

Multicenter Initial Guidance on Use of Antivirals for Children With Coronavirus Disease 2019/Severe Acute Respiratory Syndrome Coronavirus 2.

Title: Multicenter Initial Guidance on Use of Antivirals for Children With Coronavirus Disease 2019/Severe Acute Respiratory Syndrome Coronavirus 2.

Publication year: 2020

Journal: Journal of the Pediatric Infectious Diseases Society

Authors: Department of Anesthesia and Critical Care Medicine, Division of Critical Care Medicine, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania, USA.

Origin country: United States

Target countries: United States, Canada

DOI: 10.1093/jpids/piaa045

PMID: 32318706

Source: <https://pubmed.ncbi.nlm.nih.gov/32318706/>

J Pediatric Infect Dis Soc J Pediatric Infect Dis Soc 3817 pheoup 101586049 jpids Journal of the Pediatric Infectious Diseases Society 2048-7193 2048-7207 pmc-is-collection-domain yes pmc-collection-title Oxford University Press - PMC COVID-19 Collection PMC7188128 PMC7188128.1 7188128 7188128 32318706 10.1093/jpids/piaa045 piaa045 1 Original Article AcademicSubjects/MED00670 AcademicSubjects/MED00290 Multicenter initial guidance on use of antivirals for children with COVID-19/SARS-CoV-2 Chiotos Kathleen 1 2 3 Hayes Molly 3 Kimberlin David W 4 Jones Sarah B 5 6 James Scott H 4 Pinninti Swetha G 4 Yarbrough April 7 Abzug Mark J 8 MacBrayne Christine E 9 Soma Vijaya L 10 Dulek Daniel E 11 Vora Surabhi B 12 Waghmare Alpna 12 13 Wolf Joshua 14 Olivero Rosemary 15 Grapentine Steven 16 Wattier Rachel L 17 Bio Laura 18 Cross Shane J 19 Dillman Nicholas O 20 <http://orcid.org/0000-0001-5015-8146> Downes Kevin J 2 Timberlake Kathryn 21 Young Jennifer 22 Orscheln Rachel C 23 Tamma Pranita D 24 Schwenk Hayden T 25 Zachariah Philip 26 Aldrich Margaret 27 Goldman David L 27 Groves Helen E 28 Lamb Gabriella S 29 Tribble Alison C 30 Hersh Adam L 31 Thorell Emily A 31 Denison Mark R 11 Ratner Adam J 10 32 Newland Jason G 23 Nakamura Mari M 6 29 1 Department of Anesthesia and Critical Care Medicine, Division of Critical Care Medicine, Children's Hospital of Philadelphia, Philadelphia, United States 2 Department of Pediatrics, Division of Infectious Diseases , Children's Hospital of Philadelphia, Philadelphia, United States 3 Antimicrobial Stewardship Program, Children's Hospital of Philadelphia, Philadelphia, United States 4 Department of Pediatrics, Division of Pediatric Infectious Diseases , University of Alabama at Birmingham, Birmingham, United States 5 Department of Pharmacy, Boston Children's Hospital, Boston, United States 6 Antimicrobial Stewardship Program, Boston Children's Hospital, Boston, United States 7 Department of Pharmacy, Children's of Alabama, Birmingham, United States 8 Department of Pediatrics, Division of Infectious Diseases , University of Colorado School of Medicine and Children's Hospital Colorado, Aurora, United States 9 Department of Pharmacy, Children's Hospital Colorado, Aurora, United States 10 Department of Pediatrics, Division of Infectious Diseases , New York University Grossman School of Medicine and Hassenfeld Children's Hospital, New York, United States 11 Department of Pediatrics, Division of Infectious Diseases , Vanderbilt University and Monroe Carell Jr. Children's Hospital, Nashville, United States 12 Department of Pediatrics, Division of Pediatric Infectious Diseases , University of Washington, Seattle Children's Hospital, Seattle, United States 13 Vaccine and Infectious Diseases Division, Fred Hutchinson Cancer Research Center , Seattle, United States 14 Department of Infectious Diseases, St. Jude Children's Research Hospital, Memphis, United States 15 Department of Pediatrics and Human Development, Section of Infectious Diseases, Helen DeVos Children's Hospital of Spectrum Health, Michigan State College of Human Medicine, Grand Rapids, United States 16 Department of Pharmacy, UCSF Benioff Children's Hospital, San Francisco, United States 17 Department of Pediatrics, Division of Infectious Diseases and Global Health, University of California, San Francisco, San Francisco, United States 18 Department of Pharmacy, Lucile Packard Children's Hospital Stanford, Stanford,

United States 19 Department of Pharmaceutical Sciences, St. Jude Children's Research Hospital, Memphis, United States 20 Department of Pharmacy, CS Mott Children's Hospital, Ann Arbor, United States 21 Department of Pharmacy, The Hospital for Sick Children, Toronto, Canada 22 Department of Pharmacy, St. Louis Children's Hospital, St. Louis, United States 23 Department of Pediatrics, Division of Infectious Diseases, Washington University and St. Louis Children's Hospital, St. Louis, United States 24 Department of Pediatrics, Division of Infectious Diseases, Johns Hopkins University School of Medicine, Baltimore, United States 25 Department of Pediatrics, Division of Infectious Diseases, Stanford University School of Medicine and Lucile Packard Children's Hospital Stanford, Stanford, United States 26 Department of Pediatrics, Division of Infectious Diseases, Columbia University, New York, United States 27 Department of Pediatrics, Division of Infectious Diseases, Children's Hospital at Montefiore, New York, United States 28 Department of Pediatrics, Division of Infectious Diseases, Hospital for Sick Children, Toronto, Canada 29 Department of Pediatrics, Division of Infectious Diseases, Boston Children's Hospital, Boston, United States 30 Department of Pediatrics, Division of Infectious Diseases, University of Michigan and CS Mott Children's Hospital, Ann Arbor, United States 31 Department of Pediatrics, Division of Infectious Diseases, University of Utah and Primary Children's Hospital, Salt Lake City, United States 32 Department of Microbiology, New York University Grossman School of Medicine, New York, United States Corresponding Author: Mari M. Nakamura, MD, MPH, Antimicrobial Stewardship Program, Boston Children's Hospital, 300 Longwood Avenue, Mailstop BCH 3052, Boston, MA 02115, 617-355-1561, mari.nakamura@childrens.harvard.edu Alternate Corresponding Author: Kathleen Chiotos, MD, Roberts Center for Pediatric Research, 2716 South Street, Room 10292, Philadelphia, PA 19146, chiotosk@email.chop.edu 22 4 2020 356696 p1aa045 15 4 2020 22 04 2020 29 04 2020 30 04 2020 © The Author(s) 2020. Published by Oxford University Press on behalf of The Journal of the Pediatric Infectious Diseases Society. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com. 2020 This article is published and distributed under the terms of the Oxford University Press, Standard Journals Publication Model (https://academic.oup.com/journals/pages/open_access/funder_policies/chorus/standard_publication_model) This article is made available via the PMC Open Access Subset for unrestricted re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for the duration of the COVID-19 pandemic or until permissions are revoked in writing. Upon expiration of these permissions, PMC is granted a perpetual license to make this article available via PMC and Europe PMC, consistent with existing copyright protections. Abstract Background Although Coronavirus Disease 2019 (COVID-19) is mild in nearly all children, a small proportion of pediatric patients develops severe or critical illness. Guidance is therefore needed regarding use of agents with potential activity against severe acute respiratory syndrome coronavirus 2 in pediatrics.

A panel of pediatric infectious diseases physicians and pharmacists from 18 geographically diverse North American institutions was convened. Through a series of teleconferences and web-based surveys, a set of guidance statements was developed and refined based on review of best available evidence and expert opinion.

Given the typically mild course of pediatric COVID-19, supportive care alone is suggested for the overwhelming majority of cases. The panel suggests a decision-making framework for antiviral therapy that weighs risks and benefits based on disease severity as indicated by respiratory support needs, with consideration on a case-by-case basis of potential pediatric risk factors for disease progression. If an antiviral is used, the panel suggests remdesivir as the preferred agent. Hydroxychloroquine could be considered for patients who are not candidates for remdesivir or when remdesivir is not available. Antivirals should preferably be used as part of a clinical trial if available.

Antiviral therapy for COVID-19 is not necessary for the great majority of pediatric patients. For those rare children who develop severe or critical disease, this guidance offer an approach for decision-making regarding antivirals, informed by available data. As evidence continues to evolve rapidly, the need for updates to the guidance is anticipated.