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Biotechnology | North America

Key Takeaways From Our 5th COVID-19 Expert Call

We hosted a follow-up call with Dr. Amesh Adalja of the Johns Hopkins University Center for Health Security on his views on the evolving impact of SARS-CoV-2 (COVID-19) and his expectations around testing, potential therapies and risks to relaxing social distancing measures. Dr. Adalja highlighted the importance of positivity rate and monitoring hospital capacity as the country reopens. Dr. Adalja continues to believe SARS-CoV-2 is endemic in the population and cases will continue to grow until there is a vaccine.

- Dr. Adalja emphasizes percent positivity and hospital capacity as key indicators of a potential second wave:** As states begin to re-open, Dr. Adalja expects the number of new cases and deaths from COVID-19 to increase. He is focused on the percent positivity (~9% currently for the US as a whole) and regional hospital capacity as key variables that will ultimately drive the need for a reversal in opening. Given the heterogeneity of the initial outbreak, he believes subsequent lockdowns will be region-specific. New York City continues to be at a higher risk given population density. He noted that initial lockdown measures were needed to slow the rate of hospitalizations and subsequent deaths, but these measures were not intended to decrease the total number of deaths over the full course of the outbreak.
- Remdesivir shortens hospitalization time, but doesn't prevent hospitalizations:** Dr. Adalja highlighted the importance of having a treatment option for severe COVID-19 patients, but noted that remdesivir is ultimately not a "game changer." He also expressed concerns with availability and the federal government's ability to control distribution. He is encouraged by the monoclonal antibody approach and noted positive initial data with convalescent plasma in severely ill patients. Both approaches and remdesivir are limited to hospitalized patients and a true breakthrough will come with the development of a therapy that prevents people from being hospitalized.
- Vaccine availability in 12-18 months is optimistic:** Dr. Adalja believes a small proportion of people will receive the initial vaccine, including healthcare workers and at-risk populations. He does not believe a vaccine will be available by the end of the year. He believes that people who have recovered are protected for some time and it could be as long as ~1 year based on other coronavirus infections.
- Expect consecutive waves until a vaccine is widely available:** Dr. Adalja notes that people might naturally socially distance more as temperatures

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increase, but he expects a greater number of cases in the fall at a minimum. The impact of a second wave could be less as more people get exposed. He noted that places with high positivity rates (i.e., the Bronx) are still far from herd immunity levels, thus he doesn't believe those factors will have a major impact on new waves. Some herd immunity may be helpful, but >60% immunity in a population is necessary to confer protection and the US is not near that level.

- **Transmission rate among children and risk perception:** Dr. Adalja did not initially endorse the closure of schools because he believes the measure adds marginal benefit. There needs to be additional research investigating whether children are magnifiers of disease. He noted that Idaho and Montana schools have begun re-opening. He noted that the systemic inflammatory syndrome being reported in children is extremely rare. Ultimately, he believes everyone will have to weigh the risk of transmission compared to isolation. He expects companies to continue to encourage telework and sees less people flying (especially internationally given the potential quarantine procedures on each end of the flight). Additionally, he believes people at-risk (i.e., comorbidities) may need to take additional precautionary measures until a vaccine is available.

Dr. Adalja is not a member of Morgan Stanley's Research Department. Unless otherwise indicated, his views are his own and may differ from the views of the Morgan Stanley Research Department and from the views of others within Morgan Stanley.

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AVROBIO Inc (AVRO.O)	O (07/16/2018)	\$14.37
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Epizyme Inc (EPZMO)	O (12/05/2019)	\$17.31
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MacroGenics Inc (MGNX.O)	U (11/21/2019)	\$20.34
Nabriva Therapeutics PLC (NBRV.O)	E (03/17/2020)	\$0.61
Rhythm Pharmaceuticals Inc (RYTM.O)	O (09/07/2018)	\$19.53
Schrodinger Inc. (SDGR.O)	E (03/02/2020)	\$48.82
Syndax Pharmaceuticals Inc (SNDX.O)	E (10/29/2018)	\$18.03
Y-mAbs Therapeutics Inc. (YMAB.O)	E (04/29/2020)	\$39.84
Zealand Pharma A/S (ZEAL.O)	O (09/12/2018)	\$34.77
Jeffrey Hung		
Acceleron Pharma Inc (XLRN.O)	O (02/03/2020)	\$101.79
Aprea Therapeutics Inc (APRE.O)	E (10/28/2019)	\$35.00
Cytokinetics Inc (CYTK.O)	O (04/09/2020)	\$15.76
Exelixis Inc. (EXEL.O)	E (03/18/2019)	\$26.00
MyoKardia Inc (MYOK.O)	O (09/10/2018)	\$61.09
Neurocrine Biosciences Inc (NBIX.O)	O (09/10/2018)	\$109.40
NextCure Inc. (NXTC.O)	O (06/03/2019)	\$37.98
Prevail Therapeutics Inc (PRVL.O)	O (07/15/2019)	\$15.91
Ultragenyx Pharmaceutical Inc (RARE.O)	O (03/27/2019)	\$63.84
Viola Bio (VIE.O)	O (10/28/2019)	\$47.20
Voyager Therapeutics Inc (VYGR.O)	E (09/10/2018)	\$11.15
Matthew Harrison		

Alector Inc (ALEC.O)	O (03/04/2019)	\$27.24
Alexion Pharmaceuticals (ALXN.O)	E (12/17/2019)	\$97.34
Amgen Inc. (AMGN.O)	O (12/17/2019)	\$234.82
argenx SE (ARGX.O)	O (01/04/2019)	\$149.05
BeiGene Ltd (6160.HK)		HK\$93.00
BeiGene Ltd (BGNE.O)	O (01/17/2020)	\$156.81
Biogen Inc (BIIB.O)	U (03/22/2019)	\$314.02
Biohaven Pharmaceutical Holding Company (BHMN.N)	E (04/09/2019)	\$47.66
Biomarin Pharmaceutical Inc (BMRN.O)	O (02/07/2017)	\$95.20
Bluebird Bio Inc (BLUE.O)	E (11/03/2017)	\$59.28
Cabaletta Bio Inc (CABAO)	O (11/19/2019)	\$7.66
Denali Therapeutics Inc (DNLI.O)	O (01/02/2018)	\$23.89
Editas Medicine (EDIT.O)	E (02/29/2016)	\$24.71
Evelo Biosciences Inc (EVLO.O)	O (06/04/2018)	\$5.08
Fulcrum Therapeutics Inc (FULC.O)	O (08/12/2019)	\$14.68
Galapagos NV (GLPG.O)	E (12/17/2019)	
Genmab A/S (GMAB.CO)	O (08/12/2019)	DKr 1,890.00
Genmab A/S (GMAB.O)	O (08/12/2019)	\$27.52
Gilead Sciences Inc. (GILD.O)	E (10/01/2015)	\$77.49
Global Blood Therapeutics Inc (GBT.O)	E (03/21/2018)	\$77.25
Imara Inc (IMRA.O)	O (04/06/2020)	\$22.85
Immunomedics Inc (IMMU.O)	E (01/22/2019)	\$32.61
Innoviva Inc (INVA.O)	U (08/14/2014)	\$13.68
Insmid Inc (INSMO)	O (03/21/2018)	\$23.29
Kaleido Biosciences Inc. (KLDO.O)	O (03/25/2019)	\$6.38
Kodiak Sciences Inc (KOD.O)	O (10/29/2018)	\$56.99
Moderna Inc (MRNA.O)	O (01/02/2019)	\$59.25
Regeneron Pharmaceuticals Inc. (REGN.O)	E (10/01/2015)	\$563.40
Regenxbio Inc (RGNX.O)	O (11/09/2017)	\$38.98
Rubius Therapeutics Inc. (RUBY.O)	E (03/13/2020)	\$6.22
SAGE Therapeutics Inc (SAGE.O)	O (02/26/2018)	\$39.20
Sarepta Therapeutics Inc (SRPT.O)	O (08/01/2018)	\$128.00
Seattle Genetics Inc. (SGEN.O)	E (12/10/2019)	\$157.67
Unity Biotechnology Inc. (UBX.O)	O (05/29/2018)	\$7.00
Vertex Pharmaceuticals (VRTX.O)	O (10/01/2015)	\$271.63
Zentalis Pharmaceuticals Inc (ZNTL.O)	O (04/28/2020)	\$33.27

Vikram Purohit

DBV Technologies SA (DBVT.O)	E (10/23/2017)	\$6.02
Incyte Corp (INCY.O)	E (04/29/2020)	\$95.92
Neon Therapeutics Inc (NTGN.O)	E (01/16/2020)	\$3.07
Portola Pharmaceuticals Inc (PTLA.O)	E (09/05/2019)	\$17.90
Radius Health Inc (RDUS.O)	O (09/05/2019)	\$14.57

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.