockdowns and school closures, and possible mechanisms underlying lower transmission rate of COVID-19 in children.

Keywords: COVID-19, younger individuals, SARS-CoV-2, immune system, psychology, education

Methods

## Pana la Delta copiii nu erau o problema...

Meta-Analysis > Clin Infect Dis. 2021 Jun 15;72(12):e1146-e1153. doi: 10.1093/cid/ciaa1825.

## A Meta-analysis on the Role of Children in Severe Acute Respiratory Syndrome Coronavirus 2 in Household Transmission Clusters

```
Yanshan Zhu <sup>1</sup>, Conor J Bloxham <sup>2</sup>, Katina D Hulme <sup>1</sup>, Jane E Sinclair <sup>1</sup>, Zhen Wei Marcus Tong <sup>1</sup>, Lauren E Steele <sup>1</sup>, Ellesandra C Noye <sup>1</sup>, Jiahai Lu <sup>3</sup>, Yao Xia <sup>4</sup>, Keng Yih Chew <sup>1</sup>, Janessa Pickering <sup>5</sup>, Charles Gilks <sup>6</sup> <sup>7</sup>, Asha C Bowen <sup>5</sup> <sup>8</sup>, Kirsty R Short <sup>1</sup> <sup>2</sup>.

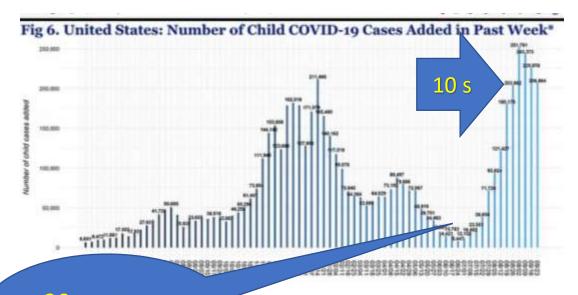
Affiliations + expand
PMID: 33283240 PMCID: PMC7799195 DOI: 10.1093/cid/ciaa1825
Free PMC article
```

### Abstract

The role of children in the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) remains highly controversial. To address this issue, we performed a meta-analysis of the published literature on household SARS-CoV-2 transmission clusters (n = 213 from 12 countries). Only 8 (3.8%) transmission clusters were identified as having a pediatric index case. Asymptomatic index cases were associated with a lower secondary attack in contacts than symptomatic index cases (estimate risk ratio [RR], 0.17; 95% confidence interval [CI], 0.09-0.29). To determine the susceptibility of children to household infections the secondary attack rate in pediatric household contacts was assessed. The secondary attack rate in pediatric household contacts was lower than in adult household contacts (RR, 0.62; 95% CI, 0.42-0.91). These data have important implications for the ongoing management of the COVID-19 pandemic, including potential vaccine prioritization strategies.

Keywords: COVID-19; SARS-CoV-2; children; household; transmission.

## Valul 4 in SUA (unde a inceput scoala in august)



x30 crestere a nr de cazuri

## Summary of Findings (data available as of 9/30/21):

## Cumulative Number of Child COVID-19 Cases\*

- 5,899,148 total child COVID-19 cases reported, and children represented 16.2%
   (5,899,148/36,501,460) of all cases
- · Overall rate: 7,838 cases per 100,000 children in the population

## Change in Child COVID-19 Cases\*

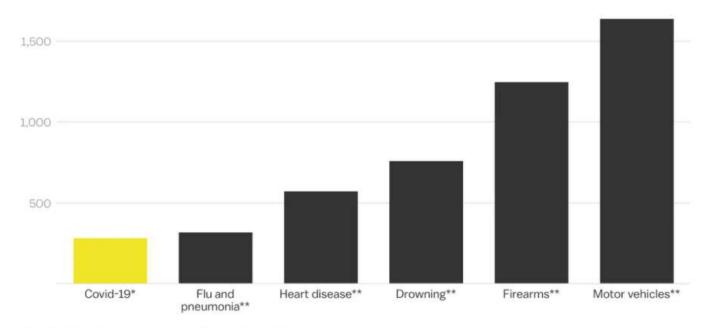
- 173,469 child COVID-19 cases were reported the past week from 9/23/21-9/30/21 (5,725,680 to 5,899,148) and children represented 26.7% (173,469/648,881) of the weekly reported cases
- Over two weeks, 9/16/21-9/30/21, there was an 7% increase in the cumulated number of child COVID-19 cases since the beginning of the pandemic (380,333 cases added (5,518,815 to 5,899,148))

Children and COVID-19: State-Level Data Report (aap.org)

## Risc relativ de deces al COVID-19 la copil

## Childhood deaths in the US from Covid-19 and other causes

Average annual deaths of children under 18 in recent years, from January through September



\*Covid-19 deaths: January through September 2021



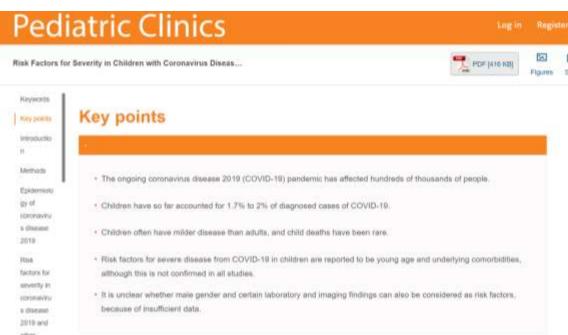
<sup>\*\*</sup>Other deaths: Annual average from January through September across 2015 to 2019 (latest available data)

## Factori de risc la copil

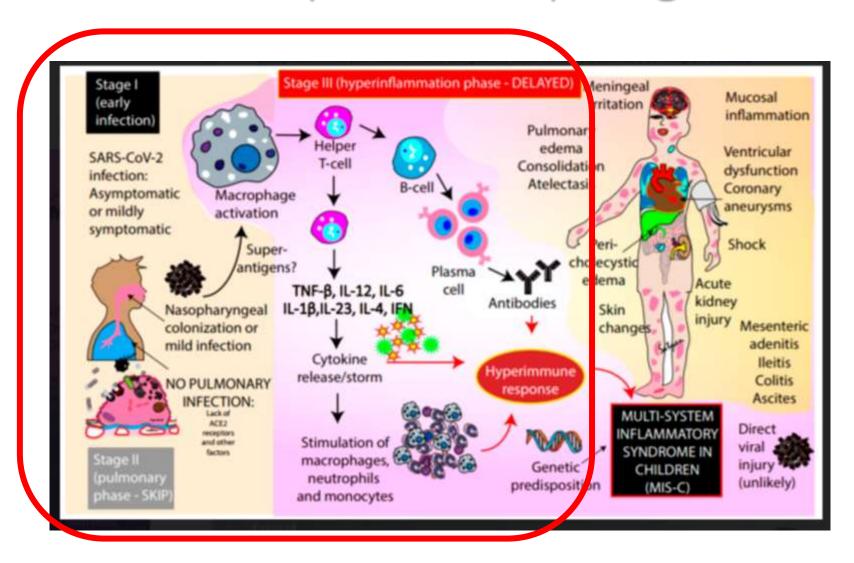


Specifically, the proportions of severe and critical cases by age group were 10.6% for <1 years, 7.3% for 1−5 years, 4.2% for 6−10 years, 4.1% for 11−15 years, and 3.0% for ≥16 years \*

<sup>\*</sup> Dong Y., Mo X., Hu Y., Qi X., Jiang F., Jiang Z., Tong S. Epidemiological Characteristics of 2143 Pediatric Patients With 2019 Coronavirus Disease in China. *Pediatrics* 2020 doi: 10.1542/peds.2020-0702.



## Cum evolueaza procesele patogenice la copil?



## Ordin al Ministrului Sanatatii 13 Oct 2021



1/16

## MONITORUL OFICIAL

## ROMÂNIEI

Anul 189 (XXXIII) - Nr. 978

PARTEA I LEGI, DECRETE, HOTARARI ȘI ALTE ACTE

Miercuri, 13 octombrie 2021

### SUMAR

ACTE ALE ORGANELOR DE SPECIALITATE
ALE ADMINISTRATIEI PUBLICE CENTRALE

2.103. — Ordin al ministrului sănătății, interimar, privind
modificarea anexei la Ordinul ministrului sănătății
nr. 487/2020 pentru aprobarea protocolului de
tratament al infecției cu virusul SARS-CoV-2 2-15

ACTE ALE COLEGIULUI MEDICILOR
DIN ROMÂNIA

11. — Decizie pentru stabilirea procedurii de consultare și
efectuare a fotocopiilor din dosarele disciplinare affatte
pe rolul și în arhiva Comisiei de jurisdicție a Consiliului
național al Colegiului Medicilor din România și a
Comisiei superioare de disciplină a Colegiului Medicilor

din România

## A.2. Recomandări pentru cazurile pediatrice

- Infecția cu SARS-CoV-2 este, în general, mai ușoară la copii decât la adulți și o proporție substanțială a copiilor prezintă infecție asimptomatică.
- 2. Există date limitate privind patogeneza, tabloul clinic şi terapia bolii COVID-19 la copii. În absența unor date adecvate privind tratamentul copiilor cu COVID-19 acut, recomandările se bazează pe rezultatele şi datele de siguranță pentru pacienții adulți şi riscul copilului de progresie a bolii.
  - 3. Forme de severitate ale infecției cu SARS-CoV-2 la copil:
- forma ușoară: simptome generale și/sau de tract respirator superior, fără manifestări evocatoare de pneumonie, fără afectare pulmonară;

- forma medie: pacienti cu pneumonie confirmată imagistic, dar fără hipoxemie (dacă nu există afectare respiratorie anterioară bolii actuale);
- forma severă: detresa respiratorie cu SaO<sub>2</sub> sub 94% în aerul atmosferic si anomalii imagistice de afectare pulmonară;
- forma critică: pacienti care prezintă insuficientă respiratorie severă cu necesar de suport ventilator, soc septic şırsau distuticile multipla de organe.
- 4. Conform datelor actuale din literatură, copiii care prezintă în antecedente afecțiuni cronice (patologie neurologică, sindroame genetice — inclusiv trisomia 21, obezitate, boli cardiopulmonare cronice), imunocompromisi, precum si adolescenții mai mari (vârsta peste 16 ani) pot fi considerați cu risc crescut de boală severă.
  - Terapie specifică
- a) Majoritatea copiilor cu infectie cu SARS-CoV-2 nu vor necesita terapie specifică.
- b) Utilizarea corticoterapiei se recomandă în special pentru copiii spitalizati cu COVID-19 care necesită oxigenoterapie.
  - c) Remdesivir este recomandat pentru:
- copii cu vârsta ≥ 12 ani cu COVID-19 spitalizati care au factori de risc pentru boli severe si necesită oxigenoterapie;
- copii cu vârsta ≥ 16 ani cu COVID-19 spitalizati care necesită oxigenoterapie, indiferent de prezenta factorilor de risc pentru boala severă.

Remdesivirul poate fi luat în considerare pentru copiii cu COVID-19 spitalizati, indiferent de vârstă, dar cu greutate peste 3,5 kg, în situațiile în care necesită oxigenoterapie și la recomandarea medicului specialist de boli infectioase.

- d) Tratamentul anticoagulant profilactic sau curativ este rezervat formelor severe sau critice si va fi luat în considerare la recomandarea medicului specialist boli infectioase sau ATI.
- e) Nu există dovezi suficiente pentru sau împotriva utilizării produselor de anticorpi monoclonali anti-SARS-CoV-2 pentru copiii cu COVID-19 care nu sunt spitalizati, dar care au factori de risc pentru boli severe. Pe baza studiilor la adulti, bamlanivimab plus etesevimab sau casirivimab plus imdevimab pot fi luate în considerare de la caz la caz pentru copiii spitalizati cu vârsta peste 12 ani și care prezintă risc crescut pentru forma severă de boală. Se recomandă consultarea unui specialist în boli infectioase în astfel de cazuri.

adulti si riscul copilului de progresie a bolii.

- 3. Forme de severitate ale infecției cu SARS-CoV-2 la copil:
- forma usoară: simptome generale si/sau de tract respirator superior, fără manifestări evocatoare de pneumonie, fără afectare pulmonară;

### A.3. Strategie terapeutică în funcție de forma de boală pentru cazurile pediatrice

- 1. Forma usoară:
- simptomatice:
- antiinflamator nesteroidian:

### MONITORUL OFICIAL AL ROMÂNIEI, PARTEA I, Nr. 978/13.X.2021

- +/- antibioticoterapie (când există semne de asociere a Durata tratamentului antiviral este una orientativă, în raport cu unei infecții bacteriene).
  - 2. Forma medie (fără oxigenoterapie):
  - simptomatice:
- antiinflamator nesteroidian sau corticoterapie (la latitudinea medicului curant);
- antibioticoterapie (se vor folosi antibioticele indicate în pneumonia comunitară).
  - o, i onna severa (cu necesar de oxigenoterapie).
  - simptomatice:
  - antibioticoterapie adaptată;
- corticoterapie iv (dexametazonă 0,15 mg/kgc/zi maximum 6 mg/zi, metilprednisolon — 0,8 mg/kg/zi maximum 32 mg/zi, hidrocortizon);
- anticoagulant în doză profilactică (enoxaparina) în functie de factorii de risc (clinici si biologici) pentru tromboza venoasă;
- antiviral (remdesivir) la recomandarea medicului specialist de boli infectioase;
- +/- imunomodulator (tocilizumab) la recomandarea medicului specialist de boli infectioase.
- 4. Forma critică (cu necesar de suport ventilator) pentru cazurile internate în sectiile ATI:
  - simptomatice:
  - antibioticoterapie adaptată;
  - corticoterapie iv (dexametazonă, metilprednisolon);
  - anticoagulant în doza curativă (enoxaparină);
- antiviral (remdesivir) cu eventuala recomandare a medicului specialist de boli infectioase;
- imunomodulator (tocilizumab) cu eventuala recomandare a medicului specialist de boli infecțioase;
  - tratamentul socului și al disfuncțiilor de organ.

evoluția pacientului, inclusiv apariția de efecte adverse severe.

Rezultatele studiilor efectuate sunt influentate atât de eficienta produselor testate, cât si de eterogenitatea loturilor de pacienți în privința momentului infecției cu SARS-CoV-2 în care au fost tratati.

Persoanele cu infectie asimptomatică cu SARS-CoV-2 nu primesc tratament deoarece nu s-a demonstrat că ar reduce durata excreției virusului și nici nu ar preveni evoluția către forme severe de boală.

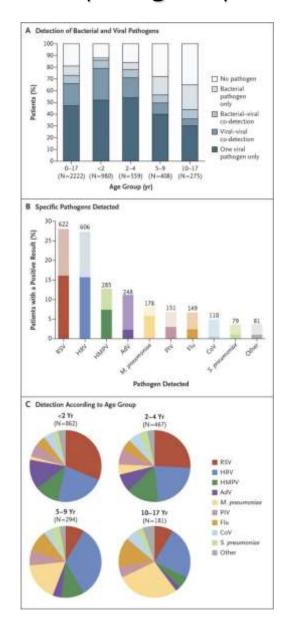
Medicamentele cu actiune antivirală potential active împotriva SARS-CoV-2 sunt:

### B.1.a. Remdesivir

Remdesivir este un antiviral potential util pentru tratamentul COVID-19, care inhibă ARN polimeraza ARN dependentă, blocând prematur transcripția ARN. Are activitate in vitro împotriva coronavirusurilor, inclusiv împotriva SARS-CoV-2.

Datele obținute în studii clinice în tratamentul COVID-19 au fost contradictorii; includerea unor procente diferite de pacienti aflati în diferite faze evolutive ale COVID-19 poate fi una dintre explicatiile majore ale acestor diferente. Un prim studiu randomizat, controlat, dublu orb (RCT), derulat în China, a fost întrerupt prematur din cauza lipsei de eficientă și a unei rate sporite de efecte adverse: 12% fată de 5% placebo. Datele unui alt RCT, comunicate de Beigel JH și colaboratorii, au arătat o reducere a duratei medii a simptomatologiei de la 15 zile la 10 zile si a riscului de deces după 29 de zile de la 15,2% la 11,4% la pacientii tratati cu remdesivir. Datele studiului SOLIDARITY nu evidențiază o reducere semnificativă a letalității si a duratei de spitalizare, dar rezultatele au fost mai bune la pacienții la care s-a administrat mai devreme în cursul bolii, când aveau un necesar redus de oxigen.

## Pathogens Detected in U.S. Children with Community-Acquired Pneumonia Requiring Hospitalization.





## Concluzia EPIC

- Diagnostic testing for multiple pathogens revealed a pathogen in 81% of the children with pneumonia
  - a viral pathogen was detected in 73% of the children
  - a bacterial pathogen in 15%

Multiple pathogens were detected in 26% of the children

## COVID-19 la copii – cu sau fără antibiotic?



ANNALS OF TRANSLATIONAL MEDICINE

Ann Transi Med. 2020 May; 8(10): 619. doi: 10.21037/atm-20-3300 PMCID: PMC7290645 PMID: 32566556

Go to: €

## Efficacy and safety of antibiotic agents in children with COVID-19: a rapid review

Jianijan Wang. 1.2.# Yuyi Tang. 3.4.5.# Yantang Ma. 2.# Qi Zhou. 2.6 Weigup Li. 3.4.5 Muna Baskota. 3.4.5
Yinmei Yang. 3.4.5 Xingmei Wang. 3.4.5 Qingyuan Li. 3.4.5 Xufei Luo. 1.2 Toshio Fukuoka. 7.8 Hyeong Sik Ahn. 9.10
Myeong Sop Lee. 11.12 Zhengxiu Luo. 3.4.5 Enmei Liu. 113.4.5 Yaolong Chen. 111.2.13.14.15 and on behalf of COVID-19
Evidence and Recommendations Working Group

Author information • Article notes • Copyright and License information <u>Disclaimer</u>

This article has been cited by other articles in PMC.

Abstract

### Background

The aim of this review was to evaluate the efficacy and safety of antibiotic agents in children with COVID-19, as well as to introduce the present situation of antibiotics use and bacterial coinfections in COVID-19 patients.

### Methods

We searched Cochrane library, Medline, Embase, Web of Science, CBM, Wanfang Data and CNKI from their inception to March 31, 2020. In addition, we searched related studies on COVID-19 published before March 31, 2020 through Google Scholar. We evaluated the risk of bias of included studies, and synthesized the results using a qualitative synthesis.

### Results

Six studies met our inclusion criteria. Five studies on SARS showed an overall risk of death of 7.2% to 20.0%. One study of SARS patients who used macrolides, quinolones or beta lactamases showed that the mean duration of hospital stay was 14.2, 13.8 and 16.2 days, respectively, and their average duration of fever was 14.3, 14.0 and 16.2 days, respectively. One cohort study on MERS indicated that macrolide therapy was not associated with a significant reduction in 90-day mortality (adjusted OR 0.84, 95% CI: 0.47–1.51, P=0.56) and improvement in MERS-CoV RNA clearance (adjusted HR 0.88, 95% CI: 0.47–1.64, P=0.68). According to the findings of 33 studies, the proportion of antibiotics use ranged from 19.4% to 100.0% in children and 13.2% to 100.0% in adults, despite the lack of etiological evidence. The most commonly used antibiotics in adults were quinolones, cephalosporins and macrolides and in children meropenem and linezolid.

### Conclusions

The benefits of antibiotic agents for adults with SARS or MERS were questionable in the absence of bacterial coinfections. There is no evidence to support the use of antibiotic agents for children with COVID-19 in the absence of bacterial coinfection.

## COVID-19 la copii – cu sau fără antibiotic?

### Wiley Public Health Emergency Collection

Public Health Emergency COVID-19 Initiative

Acta Paediatr. 2021 Jun; 110(6): 1902-1910.

Published online 2021 Mar 26. doi: 10.1111/apa.15847

PMCID: PMC8251202

PMID: 33742466

High rates of antibiotic prescriptions in children with COVID-19 or multisystem inflammatory syndrome: A multinational experience in 990 cases from Latin America

Adriana Yock-Corrales. 1 Jacopo Lenzi. 2 Rolando Ulloa-Gutiérrez. 3 Jessica Górnez-Varoas. 1 Omar Yassef Antúnez-Montes. 4 Jorge Alberto Rios Aida. 5 Oloutla del Aquila. 6 Enok Arteaga Menchaca. 7 Francisco Campos. <sup>6</sup> Fadia Uribe. <sup>6</sup> Andrea Parra Bultrago. <sup>9</sup> . <sup>10</sup> Lina Maria Betancur Londoño. <sup>9</sup> Martin Brizuela. 11 and Danilo Buonsenso 12 13 14

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### Associated Data

Data Availability Statement.

### Abstract

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This study aims to assess rates of antibiotic prescriptions and its determinants in in children with COVID-19 or Multisystem Inflammatory Syndrome (MIS-C).

### Results

A total of 990 children were included: 921 (93%) with COVID-19, 69 (7.0%) with MIS-C. The prevalence of antibiotic use was 24.5% (n = 243), MIS-C with (OR = 45.48) or without (OR = 10.35) cardiac involvement, provision of intensive care (OR = 9.60), need for hospital care (OR = 6.87), pneumonia and/or ARDS detected through chest X-rays (OR = 4.40), administration of systemic corticosteroids (OR = 4.39), oxygen support, mechanical ventilation or CPAP (OR = 2.21), pyrexia (OR = 1.84), and female sex (OR = 1.50) were independently associated with increased use of antibiotics. There was significant variation in antibiotic use across the hospitals.

### Conclusion

Our study showed a high rate of antibiotic prescriptions in children with COVID-19, in particular in those with severe disease or MIS-C. Prospective studies are needed to provide better evidence on the recognition and management of bacterial infections in COVID-19 children.

Keywords: COVID-19, SARS-COV-2, antibiotics, stewardship

### Abbreviations

MIS-C multisystem inflammatory syndrome

NICU neonatal intensive care unit

PICU pediatric intensive care unit

RT-PCR real time polymerase chain reaction

CDC centers for disease and control

### Key Notes

- . To date, there are no comprehensive data on antibiotic use in children with COVID-19 and Multisystem Inflammatory Syndrome.
- . Our study showed a high rate of antibiotic prescriptions in children with COVID-19 and in particular in those with severe disease or Multisystem Inflammatory Syndrome
- · High antibiotic prescriptions may fuel antibiotic resistance, better local guidelines are needed to ensure that antibiotics are prescribed to those with higher risk of bacterial co-infections

## COVID-19 la copii – cu sau fără antibiotic?

Acta Paediatr. 2021 Sep; 110(9): 2648–2649. Published online 2021 Jun 21. doi: 10.1111/apa.15980 PMCID: PMC8444676 PMID: 34115903

Comment on 'High rates of antibiotic prescriptions in children with COVID-19 or multisystem inflammatory syndrome: A multinational experience in 990 cases from Latin America

Paediatric Research Across the Midlands (PRAM) Network

Article notes - Copyright and License information <u>Disclaimer</u>

This article has been cited by other articles in PMC.

### **Associated Data**

Supplementary Materials

### CONFLICT OF INTEREST

Go to: 💟

The authors declare that there is no conflict of interest.

We read the article 'High rates of antibiotic prescriptions in children with COVID-19 or multisystem inflammatory syndrome: A multinational experience in 990 cases from Latin America' by Yock-Corrales A. et al. published in Acta Paediatrica in March 2021 with interest. We would like to congratulate the authors and make some contributions based on our regional observational study from the UK on this highlighted concern.

Yock-Corrales A. et al. report on the antibiotic prescriptions and its determinants in children with COVID-19 or MIS-C in five Latin American countries. Antibiotic prescription prevalence was reported to be 24.5%. A high rate of antibiotic prescriptions was observed in children with MIS-C, on respiratory support, radiological evidence of pneumonia and fever. It raises a real emerging concern of antibiotic resistance as an effect of this pandemic. We report a similar observation made in the West Midlands, UK. in hospitalised children, reviewing the regional practice of management of children with suspected/confirmed COVID-19 and PIMS-TS (MIS-C).2 Children (≤16 years old) admitted to paediatric wards with suspected COVID-19 infection between 1 March and 31 July 2020 from nine district general hospitals were included. During this first wave, the suspicion levels for COVID-19 were high; however, timely screening and turnover time of RT-PCR swab were evolving. Hence, diagnoses were predominantly based on clinical suspicion and contact history. 'Suspected COVID-19' was defined as those admitted with fever and symptoms associated with upper and/or lower respiratory tract symptoms or gastrointestinal senior clinician. Among the 607 children included, 447 (74%) were <5 years old. COVID-19 swabs were taken in 566 (93%), and 45 (7.4%) were positive. 115 (19%) had a discharge diagnosis of suspected COVID-19. Eight (1.3%) had PIMS-TS, 273 (45%) children had blood cultures taken and 255 (93%) were negative, 197 (32%) had reported chest radiograph abnormalities out of 397 performed, 390 (64%) children received antibiotics, a higher rate in comparison with the study published (24.5%), 186 (31%) received broad-spectrum antibiotics. There was no difference in antibiotic use between suspected (62%) and confirmed COVID (64%) cases (p-value-0.768). However, as reported by Yock-Corrales A. et al, antibiotic use was significantly higher in PIMS-TS cases (84%, p-value -0.011).

This observed high antibiotic use in a UK cohort, in particular broad-spectrum antibiotics, in the presence of low culture positivity and PIMS-TS is alarming. However, this study was conducted in the first wave, when there was an uncertainty on the impact of novel coronavirus on children and the challenges in distinguishing PIMS-TS and sepsis persisted. Our knowledge has since exponentially heightened, and it is evident that the majority of children infected with COVID-19 have mild or few symptoms. From the reported evidence, the rates of bacterial and fungal co-infections are low in the early phase of COVID-19.3 With the ongoing pandemic worldwide and the concern of a third wave, it is important that this awareness is disseminated and antibiotic stewardship strategies are incorporated in the management of children with COVID-19.

## Ce este la copil altfel in infectia cu SARS-CoV-2?

## Kids and COVID: why young immune systems are still on top

Innate immunity might be the key to why children have fared better with the virus. But the Delta variant poses fresh unknowns.

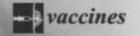
Smits Mallapaty













Vaccines (Basel), 2021 Sep. 9(9): 1002.

Published online 2021 Sep 8. doi: 10.3390/vaccines9091002

PMCID: PMC8473426

PMID: 34579240

### Pediatric COVID-19: Immunopathogenesis, Transmission and Prevention

Geraldine Blanchard-Rohner, 1.2.3.\* Arnaud Didiedaurent, 2 Anne Tilmanne, 4 Pierre Smeesters, 4 and Arnaud Marchant 5

Nabila Seddiki, Academic Editor and Roger Le Grand, Academic Editor

Author information • Article notes • Copyright and License information Disclaimer

### Associated Data

Data Availability Statement

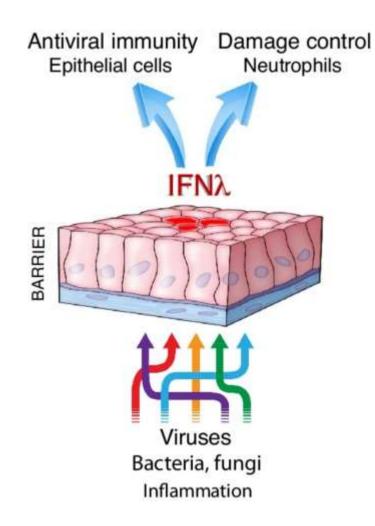
### Abstract

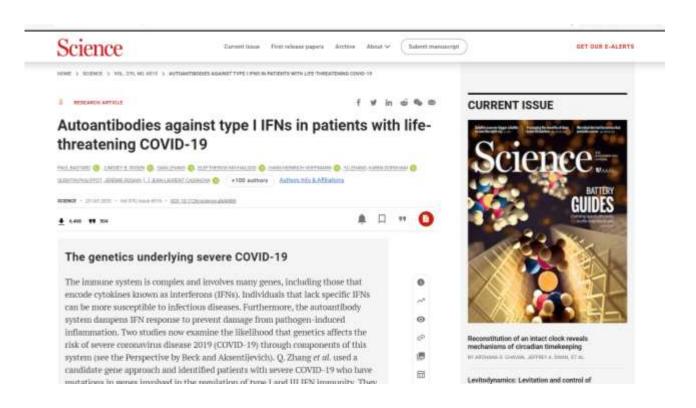
Go to: 🖭

Children are unique in the context of the COVID-19 pandemic. Overall, SARS-CoV-2 has a lower medical impact in children as compared to adults. A higher proportion of children than adults remain asymptomatic following SARS-CoV-2 infection and severe disease and death are also less common. This relative resistance contrasts with the high susceptibility of children to other respiratory tract infections. The mechanisms involved remain incompletely understood but could include the rapid development of a robust innate immune response. On the other hand, children develop a unique and severe complication, named multisystem inflammatory syndrome in children, several weeks after the onset of symptoms. Although children play an important role in the transmission of many pathogens, their contribution to the transmission of SARS-CoV-2 appears lower than that of adults. These unique aspects of COVID-19 in children must be considered in the benefit—risk analysis of vaccination. Several COVID-19 vaccines have been authorized for emergency use in adolescents and clinical studies are ongoing in children. As the

(accines (Basel)

## Ce este la copil altfel in infectia cu SARS-CoV-2?





## Imunitatea are performante diferite in functie de varsta



## La copil problemele se situeaza ... in viitor

 PIMS –TS (Sindromul Pediatric de Inflamație Multisistemică asociat temporal cu infecția produsa de SARS-CoV-2) sau MIS-C (Multisystem Inflammatory Syndrome in Children)

LDH, IL-6, Fibrinogen Fever. CPK D-dimers etc. Myalgia Children (MIS-C Thrombocytopenia Conjunctivitis Veutrophilia Age < 21y, fever, Rash, Lymphadeno †Troponin, ymphopenia lab evidence of pathy, Lip swelling inflammation, ≥ 2 organ (cardiac. aneurysms renal, respiratory, Extremity swelling Hypotension hematologic, with erythema or-Hypoperfusion Gl. dermatologic induration Tachycardia or neurologic) AND Sterile pyuria Skin peeling No alternate Nausea Renal failure plausible diagnosis AND Current/recent Abd pain SARS-CoV-2 infection Diarrhea Hypoxemia (RT-PCR/serology/Ag) TAST/ALT Pulmonary or COVID-19 exposure inflitrates <4 wk prior Chest pain to onset of symptoms

 PACS (Post-Acute COVID-19 Syndrome)



## PIMS-TS / MIS-C





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## Multisystem Inflammatory Syndrome in Children (MIS-C) Interim Guidance

Home / Critical Updates on COVID-19 / COVID-19 Interim Guidance / Multisystem Inflammatory Syndrome in Children (MIS-C) Interim Guidance



## What is the case definition of multisystem inflammatory syndrome in children (MIS-C)?

The CDC issued a <u>Health Advisory</u> on May 14, 2020, that outlines the following case definition for MIS-C:

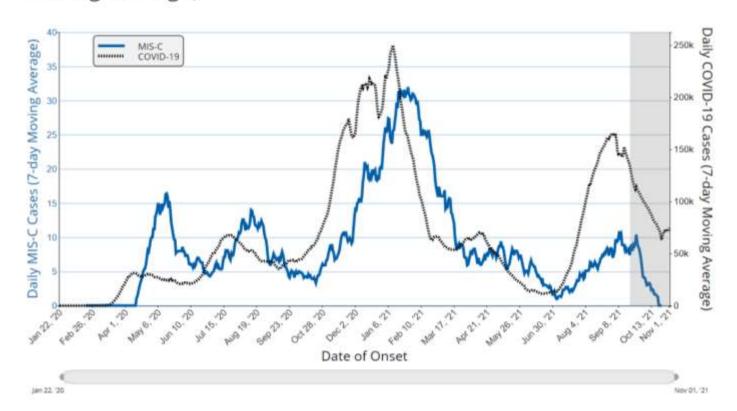
- An individual aged <21 years presenting with fever,¹ laboratory evidence of
  inflammation,² and evidence of clinically severe illness requiring hospitalization, with
  multisystem (≥2) organ involvement (cardiac, renal, respiratory, hematologic,
  gastrointestinal, dermatologic, or neurological); AND</li>
- No alternative plausible diagnoses; AND



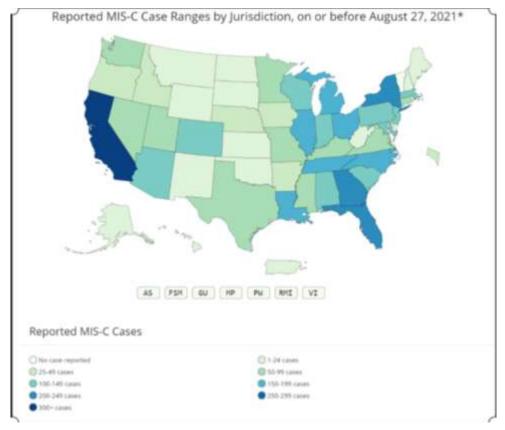
Positive for current or recent SARS-CoV-2 (COVID-19) infection by RT-PCR, serology, or antigen test or COVID-19 exposure within the 4 weeks prior to the onset of symptoms

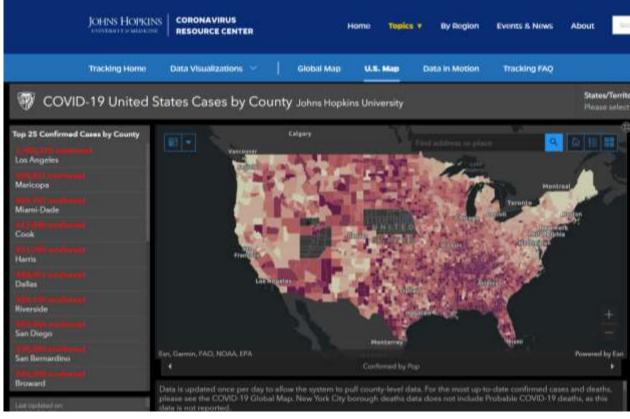
## MIS-C conform CDC

Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)



# Sindromul Pediatric de Inflamație Multisistemică asociat temporar cu infecția produsa de SARS-CoV-2





## MIS-C conform CDC

## Health Department-Reported Cases of Multisystem Inflammatory Syndrome in Children (MIS-C) in the United States

Since mid-May 2020, CDC has been tracking case reports of <u>multisystem inflammatory syndrome in children (MIS-C)</u>, a rare but serious condition associated with COVID-19. CDC is working to learn more about why some children and adolescents develop MIS-C after having COVID-19 or contact with someone with COVID-19, while others do not.

Data on this page are reported voluntarily to CDC by each jurisdiction's health department. CDC encourages all jurisdictions to report the most complete and accurate information that best represents the data available in their jurisdiction Learn more about the data.

Last updated with cases reported to CDC on or before November 1, 2021\*

TOTAL MIS-C PATIENTS MEETING CASE DEFINITION\*

5,526

TOTAL MIS-C DEATHS MEETING CASE
DEFINITION

48

## Summary

- The median age of patients with MIS-C was 9 years. Half of children with MIS-C were between the ages of 5 and 13 years.
- 61% of the reported patients with race/ethnicity information available occurred in children who are Hispanic/Latino (1,444 patients) or Black, Non-Hispanic (1,568 patients).
- 98% of patients had a positive test result for SARS CoV-2, the virus that causes COVID-19. The remaining 2% of patients had contact with someone with COVID-19.
- · 60% of reported patients were male.

## CDC COVID Data Tracker

<sup>\*</sup>Additional patients are under investigation. After review of additional clinical data, patients may be excluded if there are alternative diagnoses that explained their illness.



## Caz clinic

• Domnisoara A, in varsta de 8 ani

Adusa de urgenta de catre salvare

- Suspiciune de abdomen acut
  - Dureri abdominale violente
  - Varsaturi
  - Absenta diaree
  - Somnolenta
  - Febra

## Aspecte clinice





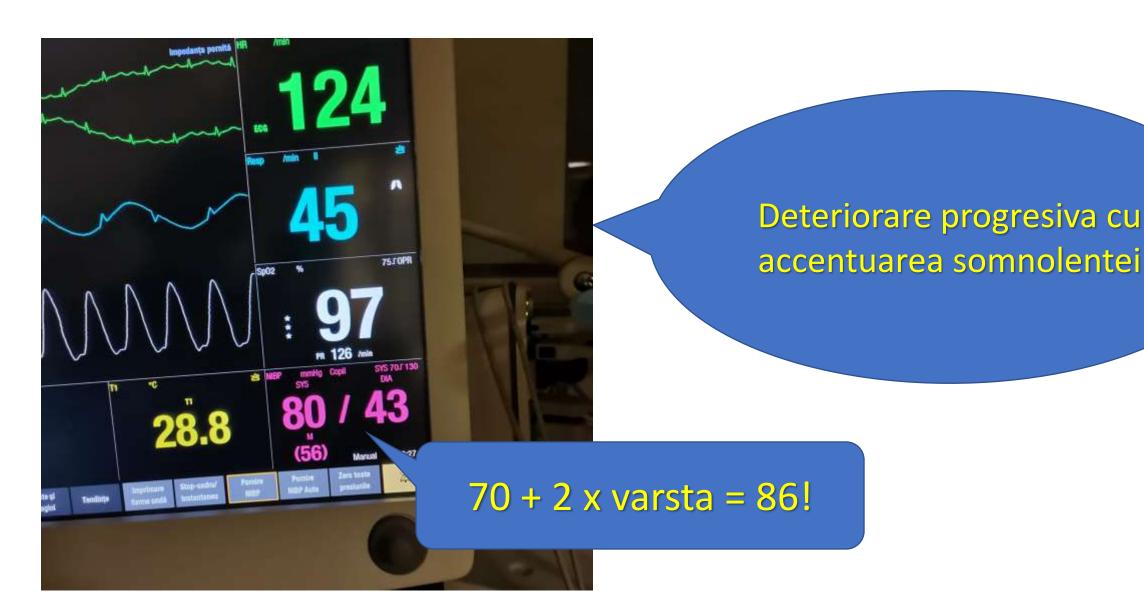
### Evaluarea functiilor vitale



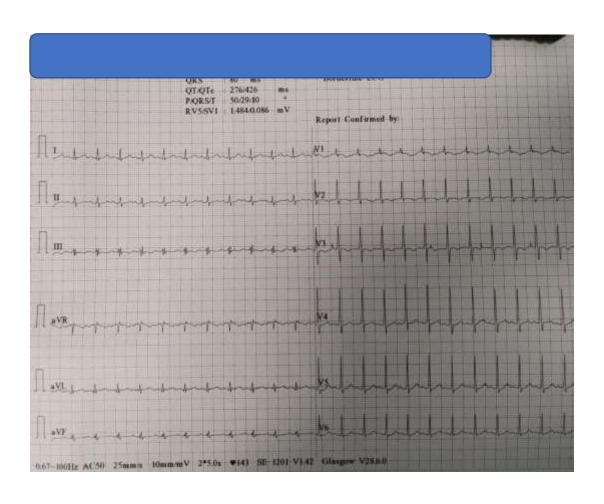
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zace in pat,
lipsita de putere,
fara detresa

 $70 + 2 \times varsta = 86!$ 

### Evaluarea functiilor vitale



# Investigatii initiale



			and a	NOW THE REAL PROPERTY.	SINEWA	
			_			
Blood gas values						
DH	7.367		-	7.350	- 7.460	
† pCO <sub>4</sub>	47.8	mmHg	- t	35.0	- 450	
4 pO,	49.1	mmHg	- 1	80.0	- 100	
Oximetry values						
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1 10,	86.2	74	1	85.0	- 100.0	ĕ
FO <sub>y</sub> Hb	83.9	%	1	00		
FCOHb	0.5	34	-1	0.5	- 15	
Alle	13.4	34	- 1		-	
1 FMWHb	2.2	*	1	0.0	- 15	
Prof	60	*	1			
Electrolyte values						i
7 692	5.7	John Marin	- \$		- 50	
eNa*	141	Minor.	t	135	- 145	
o'CeP*	1.36	mmol/L	- 1	1.20	- 2:00	
eCr.	106	mmol/L	t	98	- 110	
Metabolite values						
eGlu	89	mg/d.	Ĩ,	70	- 100	
† plac	3.3	mmo/f_	1	15	- 20	
ctBil.	3	mgt.	- 1	3 100		
remperature-corrects	ou values					
pH(T)	7.367					
pCO <sub>2</sub> (T)	47.8	mmirig				
pO <sub>j</sub> (T)	49.1	mmHig				
Oxygen status						
riO <sub>sc</sub>	12.2	Vol%				
p60e	25.27	mmHa				
Acid-base status	CHE	- 100000				
#Base(Ecf)e	2.1	mmol/L				
scress(CELIC	2.1	HIHOUL				

### **Evolutie**

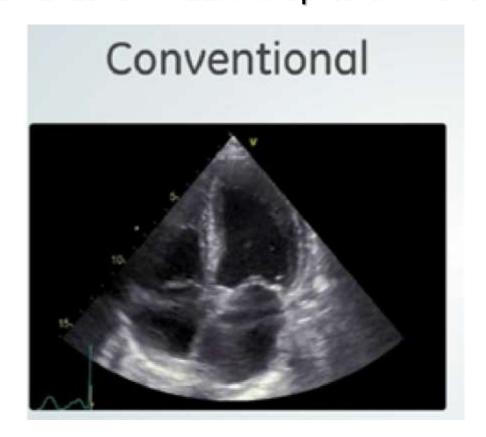
• Febriciteaza la valori inalte

Evaluare cardiologica
 (Conf dr Eliza CINTEZA la Spitalul MS Curie)

Somnolenta

 Agravare progresiva pe fondul scaderii TA

Initiere PEV continua cu inotrop



# Optiuni de tratament

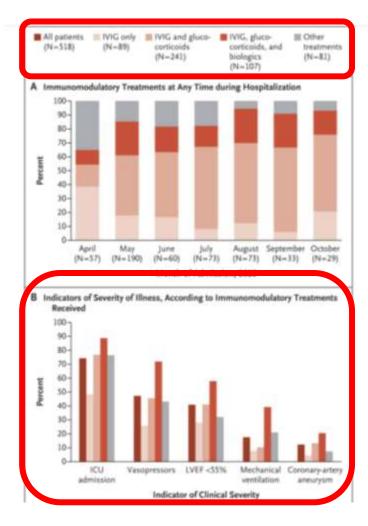


#### DRIGINAL ARTICLE

### Multisystem Inflammatory Syndrome in Children — Initial Therapy and Outcomes

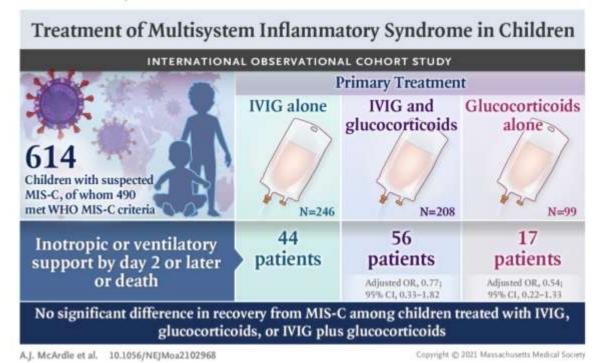
Mary Beth F. Son, M.D., Nancy Morray, M. Sc., Kevin Friedman, M.D., Carseron C., Young, Margaret M. Newhams, M.P.H., Leora R. Feldstein, Ph.D., Laura L. Loftis, M.D., Kelke M. Tarquiron, M.D., Aalok R. Singh, M.D., Sabrina M. Heidemann, M.D., Vijaya L. Sonsa, M.D., Blecky J. Biggs, M.D., et al., for the Overcoming COVID-19 Investigators.





### Terapie

The NEW ENGLAND JOURNAL of MEDICINE



Radia T, Williams N, Agrawal P, Harman K, Weale J, Cook J, Gupta A. Multi-system inflammatory syndrome in children & adolescents (MIS-C): A systematic review of clinical features and presentation. Paediatr Respir Rev 2021 Jun;38:51-57.

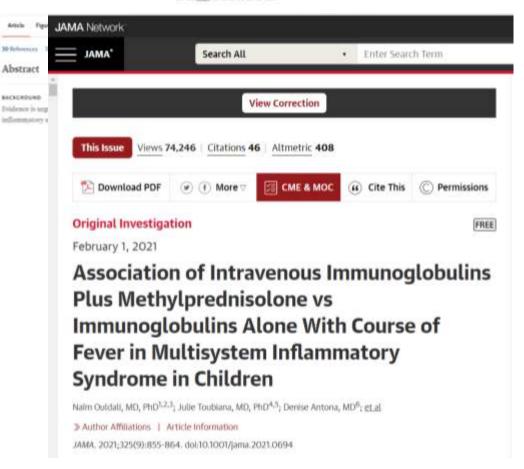


#### Treatment of Multisystem Inflammatory Syndrome in Children

Anahour J. McArdin, M. H., S. Clar, Ottomai Vito, M. Sc., Harolin Patel, M. B., S. S., Diseaser G. Sasing W. M., S. S., Priper Stade, M. B., S. S., Clare Whom, M. H., S. Dire, Commun. M. S., Standarde, M. S., Diseas Miller Gallerian, M. D., Standarde, M. D., Standarde, Climp-Customere, M. D., McCaulle, M. M., Direct M. S., Direct Marchite, M. D., Direct Marchite, M. D., Standarde, Climp-Customere, M. D., McCaulle, M. S., Standarde, M. D., Standarde, Climp-Customere, M. D., McCaulle, M. S., Standarde, M. D., Standarde, Climp-Customere, M. D., McCaulle, M. S., Standarde, M. S., Standarde, Climp-Customere, M. D., McCaulle, M. S., Standarde, Climp-Customere, M. D., McCaulle, M. S., Standarde, M. S

=

п



# Ce facem cand nu merge nimic??

Practice Guideline > Arthritis Rheumatol. 2021 Apr;73(4):e13-e29. doi: 10.1002/art.41616. Epub 2021 Feb 15.

### American College of Rheumatology Clinical Guidance for Multisystem Inflammatory Syndrome in Children Associated With SARS-CoV-2 and Hyperinflammation in Pediatric COVID-19: Version 2

Lauren A Henderson <sup>1</sup>, Scott W Canna <sup>2</sup>, Kevin G Friedman <sup>1</sup>, Mark Gorelik <sup>3</sup>, Sivia K Lapidus <sup>4</sup>, Hamid Bassiri <sup>5</sup>, Edward M Behrens <sup>5</sup>, Anne Ferris <sup>6</sup>, Kate F Kernan <sup>7</sup>, Grant S Schulert <sup>8</sup>, Philip Seo <sup>9</sup>, Mary Beth F Son <sup>1</sup>, Adriana H Tremoulet <sup>10</sup>, Rae S M Yeung <sup>11</sup>, Amy S Mudano <sup>12</sup>, Amy S Turner <sup>13</sup>, David R Karp <sup>14</sup>, Jay J Mehta <sup>5</sup>

Affiliations + expand

PMID: 33277976 PMCID: PMC8559788 (available on 2022-04-01) DOI: 10.1002/art.41616

#### Abstract

Objective: To provide guidance on the management of Multisystem Inflammatory Syndrome in Children (MIS-C), a condition characterized by fever, inflammation, and multiorgan dysfunction that manifests late in the course of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Recommendations are also provided for children with hyperinflammation during coronavirus disease 2019 (COVID-19), the acute, infectious phase of SARS-CoV-2 infection.

Methods: The Task Force was composed of 9 pediatric rheumatologists and 2 adult rheumatologists, 2 pediatric cardiologists, 2 pediatric cardiologists, 2 pediatric infectious disease specialists, and 1 pediatric critical care physician. Preliminary statements addressing clinical questions related to MIS-C and hyperinflammation in COVID-19 were developed based on evidence reports. Consensus was built through a modified Delphi process that involved anonymous voting and webinar discussion. A 9-

Review > Nat Rev Rheumatol. 2021 Oct 29;1-18. doi: 10.1038/s41584-021-00709-9. Online ahead of print.

### Multisystem inflammatory syndrome in children and Kawasaki disease: a critical comparison

```
Chetan Sharma * 1, Madhusudan Ganigara * 2, Caroline Galeotti 3, Joseph Burns *, Fernando M Berganza 3, Denise A Hayes 6, Davinder Singh-Grewal 7, Suman Bharath 6, Sujata Sajjan 5, Jagadeesh Bayry 10, 11

Affiliations + expand
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PMID: 34716418 PMCID: PMC8554518 DOI: 10.1038/s41584-021-00709-9

Free PMC article

#### Abstract

Children and adolescents infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are predominantly asymptomatic or have mild symptoms compared with the more severe coronavirus disease 2019 (COVID-19) described in adults. However, SARS-CoV-2 is also associated with a widely reported but poorly understood paediatric systemic vasculitis. This multisystem inflammatory syndrome in children (MIS-C) has features that overlap with myocarditis, toxic-shock syndrome and Kawasaki disease. Current evidence indicates that MIS-C is the result of an exaggerated innate and adaptive immune response, characterized by a cytokine storm, and that it is triggered by prior SARS-CoV-2 exposure. Epidemiological, clinical and immunological differences classify MIS-C as being distinct from Kawasaki disease. Differences include the age range, and the geographical and ethnic distribution of patients. MIS-C is associated with prominent gastrointestinal and cardiovascular system involvement, admission to intensive care unit, neutrophilia, lymphopenia, high levels of IFNy and low counts of naive CD4\* T cells, with a high proportion of activated memory T cells. Further investigation of MIS-C will continue to enhance our understanding of similar conditions associated with a cytokine storm.

# Externare 11 XI 2021 Dupa IVIG+Medrol+Anakinra Si antibiotic CG3 dezescaladat dupa 3 zile



February 24, 2021

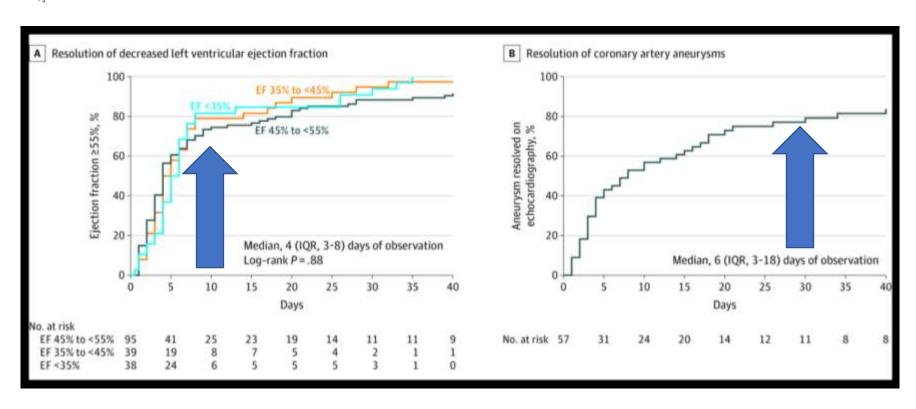
### Characteristics and Outcomes of US Children and Adolescents With Multisystem Inflammatory Syndrome in Children (MIS-C) Compared With Severe Acute COVID-19

Leora R. Feldstein, PhD<sup>1,2</sup>; Mark W. Tenforde, MD<sup>1</sup>; Kevin G. Friedman, MD<sup>3</sup>; et al

≫ Author Affiliations | Article Information

JAMA. 2021;325(11):1074-1087. doi:10.1001/jama.2021.2091

### **Evolutie**



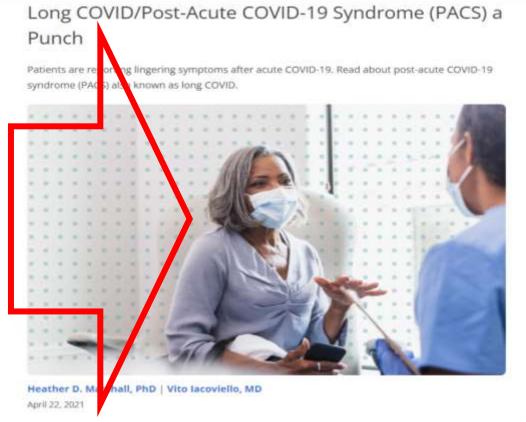
August 12, 2020

Post-Acute COVID-19 Syndrome



STAT

Long After the Fire of a COVID-19 Infection, Mental and Neurological Effects Can Still Smolder



A majority of non-hospitalized COVID-19 patients are not back to normal health or normal biochemistry three months on, with one or more symptoms persisting in 57% of those patients up to six months following the acute phase

Nathan G. Lawler et al. Systemic Perturbations in Amine and Kynurenine Metabolism Associated with Acute SARS-CoV-2

Infection and Inflammatory Cytokine Responses, *Journal of Proteome Research* (2021). DOI: 10.1021/acs.jproteome.1c00052

Received: 3 November 2020 Revised: 13 November 2020 Accepted: 16 November 2020

DOI: 10.1111/apa.15673

#### REGULAR ARTICLE



WILEY

Case report and systematic review suggest that children may experience similar long-term effects to adults after clinical COVID-19

Jonas F. Ludvigsson 1,2,3,4 (5)

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Department of Paediatrics, Orebro University Hospital, Orebro, Sweden

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\*Department of Medicine, Columbia University College of Physicians and Surgeons, New York, New York, USA

#### Correspondence

Jonas F. Ludvigsson, Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, 17177 Stockholm, Sweden. Email: jonasludvigsson@yahoo.com

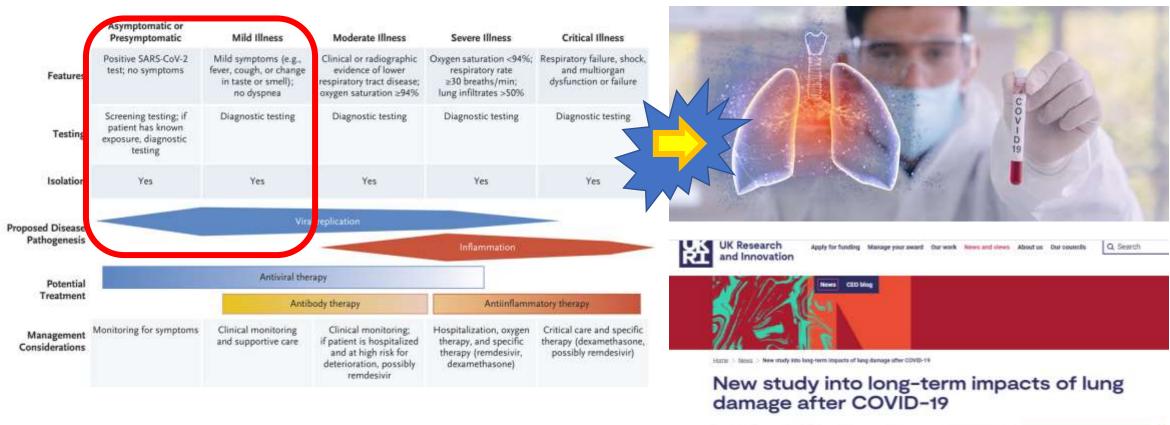
#### Abstract

Aim: Persistent symptoms in adults after COVID-19 are emerging and the term long COVID is increasingly appearing in the literature. However, paediatric data are scarce. Methods: This paper contains a case report of five Swedish children and the longterm symptoms reported by their parents. It also includes a systematic literature review of the MEDLINE, EMBASE and Web of Science databases and the medRxiv/ bioRxiv pre-print servers up to 2 November 2020.

Results: The five children with potential long COVID had a median age of 12 years (range 9-15) and four were girls. They had symptoms for 6-8 months after their clinical diagnoses of COVID-19. None were hospitalised at diagnosis, but one was later admitted for peri-myocarditis. All five children had fatigue, dyspnoea, heart palpitations or chest pain, and four had headaches, difficulties concentrating, muscle weakness, dizziness and sore throats. Some had improved after 6-8 months, but they all suffered from fatigue and none had fully returned to school. The systematic review identified 179 publications and 19 of these were deemed relevant and read in detail. None contained any information on long COVID in children.

Conclusion: Children may experience similar long COVID symptoms to adults and females may be more affected.

Dar la copil?



UK Interstitial Lung Disease-Long COVID Study (UKILD-Long COVID)



# Evolutia in faza a Iva a bolii - PACS



# PACS – Post-Acute COVID-19 Syndrome Mecanisme patogenice

J Thromb Haemost. 2021 Oct;19(10):2546-2553. doi: 10.1111/jth.15490. Epub 2021 Sep. 12.

### Persistent endotheliopathy in the pathogenesis of long COVID syndrome

```
Helen Fogarty <sup>1</sup>, Liam Townsend <sup>2</sup>, Hannah Morrin <sup>1</sup>, Azaz Ahmad <sup>1</sup>, Claire Comerford <sup>1</sup>, Ellie Karampini <sup>1</sup>, Hanna Englert <sup>2</sup>, Mary Byrne <sup>3</sup>, Colm Bergin <sup>2</sup>, Jamie M O'Sullivan <sup>1</sup>, Ignacio Martin-Loeches <sup>6</sup>, Parthiban Nadarajan <sup>7</sup>, Ciaran Bannan <sup>2</sup>, Patrick W Mallon <sup>8</sup>, Gerard F Curley <sup>18</sup>, Roger J S Preston <sup>1</sup>, Asiling M Rehill <sup>8</sup>, Dennis McGonagle <sup>12</sup>, Cliona Ni Cheallaigh <sup>2</sup>, Ross I Baker <sup>14</sup>, <sup>15</sup>, Thomas Renné <sup>4</sup>, <sup>16</sup>, Soracha E Ward <sup>1</sup>, James S O'Donnell <sup>1</sup>, <sup>3</sup>, Irish COVID-19 Vasculopathy Study (iCVS) investigators
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Collaborators, Affiliations + expand

PMID: 34375505 PMCID: PMC8420256 DOI: 10.1111/jth.15490

Free PMC article

#### Abstract

Background: Persistent symptoms including breathlessness, fatigue, and decreased exercise tolerance have been reported in patients after acute SARS-CoV-2 infection. The biological mechanisms underlying this "long COVID" syndrome remain unknown. However, autopsy studies have highlighted the key roles played by pulmonary endotheliopathy and microvascular immunothrombosis in acute COVID-19.

Objectives: To assess whether endothelial cell activation may be sustained in convalescent COVID-19 patients and contribute to long COVID pathogenesis. > F1000Res, 2020 Nov 19:9:1349, doi: 10.12688/f1000research.27287.2, eCollection 2020.

'The long tail of Covid-19' - The detection of a prolonged inflammatory response after a SARS-CoV-2 infection in asymptomatic and mildly affected patients

```
Ivan Doylov * 1, Jenny Hallqvist * 1 2, Kimberly C Gilmour 3, Louis Grandjean 3, Kevin Mills 1, Wendy E Heywood 1

Affiliations + expand

PMID: 33391730 PMCID: PMC7745182 DOI: 10.12688/11000research.27287.2

Free PMC article
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#### Abstract

'Long Covid', or medical complications associated with post SARS-CoV-2 infection, is a significant post-viral complication that is being more and more commonly reported in patients. Therefore, there is an increasing need to understand the disease mechanisms, identify drug targets and inflammatory processes associated with a SARS-CoV-2 infection. To address this need, we created a targeted mass spectrometry based multiplexed panel of 96 immune response associated proteins. We applied the multiplex assay to a cohort of serum samples from asymptomatic and moderately affected patients. All patients had tested positive for a SARS-CoV-2 infection by PCR and were determined to be subsequently positive for antibodies. Even 40-60 days post-viral infection, we observed a significant remaining inflammatory response and mitochondrial stress. This indicates that biochemical and inflammatory pathways within the body can remain perturbed long after SARS-CoV-2 infections have subsided even in asymptomatic and moderately affected patients.

#### **BMJ Public Health Emergency Collection**

**Fublic Health Emergency COVID-18 Initiative** 

BMJ Open Respir Res. 2021; 8(1): e001049.

Published online 2021 Sep 23. doi: 10.1136/bmiresp-2021-001049

PMCID: PMC8461362 PMID: 34556492

# Understanding the burden of interstitial lung disease post-COVID-19: the UK Interstitial Lung Disease-Long COVID Study (UKILD-Long COVID)

Jim M Wild. <sup>1</sup> Joanna C Porter. <sup>2,3,4</sup> Philip L Molyneaux. <sup>5,6</sup> Peter M George. <sup>5,6</sup> Jain Stewart. <sup>5</sup> Richard James Allen. <sup>7</sup> Raminder Aut. <sup>8</sup> John Kenneth Baillie. <sup>9</sup> Shaney L Barratt. <sup>10</sup> Paul Beime. <sup>11</sup> Stephen M Bianchi. <sup>12</sup> John F Blaikley. <sup>13,14</sup> Jonathan Brooke. <sup>15,16,17</sup> Nazia Chaudhuri. <sup>14,18</sup> Guilbem Collier. <sup>1</sup> Emma K Denneny. <sup>2,3,4</sup> Annemarie Docherty. <sup>19</sup> Laura Fabbri. <sup>5</sup> Michael A Gibbons. <sup>20,21</sup> Fergus V Gleeson, <sup>22</sup> Bibek Goootu. <sup>23,24</sup> Ian P Hall, <sup>16,17</sup> Neil A Hanley. <sup>14,25</sup> Melissa Heightman. <sup>3</sup> Toby E Hillman. <sup>3</sup> Simon R Johnson. <sup>16,17</sup> Mark G Jones. <sup>26,27</sup> Fasihul Khan. <sup>16,17</sup> Rod Lawson. <sup>12</sup> Puia Mehta. <sup>2,28</sup> Jane A Mitchell. <sup>5</sup> Manuela Plate. <sup>2,29</sup> Krisnah Poinasamy. <sup>30</sup> Jennifer K Quint. <sup>5</sup> Pilar Rivera-Ortega. <sup>18</sup> Malcolm Semple. <sup>31</sup> A John Simpson. <sup>32,33</sup> DJF Smith. <sup>5,5</sup> Mark Spears. <sup>34,35</sup> Lisa G Spencer. <sup>35</sup> Stefan C Stanel. <sup>16,37</sup> David R Thickett. <sup>36,39</sup> AA Roger Thompson. <sup>1</sup> Simon LF Walsh. <sup>5</sup> Nicholas D Weatherley. <sup>1</sup> Mark Everard Weeks. <sup>5</sup> Dan G Wootton. <sup>36,40</sup> Chris E Brightling. <sup>24</sup> Rachel C Chambers. <sup>2</sup> Ling-Pei Ho. <sup>41,42</sup> Joseph Jacob. <sup>4,43</sup> Karen Piper Hanley. <sup>37</sup> Louise V Wain. <sup>7,24</sup> and R Gisli Jenkins.

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 Article notes
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 Disclaimer

Abstract Go to: €

#### Introduction

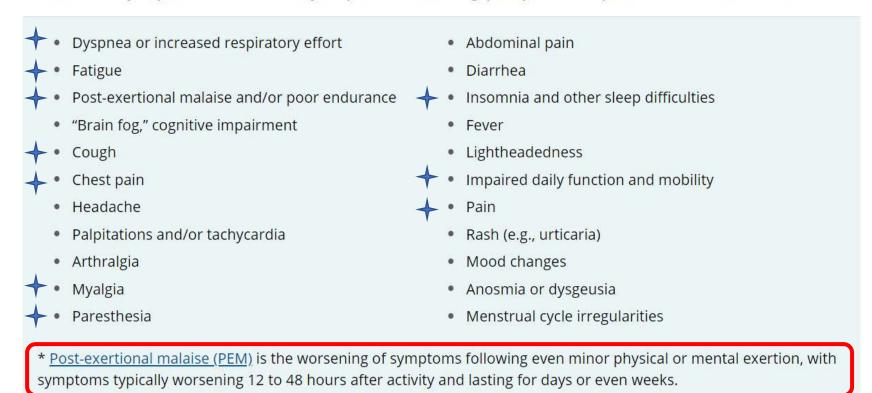
The COVID-19 pandemic has led to over 100 million cases worldwide. The UK has had over 4 million cases, 400 000 hospital admissions and 100 000 deaths. Many patients with COVID-19 suffer long-term symptoms, predominantly breathlessness and fatigue whether hospitalised or not. Early data suggest potentially severe long-term consequence of COVID-19 is development of long COVID-19-related interstitial lung disease (LC-ILD).

Meta-analysis of initial observations has identified substantial levels of LC-ILD with an estimated 27% of CT scanned patients having fibrotic changes during hospitalisation, and an estimated 33% with fibrotic changes at 6 months, which suggests minimal regression over time \*

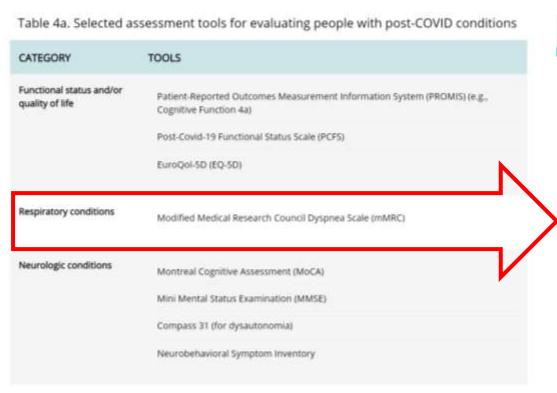
\*Laura Fabbri SM, Khan F, Chi W. Post-viral parenchymal lung disease of COVID-19 and viral pneumonitis: a systematic review and meta-analysis.

medRxiv 2021. 10.1101/2021.03.15.21253593

Table 1. Symptoms commonly reported among people with post-COVID conditions



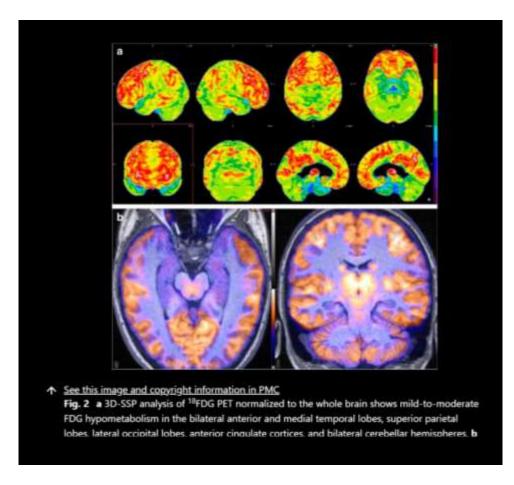
Patient History and Physical Examination | Evaluating and Caring for Patients with Post-COVID Conditions | CDC





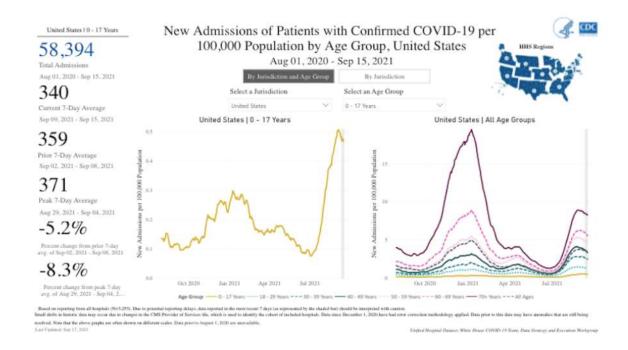
Launois, C., Barbe, C., Bertin, E. et al. The modified Medical Research Council scale for the assessment of dyspnea in daily living in obesity: a pilot study. *BMC Pulm Med* 12, 61 (2012). https://doi.org/10.1186/1471-2466-12-61





Younger DS. Post-acute sequelae of SARS-CoV-2 infection (PASC): peripheral, autonomic, and central nervous system features in a child. *Neurol Sci* 2021 Oct;42(10):3959-3963.

### Ce putem face?



A CDC study published earlier this month found that hospitalization rates were 10 times higher among unvaccinated kids than among fully vaccinated kids.

### Israel reports that 11.2 percent of all children infected with SARS-CoV-2 suffer from long COVID

#### **Emily Ochial**

© 17 September 2021

The Israeli Health Ministry announced Monday that over 10 percent of Israeli children who have been diagnosed with coronavirus are showing signs of post-acute COVID-19 ("long COVID"), meaning they are suffering COVID-19 symptoms for over four weeks after initial infection, according to the *Times of Israel*.

Its follow-up survey of 13,864 children between the ages 3–18 who recovered from COVID-19 found that a staggering 11.2 percent reported symptoms of long COVID. The troubling figures come as child infections and death continue to skyrocket across the world as a result of the Delta variant which is affecting and hospitalizing children at alarming rates.

# Testarea la copil pentru maladie COVID-19

Delta!

Multicenter Study > Clin Infect Dis. 2021 Jun 15:72(12):2215-2217. doi: 10.1093/cid/ciaa1044.

### Systematic Severe Acute Respiratory Syndrome Coronavirus 2 Screening at Hospital Admission in Children: A French Prospective Multicenter Study

```
Julie Poline 1 2, Jean Gaschignard 1 3 4, Claire Leblanc 5, Fouad Madhi 6, Elsa Foucaud 5,
Elodie Nattes 6, Albert Faye 1 4 7, Stephane Bonacorsi 3 4 8, Patricia Mariani 8,
Emmanuelle Varon 9 10, Mounira Smati-Lafarge 9, Marion Caseris 1 4, Romain Basmaci 2 11
Noemie Lachaume 4 11, Naim Ouldali 1 4 2 12
```

Affiliations + expand

PMID: 32710743 PMCID: PMC7454330 DOI: 10.1093/cid/ciaa1044

Free PMC article

#### Abstract

To assess the relevance of systematic severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) screening of all children admitted to hospital, we conducted a prospective multicenter study including 438 consecutive hospitalized children. A symptom-based SARS-CoV-2 testing strategy failed to identify 45% (95% confidence interval, 24%-68%) of hospitalized children infected by SARS-CoV-2. To limit intrahospital transmission, a systematic screening of children admitted to hospital should be considered.

Keywords: COVID-19; SARS-CoV-2 infection; children; intra-hospital transmission; systematic screening.

> Emerg Infect Dis. 2021 Feb;27(2):404-410. doi: 10.3201/eid2702.202318. Epub 2021 Jan 4.

### Universal Admission Screening for SARS-CoV-2 Infections among Hospitalized Patients, Switzerland, 2020

Thomas Scheier, Adrian Schibli, Geri Eich, Christian Rüegg, Frank Kube, Adrian Schmid, Urs Karrer, Aline Wolfensberger, Hugo Sax, Peter W Schreiber

PMID: 33395382 PMCID: PMC7853575 DOI: 10.3201/eid2702.202318 Free PMC article

#### Abstract

Switzerland began a national lockdown on March 16, 2020, in response to the rapid spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We assessed the prevalence of SARS-CoV-2 infection among patients admitted to 4 hospitals in the canton of Zurich, Switzerland, in April 2020.

symptoms of coronavirus disease (COVID-19). Overall, 529 (18.8%) persons had >1 symptom of COVID-19, of whom 60 (11.3%) tested positive for SARS-CoV-2. Eight asymptomatic persons (0.4%) also tested positive for SARS-CoV-2. Our findings indicate that screening on the basis of COVID-19 symptoms, regardless of clinical suspicion, can identify most SARS-CoV-2-positive persons in a lowprevalence setting.

Keywords: 2019 novel coronavirus disease; COVID-19; PCR; SARS-CoV-2; Switzerland; asymptomatic transmission; coronavirus; coronavirus disease; diagnosis; emerging infections; epidemiology; respiratory infections; screening; severe acute respiratory syndrome coronavirus 2; testing; viruses; zoonoses.

### Redeschiderea scolii & testarea

Determining the optimal strategy for reopening schools, the impact of test and trace interventions, and the risk of occurrence of a second COVID-19 epidemic wave in the UK: a modelling study

Janning Pangeske-Griffiths, Cliff C Kess, Robyn M Stuart, Dina Mistry, Daniel J Klein, Rossell M Viner\*, Chris Beneff\*

#### Summary

Background As lockdown measures to slow the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection begin to ease in the UK, it is important to assess the impact of any changes in policy, including school reopening and broader relaxation of physical distancing measures. We aimed to use an individual-based model to predict the impact of two possible strategies for reopening schools to all students in the UK from September, 2020, in combination with different assumptions about relaxation of physical distancing measures and the scale-up of testing.

Methods In this modelling study, we used Govasim, a stochastic individual-based model for transmission of SARS-CoV-2, calibrated to the UK epidemic. The model describes individuals contact networks stratified into household, school, workplace, and community layers, and uses demographic and epidemiological data from the UK. We simulated six different scenarios, representing the combination of two school reopening strategies (full time and a part-time rota system with 50% of students attending school on alternate weeks) and three testing scenarios (68% contact tracing with no scale-up in testing, 68% contact tracing with sufficient testing to avoid a second COVID-19 wave, and 40% contact tracing with sufficient testing to avoid a second COVID-19 wave; We estimated the number of new infections, cases, and deaths, as well as the effective reproduction number (R) under different strategies. In a sensitivity analysis to account for uncertainties within the stochastic simulation, we also simulated infectiousness of children and young adults aged younger than 20 years at 50% relative to older ages (20 years and older).

Findings With increased levels of testing (between 59% and 87% of symptomatic people tested at some point during an active SARS-CoV-2 infection, depending on the scenario), and effective contact tracing and isolation, an epidemic rebound might be prevented. Assuming 68% of contacts could be traced, we estimate that 75% of individuals with symptomatic infection would need to be tested and positive cases isolated if schools return full-time in September, or 65% if a part-time rota system were used. If only 40% of contacts could be traced, these figures would increase to 87% and 25%, respectively. However, without these levels of testing and contact tracing, reopening of schools together with gradual relaxing of the lockdown measures are likely to induce a second wave that would peak in December, 2020, if schools open full-time in September, and in February, 2021, if a part-time rota system were adopted. In either case, the second wave would result in R rising above 1 and a resulting second wave of infections 2-0-2-3 times the size of the original COVID-19 wave. When infectiousness of children and young adults was varied from 100% to 50% of that of older ages, we still found that a comprehensive and effective test-trace-isolate strategy would be required to avoid a second COVID-19 wave.

interpretation To prevent a second COVID-19 wave, relaxation of physical distancing, including reopening of schools, in the UK must be accompanied by large-scale, population-wide testing of symptomatic individuals and effective tracing of their contacts, followed by isolation of diagnosed individuals.

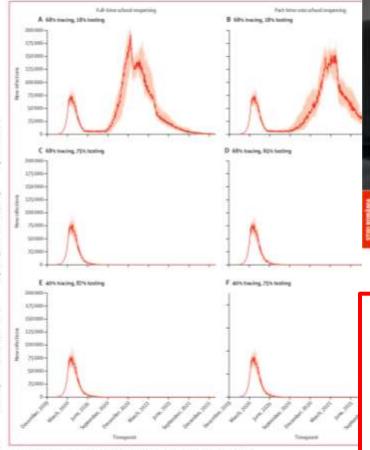


Figure 2: Model estimates of daily new SARS-CeV-2 infections from jun 21, 2020, to Dec 21, 2022.

(In flow infections with Six family and ES hosting or the full force shift comparing account. (If these infections with 40% tracing and 20% to appear on the control account in 10% to a six family and 25% to a part from the full force achieved in 10% to a part from the full force achieved in 10% to a part from the first part force achieved in 10% to a part from the first part from a chief in part from the first part from the



Hartstein v. Crist's Crist Standards

Andrei Baciu anunță că profesorii vor fi instruiți pentru a face testele de salivă elevilor: "Nu este o procedură medicală"

#### "Consider că preșcolarii și elevii ar trebui să fie testați în familie"

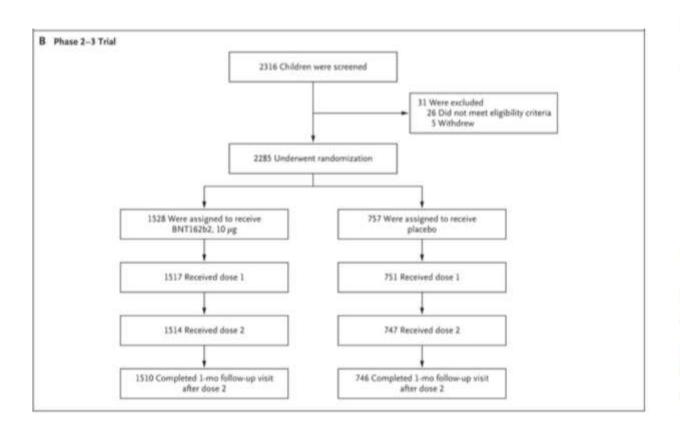
O altă soluție, potrivit liderului LSI, ar fi aceea ca testele să fie făcute de către părinți pentru că în scoli procedura ar dura foarte mult și ar afecta activitatea didactică.

"Consider că preșcolarii și elevii ar trebui să fie testați în familie și părinții să-și asume acest lucru. Adică, aceste teste să fie date copiilor acasă, părinții să-i testeze și, în situația în care testele les pozitive, copiii să nu mai fie trimiși la scoală", a explicat Liviu Axinte.

Dată fiind starea de alertă, liderul LSI nu exclude însă posibilitatea ca profesorii să fie puși să-i testeze pe copii, deși nu au competențe în acest domeniu.

### Despre vaccin, la copii

The NEW ENGLAND JOURNAL of MEDICINE



#### ORIGINAL ARTICLE

### Evaluation of the BNT162b2 Covid-19 Vaccine in Children 5 to 11 Years of Age

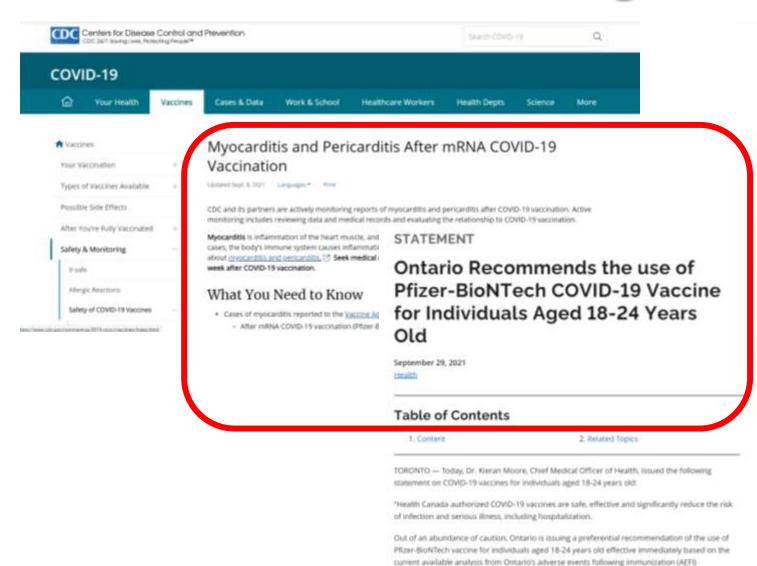
E.B. Walter, K.R. Talaat, C. Sabharwal, A. Gurtman, S. Lockhart, G.C. Paulsen,
E.D. Barnett, F.M. Muñoz, Y. Maldonado, B.A. Pahud, J.B. Domachowske,
E.A.F. Simões, U.N. Sarwar, N. Kitchin, L. Cunliffe, P. Rojo, E. Kuchar, M. Rämet,
I. Munjal, J.L. Perez, R.W. Frenck, Jr., E. Lagkadinou, K.A. Swanson, H. Ma, X. Xu,
K. Koury, S. Mather, T.J. Belanger, D. Cooper, Ö. Türeci, P.R. Dormitzer, U. Şahin,
K.U. Jansen, and W.C. Gruber, for the C4591007 Clinical Trial Group\*

#### ABSTRACT

#### BACKGROUND

Safe, effective vaccines against coronavirus disease 2019 (Covid-19) are urgently needed in children younger than 12 years of age.

# Eficienta si siguranta la copil



surveillance system.

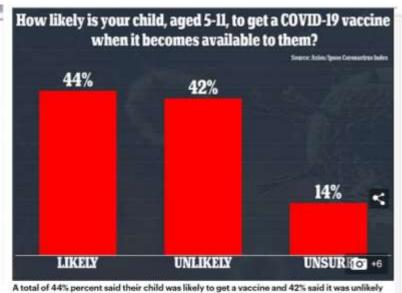
# Pfizer COVID-19 vaccine shows 90.7% efficacy during trial in children



A vial labelled with the Pfizer-BioNTech coronavirus disease (COFID-19) vaccine is seen in this illustration picture taken March 19, 2021. — Reuters/File

NEW YORK: The Pfizer/BioNTech COVID-19 vaccine showed 90.7% efficacy against the coronavirus in a clinical trial of children 5 to 11 years old, the US drugmaker said on Friday.

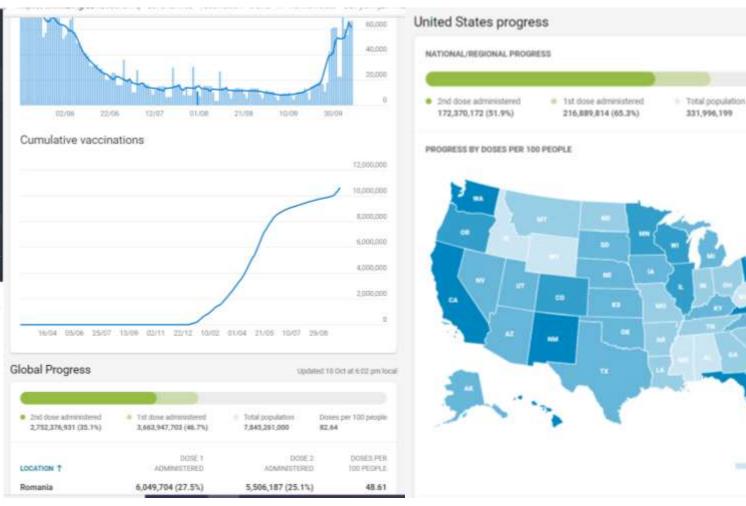
# Despre vaccin, la copii



their kids would be immunized

For the poll, 1.10 aged 18 and older were surveyed in English or Spanish between Septem

> 44x27.5:65.3 = 18.5% Romania



Updated 10 Oct at 6:05 pm loca

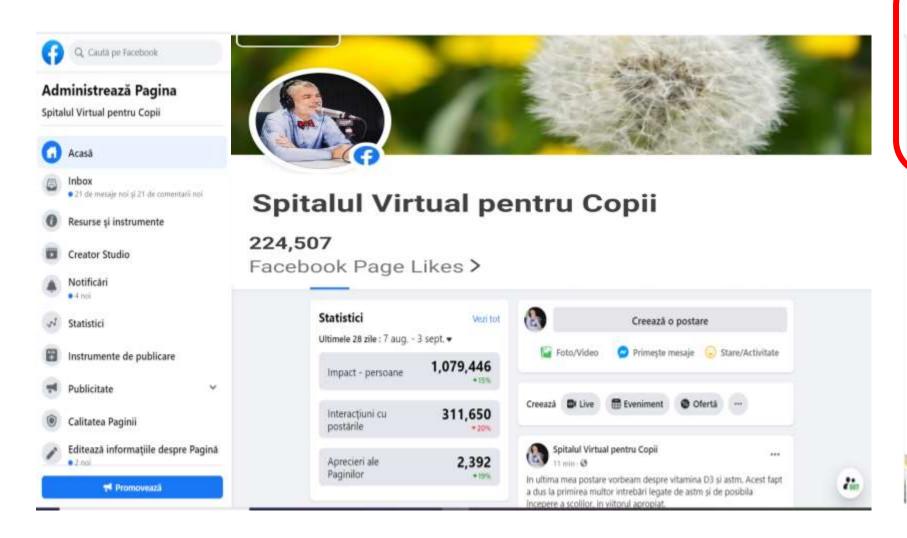
Doses per 100 people

121.03

Doses per 100 people

97 107 117 127

# Ce putem face acum in Romania?





De vina suntem noi medicii care prescriem complet aiurea carbapeneme si cefalosporine de ultima generatie pentru boli virale sau bacteriene "banale". Sau utilizam combinatii fantasmagorice de clase terapeutice, care nu exista in niciun ghid de practica din lume... Pentru ca noi suntem "speciali". La noi nu se aplica ghidurile de practica ale IDSA sau ESPID... Iar in cele mai multe cazuri NICI macar cele ale Societatii Nationale de Pediatrie. De ce? Pentru ca practicam o medicina defensiva pe principiul "cazutului drobului de sare", pentru ca nu colaboram destul intre noi clinicieni, farmacologi, microbiologi si epidemiologi. Pentru ca parintii solicita IMPERIOS antibiotice pe post de antipiretic si pentru ca exista multiple bariere de comunicare medic si pacient. Si nu in ultimul rand din comoditate sau pentru ca este la moda... Eu cred ca putem face progrese impreuna in sensul cel bun. Un proces de stewardship similar celui olandez ar putea fi implementat si la noi. Am facut tentative la INSMC si se pare ca functioneaza... Sunt maindru de rezidentii mei care nu prescriu frenetic antibiotice...



### In loc de concluzii



Promotional material

# COVID-19 vaccination: a guide for eligible children and young people aged 12 to 17

Updated 15 September 2021

#### Contents

What is COVID-19 or coronavirus?

Eligibility and timing of vaccination

Risk of COVID-19 infection

Protection from the vaccine

Consent

Side effects

Can you catch COVID-19 from the vaccine?

What to do next

This leaflet explains the coronavirus (COVID-19) vaccination programme for eligible children and young people.

### What is COVID-19 or coronavirus?

COVID-19 is a very infectious respiratory disease caused by the SARS-CoV-2 virus. Very few children and young people with COVID-19 infection go on to have severe disease.

There is no cure for COVID-19 although some newly tested treatments do help to reduce the risk of complications.