

We gratefully acknowledge the following Authors from the Originating laboratories responsible for obtaining the specimens, as well as the Submitting laboratories where the genome data were generated and shared via GISAID, on which this research is based.

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EPI_ISL_434717, EPI_ISL_434731, EPI_ISL_434732, EPI_ISL_434758, EPI_ISL_434760, EPI_ISL_434766, EPI_ISL_434775, EPI_ISL_434777, EPI_ISL_434788, EPI_ISL_434797, EPI_ISL_434801, EPI_ISL_434809, EPI_ISL_434810, EPI_ISL_434812, EPI_ISL_434813, EPI_ISL_434814, EPI_ISL_434825, EPI_ISL_434826, EPI_ISL_434827, EPI_ISL_434828, EPI_ISL_434829, EPI_ISL_434831, EPI_ISL_434835, EPI_ISL_434836, EPI_ISL_434838, EPI_ISL_434840, EPI_ISL_434849, EPI_ISL_434854, EPI_ISL_434855, EPI_ISL_434862, EPI_ISL_434867, EPI_ISL_434872, EPI_ISL_434873, EPI_ISL_434882, EPI_ISL_434884, EPI_ISL_434886, EPI_ISL_434887, EPI_ISL_434891, EPI_ISL_434892, EPI_ISL_434896, EPI_ISL_434897, EPI_ISL_434902, EPI_ISL_434904, EPI_ISL_434905, EPI_ISL_434907, EPI_ISL_434916, EPI_ISL_434923, EPI_ISL_434924, EPI_ISL_434925, EPI_ISL_434932, EPI_ISL_434934, EPI_ISL_434953, EPI_ISL_434961, EPI_ISL_434964, EPI_ISL_434967, EPI_ISL_434969, EPI_ISL_434971, EPI_ISL_434974, EPI_ISL_434978, EPI_ISL_434981, EPI_ISL_434982, EPI_ISL_434983, EPI_ISL_434986, EPI_ISL_434987, EPI_ISL_435006, EPI_ISL_435010, EPI_ISL_435011, EPI_ISL_435013, EPI_ISL_435014, EPI_ISL_435015, EPI_ISL_435018, EPI_ISL_435026, EPI_ISL_435029			
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EPI_ISL_444530, EPI_ISL_444539, EPI_ISL_444543, EPI_ISL_444549, EPI_ISL_444555, EPI_ISL_444559, EPI_ISL_444561, EPI_ISL_444562, EPI_ISL_444563, EPI_ISL_444564, EPI_ISL_444565, EPI_ISL_444566, EPI_ISL_444567, EPI_ISL_444569, EPI_ISL_444572, EPI_ISL_444573, EPI_ISL_444577, EPI_ISL_444585, EPI_ISL_444588, EPI_ISL_444594, EPI_ISL_444596, EPI_ISL_444597, EPI_ISL_444602, EPI_ISL_444603, EPI_ISL_444604			Ramon Lorenzo-Redondo, Hannah H. Nam, Scott C. Roberts, Lacy M. Simons, Chad J. Achenbach, Lawrence J. Jennings, Chao Qi, Alan R. Hauser, Michael G. Ison, Judd F. Hultquist, Egon A. Ozer
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EPI_ISL_452111	FL Bureau of Public Health Laboratories	Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Yan Li, Anna Montmayeur, Ying Tao, Krista Queen, Jing Zhang, Anna Uehara, Clinton R. Paden, Rachel Marine, Mary S. Keckler, Alison S. Laufer Halpin, Haibin Wang, Christopher A. Elkins, Zachary Weiner, Suxiang Tong
EPI_ISL_452113	MN Department of Health	Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Yan Li, Anna Montmayeur, Ying Tao, Krista Queen, Jing Zhang, Anna Uehara, Clinton R. Paden, Rachel Marine, Mary S. Keckler, Alison S. Laufer Halpin, Haibin Wang, Christopher A. Elkins, Zachary Weiner, Suxiang Tong
EPI_ISL_452115	Texas DSHS Lab Services	Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Yan Li, Anna Montmayeur, Ying Tao, Krista Queen, Jing Zhang, Anna Uehara, Clinton R. Paden, Rachel Marine, Mary S. Keckler, Alison S. Laufer Halpin, Haibin Wang, Christopher A. Elkins, Zachary Weiner, Suxiang Tong
EPI_ISL_452125	Georgia Department of Health	Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Jing Zhang, Anna Montmayeur, Yan Li, Ying Tao, Krista Queen, Anna Uehara, Clinton R. Paden, Rachel Marine, Mary S. Keckler, Alison S. Laufer Halpin, Haibin Wang, Christopher A. Elkins, Zachary Weiner, Suxiang Tong
EPI_ISL_452131	IN State Department of Health Laboratory Services	Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Jing Zhang, Anna Montmayeur, Yan Li, Ying Tao, Krista Queen, Anna Uehara, Clinton R. Paden, Rachel Marine, Mary S. Keckler, Alisong S. Laufer Halpin, Haibin Wang, Christopher A. Elkins, Zachary Weiner, Suxiang Tong
EPI_ISL_452268, EPI_ISL_452325	Michigan Department of Health and Human Services, Bureau of Laboratories	Michigan Department of Health and Human Services, Bureau of Laboratories	Blankenship HM, Riner D, Soehnlen MK
EPI_ISL_454384, EPI_ISL_454387	UPMC Clinical Microbiology Laboratory	Microbial Genome Sequencing Center, Microbial Genomic Epidemiological Laboratory	Mustapha M. Mustapha, Jane W. Marsh, Dan Snyder, Marissa P. Griffith, Stephanie L. Mitchell, Vatsala R. Srinivasa, Kady D. Waggle, Chinelo Ezeonwuku, Vaughn S. Cooper, Lee H. Harrison
EPI_ISL_454431	Maryland Department of Health Laboratories Administration	Maryland Department of Health Laboratories Administration	MDH Laboratories Administration
EPI_ISL_454638, EPI_ISL_454639	Humboldt County Public Health Laboratory	Chan-Zuckerberg Biohub	CZB Cliahub Consortium
EPI_ISL_454800, EPI_ISL_454801, EPI_ISL_454806, EPI_ISL_454808, EPI_ISL_454817, EPI_ISL_454824, EPI_ISL_454826	Dirk Dittmer	Dirk Dittmer	Bailey,A.G., Caro-Vegas,C.P., Dittmer,D., Eason,A.B., Juarez,A., Landis,J.T., McNamara,R.P., Miller,M.B., Moorad,R., Pluta,L.J., Seltzer,T.A., Thompson,C., Vahrson,W., Villamor,F.

EPI_ISL_455355, EPI_ISL_455356, EPI_ISL_455360 EPI_ISL_455998	Emory Molecular Diagnostics Laboratory, Emory Healthcare LSUHS Emerging Viral Threat Laboratory	Piantadosi Lab, Emory Department of Pathology Microbial Genome Sequencing Center	Ahmed Babiker, Anne Piantadosi John A. Vanchiere, Jeremy P. Kamil, Rona S. Scott, Camille F. Abshire, Abida Siddiqua, Byeong-Jae Lee, Chan-ki Min, Md Maksudul Alam, Monica Gestal-Carteles, Edna Ondari, Adam Greer, Malgorzata Bienkowska-Haba, Katarzyna Zwolinska, Michelle M. Arnold, Jason M. Bodily, Andrew D. Yurochko, Paul M. Weinberger, Christopher G. Kevil, Martin J. Sapp, Daniel J. Snyder, Vaughn S. Cooper
EPI_ISL_456172, EPI_ISL_456174, EPI_ISL_456200	LabPLUS	Institute of Environmental Science and Research (ESR)	Matt Storey, Xiaoyun Ren, Anja Werno, Antje van der Linden, Arlo Upton, Chris Mansell, David Hammer, Dragana Drinkovic, Erasmus Smit, Gary McAuliffe, Hana Sofia Andersson, James Ussher, Jill Sherwood, Josh Freeman, Julia Howard, Juliet Elvy, Mary DeAlmeida, Matt Blakiston, Matthew Rogers, Max Bloomfield, Michael Addidle, Michelle Balm, Sally Roberts, Sarah Jefferies, Sharmini Muttaiyah, Susan Morpeth, Susan Taylor, Timothy Blackmore, Vani Sathyendran, Veronica Playle, Virginia Hope, Erasmus Smit, Lauren Jelly, Joep de Lig
EPI_ISL_457756, EPI_ISL_457762, EPI_ISL_457767, EPI_ISL_457768, EPI_ISL_457782, EPI_ISL_457783, EPI_ISL_457789, EPI_ISL_457807, EPI_ISL_457813 EPI_ISL_460008	Johns Hopkins Hospital Department of Pathology	Johns Hopkins Hospital Department of Pathology	Peter M. Thielen, Thomas Mehoke, Shirlee Wohl, Srividya Ramakrishnan, Melanie Kirsche, Amanda Ernlund, Craig Howser, Kristina Zudock, Oluwaseun Falade-Nwulia, Norah Sadowski, Paul Morris, Mark Hopkins, Yunfan Fan, Nidia Trovao, Victoria Gniazdowski, Michael C. Schatz, Stuart C. Ray, Winston Timp, Heba H. Mostafa
EPI_ISL_460052, EPI_ISL_460072	Michigan Department of Health and Human Services, Bureau of Laboratories Minnesota Department of Health, Public Health Laboratory	Michigan Department of Health and Human Services, Bureau of Laboratories Minnesota Department of Health, Public Health Laboratory	Blankenship HM, Riner D, Soehnlén MK Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_460114, EPI_ISL_460170, EPI_ISL_460179, EPI_ISL_460186, EPI_ISL_460205, EPI_ISL_460232, EPI_ISL_460285, EPI_ISL_460467 EPI_ISL_462350	Massachusetts General Hospital	Infectious Disease Program, Broad Institute of Harvard and MIT	Lemieux,J.E., Siddle,K.J., Shaw,B., Adams,G., Pierce,V., Turbett,S., Anahtar,M., Brandaj,J., Slater,D., Harris,J., Lin,A.E., Gladden-Young,A., Lagerborg,K., Rudy,M., DeRuff,K., Carter,A., Normandin,E., Bauer,M., Reilly,S., Tomkins-Tinch,C., Loreth,C., Chaluvadi,S., Neumann,A., Cusick,C., Chapman,S.B., Gnirke,A., Flowers,K., Cerrato,F., Birren,B.W., Gallagher,G., Smole,S., Park,D.J., MacInnis,B.L., Ryan,E., LaRocque,R., Rosenberg,E., Sabeti,P.C.
EPI_ISL_462922	National Public Health Laboratory, National Centre for Infectious Diseases Wyoming Public Health Laboratory	National Public Health Laboratory, National Centre for Infectious Diseases Center for Global Health, University of New Mexico Health Sciences Center	Mak TM, Octavia S, Chavatte JM, Cui L, Lin RTP Daryl Domman, Kurt Schwalm, Rob Christensen, Wanda Manley, Cari Sloma, Noah Hull, Darrell Dinwiddle
EPI_ISL_462991 EPI_ISL_463740	Microbiology Division Mohammed Bin Rashid University of Medicine and Health Sciences	Microbiology Division Al Jalila Genomics Center	Flores,H. Ahmad Abou Tayoun, Tom Loney, Hamda Khansaheb, Sathishkumar Ramaswamy, Divinlal Harilal, Zulfa Omar Deesi, Rupa Murthy Varghese, Hanan Al Suwaidi, Abdulmajeed Alkhaja, Mohammed Uddin, Rifat Hamoudi, RabiH Halwani, Abiola Catherine Senok, Qutayba Hamid, Norbert Nowotny, Alawi Alsheikh-Ali
EPI_ISL_463993 EPI_ISL_464093	Toronto Invasive Bacterial Diseases Network Laboratory Medicine	McMaster University Department of Laboratory Medicine, Lin-Kou Chang Gung Memorial Hospital, Taoyuan, Taiwan	Allison McGeer, Patryk Aftanas, Angel Li, Kuganya Nirmalarajah, Samira Mubareka, Andrew G. McArthur Kuo-Chien Tsao, Yu-Nong Gong, Shu-Li Yang, Yi-Chun Liu, Chung-Guei Huang, Mei-Jen Hsiao, Po-Wei Huang, Cheng-Ta Yang, Cheng-Hsun Chiu, Peng-Nien Huang, Kuo-Ming Lee, Guang-Wu Chen, Shin-Ru Shih
EPI_ISL_464167	VI-US Virgin Islands Department of Health	Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Krista Queen, Ying Tao, Jing Zhang, Yan Li, Anna Uehara, Clinton R. Paden, Mary S. Keckler, Alison S. Laufer Halpin, Haibin Wang, Jasmine Padilla, Justin Lee, Christopher A. Elkins, Suixiang Tong
EPI_ISL_465686 EPI_ISL_466716 EPI_ISL_467387	Hôpital de Hull BCCDC Public Health Laboratory NYU Langone Health	Laboratoire de santé publique du Québec BCCDC Public Health Laboratory Departments of Pathology and Medicine, New York University School of Medicine	Sandrine Moreira, Ioannis Ragousis, Guillaume Bourque, Jesse Shapiro, Mark Lathrop and Michel Roger on behalf of the CoVSeQ research group (http://covseq.ca/researchgroup) Richard Harrigan, Hope Lapointe, Jinny Choi, Kimia Kamelian, John Tyson,Terry Snutch, Linda Hoang, Inna Sekirov, Paul Levett, Mel Krajden, Natalie Prystajecy Maria Aguero-Rosenfeld, Brendan Belovarac, Margaret Black, Ludovic Boytard, John Cadley, Paolo Cotzia, John Chen, Dacia Dimartino, Xiaojun Feng, Tatyana Gindin, Emily Guzman, Adriana Heguy, Megan Hogan, Emily Huang, George Jour, Mireza Khodadadi-Jamayran, Lawrence H. Lin, Raven Luther, Andrew Lytle, Christian Marier, Matthew T. Maurano, Mark J. Mulligan, Peter Meyn, Raquel Ordóñez Ciriza, Iman Osman, Gared Pinnell, Vanessa Raabe, Sitharam Ramaswami, Amy Rapkiewicz, Andre M. Ribeiro-dos-Santos, Marie Samanovic-Golden, Antonio Serrano, Guomiao Shen, Matija Snuderl, Theodore Vougiouklakis, Nick Vulpescu, Joel Westby, Paul Zapplie, Yutong Zhang
EPI_ISL_467814, EPI_ISL_467845, EPI_ISL_467846, EPI_ISL_467847, EPI_ISL_467848, EPI_ISL_467849, EPI_ISL_467855, EPI_ISL_467862, EPI_ISL_467871, EPI_ISL_467897, EPI_ISL_467910, EPI_ISL_467919, EPI_ISL_467920, EPI_ISL_467921 see above	Quest Diagnostics SA Pathology Humboldt County Public Health Laboratory	Quest Diagnostics SA Pathology Chan-Zuckerberg Biohub	Anderson,B.P., Rosenthal,S.H., Gerasimova,A., Kagan,R.M. and Owen, R. Lex Leong, Chuan Kok Lim, Mark Turra, Ivan Bastian, Geoff Higgins CZB Cliahub Consortium
EPI_ISL_468455, EPI_ISL_468460 EPI_ISL_468563	Quest Diagnostics	Quest Diagnostics	Anderson,B.P., Rosenthal,S.H., Gerasimova,A., Kagan,R.M. and Owen, R.
EPI_ISL_471213, EPI_ISL_471226, EPI_ISL_471258	Wisconsin State Laboratory of Hygiene Communicable Disease Division	Wisconsin State Laboratory of Hygiene Communicable Disease Division	Kelsey R. Florek, Abigail C. Shockey
EPI_ISL_471858	Michigan Department of Health and Human Services, Bureau of Laboratories	Michigan Department of Health and Human Services, Bureau of Laboratories	Blankenship HM, Riner D, Soehnlén MK
EPI_ISL_475201 EPI_ISL_475612, EPI_ISL_475686	Nebraska Public Health Laboratory Cedars-Sinai Medical Center, Department of Pathology & Laboratory Medicine, Molecular Pathology Laboratory	UNMC COVID-19 Response Team Cedars-Sinai Medical Center, Molecular Pathology Laboratory of Department of Pathology & Laboratory Medicine and Genomic Core	UNMC COVID-19 Response Team Wenjuan Zhang, John Paul Govindavari, Brian Davis, Stephanie Chen, Jong Taek Kim, Jianbo Song, Jean Lopategui, Jasmine T Plummer, Eric Vail
EPI_ISL_475952	National Public Health Laboratory, National Centre for Infectious Diseases	National Public Health Laboratory, National Centre for Infectious Diseases	Mak TM, Octavia S, Chavatte JM, Cui L, Lin RTP
EPI_ISL_476909 EPI_ISL_477857	UW Virology Lab West of Scotland Specialist Virology Centre, NHSGGC / MRC-University of Glasgow Centre for Virus Research	UW Virology Lab COVID-19 Genomics UK (COG-UK) Consortium	Pavitra Roychoudhury, Hong Xie, Lasata Shrestha, Amin Addetia, Truong Nguyen, Victoria M Rachleff, Meei-Li Huang, Keith R Jerome, Alexander Greninger Ana da Silva Filipe, Natasha Johnson, Kathy Smollett, Daniel Mair, Stephen Carmichael, Lily Tong, Jenna Nichols, Elihu Aranday-Cortes, Kirstyn Brunker, Yasmin Parr, Alice Broos, Kyriaki Nomikou; Sarah McDonald, Marc Niebel, Patawee Asamaphan; Richard Orton, Joseph Hughes, Sreenu Vattipally, David L Robertson; Alasdair MacLean, Rory Gunson; Kathy Li, Natasha Jesudason, Rajiv Shah, James Shepherd, Antonia Ho, Emma Thomson
EPI_ISL_478535	Northumbria University / South Tees Hospitals NHS Foundation Trust / North Cumbria Integrated Care NHS Foundation Trust / North Tees and Hartlepool NHS Foundation Trust / Newcastle Hospitals NHS Foundation Trust	COVID-19 Genomics UK (COG-UK) Consortium	Darren L Smith,Andrew Nelson,Matthew Bashton,Greg R Young,Joshua Loh,John Allan,Mohammad A Tariq,Giles S Holt,Gary Black,Wen C Yew,Lynn Dover,Paul Baker,Steve Liggett,Sarah Essex,Jane Greenaway,Debra Padgett,Clive Graham,Garren Scott,Edward Barton,Emma Swindells,Brendan Payne,Jennifer Collins,Yusri Taha,Gary Eltringham
EPI_ISL_479763	University of Miami Immunology and Histocompatibility Laboratory	University of Miami Immunology and Histocompatibility Laboratory	Emilio Margolles-Clark, PhD and Phillip Ruiz, MD, PhD
EPI_ISL_480387	University of Wisconsin-Madison AIDS Vaccine Research Laboratories	University of Wisconsin-Madison AIDS Vaccine Research Laboratories	Gage Moreno, Katarina Braun, et al. AIDS Vaccine Research Laboratories
EPI_ISL_480792, EPI_ISL_480793, EPI_ISL_480844, EPI_ISL_480863, EPI_ISL_480866, EPI_ISL_480878, EPI_ISL_480890, EPI_ISL_480891, EPI_ISL_480919 EPI_ISL_481272, EPI_ISL_481276 EPI_ISL_481756	Florida Bureau of Public Health Laboratories Maryland Department of Health Dr. Georges-L.-Dumont University Hospital Centre	Florida Bureau of Public Health Laboratories Maryland Department of Health National Microbiology Laboratory	Sarah Schmedes, Jason Blanton Keller,E. Anna Majer, Shari Tyson, Grace Seo, Kristyn Burak, Philip Mabon, Elsie Grudeski, Rhiannon Huzarewicz, Russell Mandes, Jennifer Tanner, Natalie Knox, Morag Graham, Gary Van Domselaar, Richard Garceau, Guillaume Desnoyers, Nathalie Bastien, Yan Li, Timothy Booth
EPI_ISL_483012	Minnesota Department of Health, Public Health Laboratory	Minnesota Department of Health, Public Health Laboratory	Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_484563	West of Scotland Specialist Virology Centre, NHSGGC / MRC-University of Glasgow Centre for Virus Research	COVID-19 Genomics UK (COG-UK) Consortium	Ana da Silva Filipe, Natasha Johnson, Kathy Smollett, Daniel Mair, Stephen Carmichael, Lily Tong, Jenna Nichols, Elihu Aranday-Cortes, Kirstyn Brunker, Yasmin Parr, Alice Broos, Kyriaki Nomikou; Sarah McDonald, Marc Niebel, Patawee Asamaphan; Richard Orton, Joseph Hughes, Sreenu Vattipally, David L Robertson; Alasdair MacLean, Rory Gunson; Kathy Li, Natasha Jesudason, Rajiv Shah, James Shepherd, Antonia Ho, Emma Thomson
EPI_ISL_484710, EPI_ISL_484731, EPI_ISL_484735, EPI_ISL_484751, EPI_ISL_484752, EPI_ISL_484769 EPI_ISL_485845	University of Michigan Clinical Microbiology Laboratory Virginia DCLS	Lauring Lab, University of Michigan, Department of Microbiology and Immunology Virginia DCLS	Valesano et al. Virginia DCLS
EPI_ISL_489710, EPI_ISL_489733, EPI_ISL_489737, EPI_ISL_489738, EPI_ISL_489739, EPI_ISL_489740, EPI_ISL_489768, EPI_ISL_489769, EPI_ISL_489770, EPI_ISL_489771, EPI_ISL_489772, EPI_ISL_489773, EPI_ISL_489778, EPI_ISL_489780, EPI_ISL_489792, EPI_ISL_489817, EPI_ISL_489818, EPI_ISL_489819 see above	Florida Bureau of Public Health Laboratories West of Scotland Specialist Virology Centre, NHSGGC / MRC-University of Glasgow Centre for Virus Research	Florida Bureau of Public Health Laboratories COVID-19 Genomics UK (COG-UK) Consortium	Sarah Schmedes, Jason Blanton Ana da Silva Filipe, Natasha Johnson, Kathy Smollett, Daniel Mair, Stephen Carmichael, Lily Tong, Jenna Nichols, Elihu Aranday-Cortes, Kirstyn Brunker, Yasmin Parr, Alice Broos, Kyriaki Nomikou; Sarah McDonald, Marc Niebel, Patawee Asamaphan; Richard Orton, Joseph Hughes, Sreenu Vattipally, David L Robertson; Alasdair MacLean, Rory Gunson; Kathy Li, Natasha Jesudason, Rajiv Shah, James Shepherd, Antonia Ho, Emma Thomson
EPI_ISL_491097, EPI_ISL_491098, EPI_ISL_491099, EPI_ISL_491100, EPI_ISL_491101, EPI_ISL_491102, EPI_ISL_491103, EPI_ISL_491104, EPI_ISL_491108, EPI_ISL_491109	SC Department of Health and Environmental Control	SC Department of Health and Environmental Control	Flores,H.
EPI_ISL_491909, EPI_ISL_491913, EPI_ISL_491921, EPI_ISL_491923 EPI_ISL_492119, EPI_ISL_492120	Naval Infectious Diseases Diagnostic Laboratory SA Pathology	Naval Medical Research Center Biological Defense Research Directorate SA Pathology	Logan Voegtly, Regina Cer, Lindsay Glang, Victor Sugiharto, Francisco Malgon Bautista, Hua Wei Chen, Dessiree Pena-Gomez, Megan Schilling, Adrian Paskey, Kyle Long, Mark Simons, Kimberly Bishop-Lilly Lex Leong, Chuan Kok Lim, Mark Turra, Ivan Bastian, Geoff Higgins
EPI_ISL_493203, EPI_ISL_493204, EPI_ISL_493206	Virology Lab,Department of Pathology, National Cheng Kung University Hospital	Virology Lab,Department of Pathology, National Cheng Kung University Hospital	Huey-Pin Tsal, et al
EPI_ISL_494540, EPI_ISL_494541	Quest Diagnostics	Quest Diagnostics	Anderson,B.P., Rosenthal,S.H., Gerasimova,A., Kagan,R.M. and Owen, R.

EPI_ISL_495356, EPI_ISL_495391, EPI_ISL_495393 EPI_ISL_495577	Florida Bureau of Public Health Laboratories University of Michigan Clinical Microbiology Laboratory	Florida Bureau of Public Health Laboratories Lauring Lab, University of Michigan, Department of Microbiology and Immunology	Sarah Schmedes, Jason Blanton Valesano et al.
EPI_ISL_495619	Minnesota Department of Health, Public Health Laboratory	Minnesota Department of Health, Public Health Laboratory	Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_496610, EPI_ISL_496616, EPI_ISL_496631, EPI_ISL_496669, EPI_ISL_496706, EPI_ISL_496753, EPI_ISL_496756, EPI_ISL_496767, EPI_ISL_496884, EPI_ISL_496892, EPI_ISL_496895, EPI_ISL_496896, EPI_ISL_496898 see above	Gorgas Memorial Laboratory of Health Studies	Gorgas Memorial Laboratory of Health Studies	Danilo Franco, Claudia Gonzalez Sandra Lopez-Verges, Alexander A Martinez
EPI_ISL_500513, EPI_ISL_500515, EPI_ISL_500535 EPI_ISL_500641, EPI_ISL_500697	Mayo Clinic Laboratories Area of Virology, Serology and Virology Division (SAVID), New South Wales Health Pathology Randwick	University of Washington Virology Lab Area of Virology, Serology and Virology Division (SAVID), New South Wales Health Pathology Randwick	Pavitra Roychoudhury, Hong Xie, Lasata Shrestha, Amin Addetia, Truong Nguyen, Victoria M Rachleff, Meei-Li Huang, Keith R Jerome, Alexander Greninger Rawlinson, W.
EPI_ISL_501074, EPI_ISL_501075 EPI_ISL_501167	Mayo Clinic Laboratories Baylor College of Medicine	University of Washington Virology Lab Baylor College of Medicine: HGSC	Pavitra Roychoudhury, Hong Xie, Lasata Shrestha, Amin Addetia, Truong Nguyen, Victoria M Rachleff, Meei-Li Huang, Keith R Jerome, Alexander Greninger Vasanthi Avadhanula, Erin Nicholson, David Henke, Pedro Piedra, Harsha Doddapaneni, Donna Muzny, Qingchang Meng, Hsu Chao, Zeineen Momin, Hua Shen, George Weissenberger, Kavya Kottapalli, Yimiti Meiheerguli, Sejal Salvi, Ginger Metcalf, Vipin Menon, Sara J.J. Cregeen, Matthew C. Ross, Tulin Ayvaz, Richard Suggang, Kristi L. Hoffman, Matthew Wong, Joseph F. Petrosino
EPI_ISL_507425, EPI_ISL_507637, EPI_ISL_507647, EPI_ISL_507672, EPI_ISL_507870, EPI_ISL_507912, EPI_ISL_507929 EPI_ISL_508143	Michigan Department of Health and Human Services, Bureau of Laboratories SA Pathology	Michigan Department of Health and Human Services, Bureau of Laboratories SA Pathology	Blankenship HM, Riner D, Soehnlen MK Lex Leong, Chuan Kok Lim, Mark Turra, Ivan Bastian, Geoff Higgins
EPI_ISL_508788, EPI_ISL_508799, EPI_ISL_508801, EPI_ISL_508806, EPI_ISL_508821, EPI_ISL_508849, EPI_ISL_508852, EPI_ISL_508855	Florida Bureau of Public Health Laboratories	Florida Bureau of Public Health Laboratories	Sarah Schmedes, Jason Blanton
EPI_ISL_509484, EPI_ISL_509485, EPI_ISL_509486 EPI_ISL_509496	Maryland Department of Health Area of Virology, Serology and Virology Division (SAVID), New South Wales Health Pathology Randwick	Maryland Department of Health Area of Virology, Serology and Virology Division (SAVID), New South Wales Health Pathology Randwick	Keller,E. Rawlinson, W.
EPI_ISL_509701	Guatemala Ministry of Public Health	Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Ying Tao, Jing Zhang, Krista Queen, Anna Uehara, Yan Li, Clinton Paden, Haibin Wang, Suxiang Tong
EPI_ISL_509734, EPI_ISL_509740, EPI_ISL_509772 EPI_ISL_509936	Florida Bureau of Public Health Laboratories University of Wisconsin-Madison AIDS Vaccine Research Laboratories	Florida Bureau of Public Health Laboratories University of Wisconsin-Madison AIDS Vaccine Research Laboratories	Sarah Schmedes, Jason Blanton Gage Moreno, Katarina Braun, et al. AIDS Vaccine Research Laboratories
EPI_ISL_510627, EPI_ISL_510636	Division of Viral Diseases, Center for Laboratory Control of Infectious Diseases, Korea Centers for Diseases Control and Prevention	Division of Viral Diseases, Center for Laboratory Control of Infectious Diseases, Korea Centers for Diseases Control and Prevention	Jeong-Min Kim, Yoon-Seok Chung, Namjoo Lee, Sang Hee Woo, Hye-Jun Jo, Heui Man Kim, Jun-Sub Kim, Myung Guk Han
EPI_ISL_511866, EPI_ISL_511869, EPI_ISL_511871, EPI_ISL_511872 EPI_ISL_512141	Johns Hopkins Hospital Department of Pathology Alaska State Virology Laboratory	Johns Hopkins Hospital Department of Pathology Alaska State Virology Laboratory	Peter M. Thielen, Thomas Mehoke, Shirlee Wohl, Srividya Ramakrishnan, Melanie Kirsche, Amanda Ernlund, Craig Howser, Kristina Zudock, Oluwaseun Falade-Nwulia, Norah Sadowski, Paul Morris, Mark Hopkins, Yunfan Fan, Nidia Trovao, Victoria Gniazdowski, Michael C. Schatz, Stuart C. Ray, Winston Timp, Heba H. Mostafa Chen J et al with Pathogenomics group Dagdag R, Redlinger M, Milton E, George W, Kovalenko A, Drown DM, Bortz E
EPI_ISL_512785, EPI_ISL_512786	Public Health, United States Air Force School of Aerospace Medicine	Public Health, United States Air Force School of Aerospace Medicine	Fries,A.C., Purves,S.M., Meyer,J.R., Javorina,A.K., Connors,B.C., Macias,E.A., Lambert,A.W., Chapleau,R.R., Starr,C.R.
EPI_ISL_513442, EPI_ISL_513462 EPI_ISL_514637	Maine HETL M Health Fairview St. Joseph's Hospital	Tewhey Lab, The Jackson Laboratory Minnesota Department of Health, Public Health Laboratory	Matluk,N., Dewey,H., Barter,M., Lynch,R., Munger,H. and Tewhey,R. Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_514639	Mayo Clinic & Mayo Clinic Laboratories	Minnesota Department of Health, Public Health Laboratory	Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_514647	Allina Health Laboratory	Minnesota Department of Health, Public Health Laboratory	Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_514655	Mayo Clinic & Mayo Clinic Laboratories	Minnesota Department of Health, Public Health Laboratory	Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_516238, EPI_ISL_516303, EPI_ISL_516317 EPI_ISL_516656	Michigan Department of Health and Human Services, Bureau of Laboratories Virginia DCLS	Michigan Department of Health and Human Services, Bureau of Laboratories Virginia DCLS	Blankenship HM, Riner D, Soehnlen MK Virginia DCLS
EPI_ISL_516805	Department of Laboratory Medicine, Tan Tock Seng Hospital	Department of Laboratory Medicine, Tan Tock Seng Hospital	Chen YYC, Zair X, Li C, Tang WY, Maurer-Stroh S, Barkham TMS, Nagarajan N, Sessions OM
EPI_ISL_517788	Florida Bureau of Public Health Laboratories	Florida Bureau of Public Health Laboratories	Sarah Schmedes, Jason Blanton
EPI_ISL_518860, EPI_ISL_518863, EPI_ISL_518868, EPI_ISL_518871, EPI_ISL_518875	Mayo Clinic & Mayo Clinic Laboratories	Minnesota Department of Health, Public Health Laboratory	Matt Plumb, Jacob Garfin, and Xiong Wang
EPI_ISL_522829, EPI_ISL_522830, EPI_ISL_522831, EPI_ISL_522832, EPI_ISL_522838	Maryland Department of Health	Maryland Department of Health	Maryland Department of Health Laboratories Administration
EPI_ISL_524053, EPI_ISL_524056, EPI_ISL_524057 EPI_ISL_525338, EPI_ISL_525340	Texas Department of State Health Services Utah Public Health Laboratory	Texas Department of State Health Services Utah Public Health Laboratory	Rashmi Tuladhar, Bonnie Oh, Cara Akrout, Jenny Zhang, Maliha Rahman, Anita Pokharel, Myong Koag, Chun Wang, Rachel Lee, Grace Kubin Erin Young, Kelly Oakeson
EPI_ISL_525611, EPI_ISL_525621, EPI_ISL_525626, EPI_ISL_525630 EPI_ISL_525763	Wadsworth Center, New York State Department of Health TXDSHS	Wadsworth Center, New York State Department of Health TXDSHS	Kirsten St. George, Daryl M. Lamson, Sara Griesemer, Jonathan Plitnick, Navjot Singh, Matthew D. Shudt, Erica Lasek-Nesselquist
EPI_ISL_526553, EPI_ISL_526555, EPI_ISL_526559, EPI_ISL_526564	Florida Bureau of Public Health Laboratories	Florida Bureau of Public Health Laboratories	Jenny Zhang, Rashmi Tuladhar, Bonnie Oh, Maliha Rahman, Anita Pokharel, Myong Koag, Chun Wang, Rachel Lee, Grace Kubin Sarah Schmedes, Jason Blanton
EPI_ISL_526811, EPI_ISL_526815, EPI_ISL_526829 EPI_ISL_527658	Virginia DCLS GA Department of Public Health Laboratory	Virginia DCLS Pathogen Discovery, Respiratory Viruses Branch, Division of Viral Diseases, Centers for Disease Control and Prevention	Virginia DCLS Yan Li, Anna Montmayeur, Jing Zhang, Krista Queen, Ying Tao, Anna Uehara, Rachel Marine, Clinton R. Paden, Haibin Wang, Suxiang Tong
EPI_ISL_529171, EPI_ISL_529172, EPI_ISL_529173, EPI_ISL_529174, EPI_ISL_529175 EPI_ISL_529810	South Carolina Department of Health and Environmental Control Michigan Department of Health and Human Services, Bureau of Laboratories	South Carolina Department of Health and Environmental Control Michigan Department of Health and Human Services, Bureau of Laboratories	Haley V. Flores Blankenship HM, Riner D, Soehnlen MK