Characterization of humoral immune responses reveals fast from concept to first
Infants (4 HIV+ adults
High yields (# vaccine doses) with small footprint
Induction of robust, durable immune responses
Well tolerated s
• Favorable thermostability profile
• Low or no risk of “Enhanced Respiratory Disease”
• Insensitive to cell culture conditions
• Reasonable thermostability profile (>2 years at 2-8°C)
• Distribution using existing infrastructure
• Low or no risk of “Enhanced Respiratory Disease”

SARS-CoV-2 virus
- A Beta coronavirus, like MERS and SARS
- 75% genetic homology with SARS
- Use of human ACE2 receptor, like SARS
- 95% genetic homology with bat-coronaviruses

Insights in SARS
- The SARS-CoV-2 enters cells through binding its spike protein to the ACE2 receptor on cells
- Experimental SARS vaccines which induce neutralizing antibodies targeting the spike protein (present on the envelope of the virus) can protect animals from lethal challenge
- Several candidate vaccines predisposed for “enhanced respiratory disease” (ERD) in vaccinated animals with breakthrough infections
- Several candidate vaccines can protect animals with breakthrough infections
- Similar association between SARS vaccine associated ERD and vaccine elicited Th2 skewed immune responses

Key attributes of Janssen vaccine platform
- Ad26® vector technology: potent, long-lasting cellular and humoral immunity
- Low or no risk of “Enhanced Respiratory Disease”
- Well tolerated safety profile >67,000 people, and attention of any safety signal
- RSV.C® cell line: high yields, scalable, fully industrialized
- Reasonable thermostability profile (>2 years at 2-8°C)
- Distribution using existing infrastructure
- Low or no risk of “Enhanced Respiratory Disease”

Proproprietary AdVac® and PER.C6® technology platforms are at the core of the Janssen COVID-19 vaccine candidate
- Hexon fucosylated, core, which can be grown at high cell density, vaccine
- High yields (1 vaccine dose) with novel footprint – resulting in fewer vials and lower COGS
- Formulation innovation has resulted in competitive thermostability profile
- Women-adapted platform for PER.C6 derived product formulation (now)
- Broad clinical experience with Janssen Ad26/PER.C6® technology platforms
- Established safety profile
- Fulfilled speed up to large scale production
- Prioritization WHO
- Established GMP manufacturing processes worldwide
- Established GMP manufacturing processes worldwide

Clinical Experience with Janssen Ad26-based vaccines
>67,000 subjects vaccinated (as of 27 March 2020)
- 46 completed and ongoing studies
- 48,101 infants, Malawi, India, Mexico, Israel, South Africa
- 11 months of age (as of 27 March 2020)
- >67,000 subjects vaccinated
- Ad26-based vaccines are well tolerated
- Mostly mild to moderate AEs of rapid onset and short duration; Fever is not a prominent AE
- No significant safety signals have been identified and no safety signals have been detected
- Ad26-based vaccines are well tolerated
- Mostly mild to moderate AEs of rapid onset and short duration; Fever is not a prominent AE
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Janssen Vaccines – our ambition
Establish a leadership position in transformational vaccines that are first and/or best in class in areas of high unmet medical need
- Prevent bacterial infections
- Prevent RSV
- Prevent MDR
- Respond to global pathogens
- Halt HIV
Johnson & Johnson Announces a Lead Vaccine Candidate for COVID-19; Landmark New Partnership with U.S. Department of Health & Human Services; and Commitment to Supply One Billion Vaccines Worldwide for Emergency Pandemic Use

Johnson & Johnson and BARDA Together Commit More than $1 Billion to Novel Coronavirus Vaccine Research and Development; Company Expects to Initiate Phase 1 Human Clinical Studies of Vaccine Candidate at Latest by September 2020

Johnson & Johnson Will Establish New U.S. Vaccine Manufacturing Capabilities and Additional Production Capacity Outside the U.S. to Begin Production at Risk to Help Ensure Global Vaccine Supply

NEW BRUNSWICK, N.J., March 30, 2020 – Johnson & Johnson

COVID-19 Discovery Vaccine Strategy

• Aim is to induce Nabs and CMI targeting the Spike Protein of SARS-2-CoV
• Plasmid DNA vaccines for rapid comparison of several candidate transgenes
• Ad26 vectors containing these transgenes for preclinical and clinical development
• Vaccines are tested for immunogenicity and protective efficacy in animal models
• Animal data and manufacturability data will inform selection of vaccine candidate for clinical development

Our Accelerated Path Towards FIH & EUA

Vaccine Ad26 Manufacturing Facility – Leiden, the Netherlands

• 2 x 1000L Bioreactors (disposable) with max. working volume of 900L
• Dedicated downstream processing line scaled to Bioreactor volumes
• Tech Transfer to other manufacturing sites planned

Janssen is well positioned to respond to the COVID outbreak, leveraging its platforms and capabilities

• Collaborations with academic networks have been established to access the best science and capabilities, complementing our internal expertise
• We are engaged in intensified dialogue with Regulatory Agencies globally
• Leveraging our experience with our platforms we are optimistic that we will be able to start a FIH COVID-2019 vaccine trial by Sept 2020, with potential for rapid scale up
• Several at risk investments are made in parallel to enable the fastest path forward
• We are committed to expand manufacturing capacity in support of worldwide deployment