Janssen Infectious Diseases & Vaccines

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This presentation refers to certain non-GAAP financial measures. These non-GAAP financial measures should not be considered replacements for, and should be read together with, the most comparable GAAP financial measures.

A reconciliation of these non-GAAP financial measures to the most directly comparable GAAP financial measures can be found in the accompanying financial schedules of the earnings release and the Investor Relations section of the Company’s website at www.investor.jnj.com.

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Strategic partnerships, collaborations and licensing arrangements

During the course of this presentation, we will discuss a number of products and compounds developed in collaboration with strategic partners, licensed from other companies, or funded by governmental or non-profit organizations. Following is an acknowledgement of those relationships:

### Cardiovascular & Metabolism/Other

<table>
<thead>
<tr>
<th>Product</th>
<th>Collaboration Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVOKANA / INVOKAMET / VOKANAMET / INVOKAMET XR</td>
<td>fixed-dose combination licensed from Mitsubishi Tanabe Pharma Corporation; XARELTO co-developed with Bayer AG; JNJ-5111 licensed from Hammi Pharmaceutical Co., Ltd; Apocritantan licensed from Idiosa; JNJ-3093 co-developing with Bristol-Myers Squibb; Retinal assets (Achromatopsia: AAV-CNGA3, AAV-CNGB3) and (X-Linked Retinitis Pigmentosa: AAV-RPGR) licensed from MeiraGTx; Integrin therapeutics in collaboration with Morphic Therapeutics; Metabolic research discovery in collaboration with University of California San Diego.</td>
</tr>
</tbody>
</table>

### Immunology

<table>
<thead>
<tr>
<th>Product</th>
<th>Collaboration Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMICADE and SIMPONI</td>
<td>are marketed in different territories by Mitsubishi Tanabe Pharma Corporation, as well as Schering-Plough (Ireland) Company, a subsidiary of Merck &amp; Co., Inc.; TREMFYA discovered using MorphoSys AG antibody technology; VE202 licensed from Vedanta Biosciences, Inc.; JNJ-4500 (anti-NKG2D) licensed from Novo Nordisk; JNJ-4238 (PTG200) licensed from and co-developing with Protagonist Therapeutics, Inc.; JNJ-7752 (MB23230) under option from Istesso Ltd.; JNJ-8398 (TD-1473) co-developing with Theravance Biopharma Ireland Limited.</td>
</tr>
</tbody>
</table>

### Infectious Diseases & Vaccines

<table>
<thead>
<tr>
<th>Product</th>
<th>Collaboration Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPLERA / EPIVLELA, ODEFSEY, SYMTUZA, PREZCOBIX / REZOLSTA</td>
<td>fixed-dose combination products developed in collaboration with Gilead Sciences, Inc.; JUULCA developed and marketed in collaboration with ViV HealthCare Ltd.; Long-acting HIV injectable treatment regimen of rilpivirine and cabotegravir developed in collaboration with ViV Healthcare Ltd.; Pimodivir licensed from Vertex Pharmaceuticals, (this project has received federal funding from BARDA, part of the U.S. Department of Health and Human Services’ Office of the Assistant Secretary of Preparedness and Response, under contract number HHSO100201500014C); Other Transaction Authority agreement No.HHSO100201700018C with BARDA, part of the U.S. Department of Health and Human Services’ Office of the Assistant Secretary for Preparedness and Response, to develop a comprehensive portfolio of therapeutics and vaccines to protect communities in the event of an influenza pandemic and other infectious disease threats.; JNJ-0635 developing in collaboration with Ichor Medical Systems; JNJ-4964 (TLR Agonist) licensed from Chia Tai Tiangning Pharmaceutical Group Co., Ltd.; JNJ-3989 licensed from Arrowhead Pharmaceuticals Inc.; Worldwide research collaboration and license with Locus Biosciences Inc., to develop, manufacture and commercialize bacteriophage products generated using Locus’s recombinant CRISPR/Cas3 Phage platform; JSC Pharmstandard manufactures and distributes SIRTURO in Russia and other countries in the region, including the Commonwealth of Independent States (CIS). Since 2005, Janssen Vaccines &amp; Prevention B.V. has been participating in the NIH-supported Integrated Preclinical/Clinical AIDS Vaccine Development (IPCAVD) program under grants AI069305, AI078526 and AI096040, in collaboration with Professor Dan Barouch at Beth Israel Deaconess Medical Center (BIDMC); Janssen’s HIV vaccine program has also received funding or support from the United States Military HIV Research Program (MRHP) at the Walter Reed Army Institute of Research (WRAIR), with the Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF); the Ragon Institute; and the International AIDS Vaccine Initiative (IAVI); The phase 2b proof-of-concept efficacy study Imbokodo (HTV705/HPX2008) for the HIV prophylactic vaccine received co-funding from two primary partners, the Bill &amp; Melinda Gates Foundation and National Institute of Allergy and Infectious Diseases (NIAID). Additional partners providing support include the U.S. Military HIV Research Program at the Walter Reed Army Institute of Research, U.S. Army Medical Materiel Development Activity, and the Ragon Institute of Massachusetts General Hospital (MGH), Massachusetts Institute of Technology (MIT) and Harvard. The study is conducted at clinical sites coordinated by the NIAID-funded HIV Vaccine Trials Network (HVTN). The South Africa Medical Research Council (SAMRC) is helping to implement HTV705/HPX2008 in South Africa; License and collaboration agreements with Bavarian Nordic to leverage their MVA-BN technology with Janssen’s own ADVAC/DNA-based vaccine technologies in the development and commercialization of potential new vaccine regimens against hepatitis B virus (HBV) and the human immunodeficiency virus (HIV-1); JNJ-1623 VAC51623 (HPV vaccine) developed in collaboration with and licensed from Bavarian Nordic A/S; IPV vaccine with funding from Bill and Melinda Gates Foundation; Zika vaccine in collaboration with Beth Israel Deaconess Medical Center (Harvard Medical School); License and collaboration agreement with GSK (Glycovaxyn) for the development of ExPEC.</td>
</tr>
</tbody>
</table>
Strategic partnerships, collaborations and licensing arrangements

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<table>
<thead>
<tr>
<th>Neuroscience</th>
<th>INVEGA SUSTENNA / XEPLION / INVEGA TRINZA / TREVICTA includes technology licensed from Alkermes Pharma Ireland Limited; RISPERDAL CONSTA developed in collaboration with Alkermes, Inc; Tau vaccine developing in collaboration with AC Immune SA; JNJ-7922 (Orexin-2 antagonist) developing in collaboration with Minerva Neurosciences, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncology</td>
<td>BALVERSA discovered in collaboration with Astex Pharmaceuticals, Inc.; ERLEADA is licensed from The Regents of California and Memorial Sloan Kettering Cancer Center; DARZALEX licensed from Genmab A/S; YONDELIS developed in collaboration with Pharma Mar S.A.; IMBRUVICA developed in collaboration and co-marketed in the U.S. with Pharmacyclics, LLC, an AbbVie company; DACOGEN developed and commercialized in collaboration with Eisai Inc. and Otsuka Pharmaceuticals Co. Ltd.; ZYTIGA licensed from BTG International Ltd.; VELCADE developed in collaboration with Millennium: The Takeda Oncology Company; PROCRIT / EPREX licensed from Amgen Inc.; casatumumab licensed and developing in collaboration argenx SE; lazertinib licensed and developing in collaboration with Legend Biotech USA Inc., Legend Biotech Ireland Limited (“Legend”), subsidiaries of GenScript Biotech Corporation; Niraparib licensed from TESARO, Inc., an oncology-focused business within GSK; JNJ-7107 licensed from Alligator Bioscience AB; JNJ-6892 licensed from Biocon Ltd.; DUOBODY platform licensed from Genmab relates to several bispecific antibody programs; ENHANZE platform licensed from Halozyme Therapeutics, Inc.</td>
</tr>
<tr>
<td>Pulmonary Hypertension</td>
<td>UPTRAVI (selexipag), discovered and initially developed by Nippon Shinyaku, a worldwide (except for Japan) license and co-development and co-promotion agreements with Nippon Shinyaku (co-promotion in Japan) and OPSUMIT license agreement with Nippon Shinyaku in Japan; Strategic collaboration with Analytics 4 Life, to investigate the use of machine learning diagnostic imaging technology, to develop a single, non-invasive test to diagnose patients with all types of pulmonary hypertension.</td>
</tr>
<tr>
<td>Global Public Health</td>
<td>Janssen’s Monovalent Ebola Vaccine is developed in collaboration with Bavarian Nordic A/S, and MVA-BN-Filo® is licensed-in from Bavarian Nordic A/S. The program has benefited from funding and preclinical services from the National Institute of Allergy and Infectious Diseases (NIAID), part of NIH, NIAID support included 2 product development contracts starting in 2008 and 8 pre-clinical services contracts. This program is also receiving funding from the IM2 Joint Undertaking under EBOVAC1 (grant nr. 115854), EBOVAC2 (grant nr. 115861), EBOVAC3 (grant nr. 800176), EBOMAN (grant nr. 115850) and EBODAC (grant nr. 115847). The IM2 Joint Undertaking receives support from the European Union’s Horizon 2020 research and innovation program and the European Federation of Pharmaceutical Industries and Associations (EFPIA). Further funding for the Ebola vaccine regimen has been provided by the BARDA, within the U.S. Department of Health and Human Services’ Office of the Assistant Secretary for Preparedness and Response, under Contract Numbers HHSO100201700013C and HHSO100201500008C. The initial work on Ebola was conducted which was extended from 2002 until 2011, 2002 and 2007 via a Cooperative Research and Development Agreement (CRADA is AI-0114) between Janssen/Crucell and the Vaccine Research Center (VRC)/NIAID, part of the NIH. Janssen/Crucell have licenses to much of VRC’s Ebola IP specific for human adenovirus under the Ad26/Ad35 Ebola vaccine CRADA invention. VAC89120 (Filovirus multivalent vaccine) developed in collaboration with Bavarian Nordic; funding: NIH Division of Microbiology and Infectious Diseases (DMID), under Contract Number HHSN272200800050C.</td>
</tr>
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</table>
Our Vision: Treat, prevent and cure infectious diseases

Uniquely positioned in the industry to discover and develop transformational therapeutics and vaccines that fight the most life-threatening infectious diseases

Building on our heritage in HIV, hepatitis C and TB where we changed the treatment paradigm for patients

Leveraging our expertise to deliver advanced treatments against HIV, hepatitis B, RSV and influenza

Evolving our focus into prevention and cure by developing transformational vaccines and therapeutics
Infectious Diseases & Vaccines highlights

A growing opportunity for infectious diseases

- 2018 WW Market Sales: $33.7B
- 2023 WW Market Sales: $38.7B
- CAGR 2018–2023: 2.8%

Focus on infectious diseases with greatest impact on human health

1.8MM\(^1\) New HIV infections per year

292MM\(^2\) Infected HBV patients

500K\(^3\) Influenza deaths per year

Rich pipeline

- Multiple therapeutics for hepatitis B
- RSV and influenza antivirals
- HIV preventive vaccine
- E. coli prophylactic vaccine
- HPV therapeutic vaccine

Potential planned filings 2019–2023

- Ripilvirine HIV Long-Acting (filed US)
- SIRTURO TB pediatric (filed US)
- SYMTUZA HIV pediatric
- PREZCOBIX / REZOLSTA HIV pediatric
- JULUCA HIV pediatric
- Pimodivir (influenza A)
- Pimodivir IV formulation (influenza A)
- RSV senior vaccine (VAC18193)

Leading end-to-end infectious diseases portfolio

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>9</td>
<td>Approved products</td>
</tr>
<tr>
<td>2</td>
<td>Products filed in 2019</td>
</tr>
<tr>
<td>8</td>
<td>Potential planned filings 2019–2023</td>
</tr>
<tr>
<td>2</td>
<td>NME with revenue potential $1B</td>
</tr>
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</table>

Focused on infectious diseases with the greatest impact on human health

**HIV**
Human immunodeficiency virus

1.8MM* new infections\(^1\)

0.9MM* deaths\(^4\)

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**HBV**
Hepatitis B virus

292MM infected worldwide\(^2\)

780K* deaths\(^2\)

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**Respiratory infections**
Respiratory syncytial virus, influenza

~ 500K* influenza deaths\(^3\)

3.2MM* RSV hospitalizations in children <5\(^5\)

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* Figures worldwide per annum
4. WHO. HIV. April 2019. Available at: https://www.who.int/gho/hiv/en
5. NCBI. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5910575/
A growing opportunity in infectious diseases

Further growth anticipated beyond 2023 due to emerging innovation

CAGR 2018–2023

Potential future growth drivers

- Fixed regimens for HBV functional cure
- New influenza antiviral (pimodivir)
- RSV vaccines and treatment (JNJ-8678)
- HIV long-acting treatment and prophylactic vaccine

Note: Values may have been rounded
Source: EvaluatePharma, March 2019
# Leading end-to-end infectious diseases portfolio

## Approved products

**HIV**
- **PREZISTA** (darunavir) tablets
- **Symtuza**
  - darunavir/cobalt (entricitbine/tenofovir disoproxil fumarate) tablets
- **PREZCOBIX**
  - darunavir 800 mg / coibicistat 150 mg tablets (US)
- **REZOLSTA**
  - darunavir/cobartisat (EU)
- **ONCE DAILY EDURANT** (rilpivirine) tablets
- **Odefsey**
  - etravirine 200 mg / tenofovir disoproxil fumarate 300 mg tablets
- **INTELENCE**
  - etravirine 100 mg tablets
- **Juluca**
  - dolutegrar 50 mg / rilpivirine 25 mg tablets
- **COMPLERA**
  - etravirine 100 mg / dolutegrar 25 mg / tenofovir disoproxil fumarate 300 mg tablets
- **TB**
  - Sirturo 100 mg tablets

## Products filed and potential planned filings 2019–2023

### Filed

**SIRTURO**
- Pediatric TB

**Rilpivirine**
- rilpivirine/cabotegravir long-acting HIV maintenance therapy

### Potential planned filings

**Rilpivirine**
- rilpivirine/cabotegravir long-acting HIV Pediatric

**PREZCOBIX/REZOLSTA**
- HIV Pediatric

**SYMTUZA**
- HIV Pediatric

**JULUCA**
- HIV Pediatric

**RSV Senior prophylactic vaccine**
- (VAC18193)

**Pimodivir**
- (JNJ-3872)

**Influenza A**

**IV formulation**

### New molecular entities

- **HIV**
  - Prophylactic vaccine (VAC89220)
  - Curative approaches

- **Hepatitis B**
  - Multiple therapeutic modes of action aiming for a functional cure
  - Capsid assembly modulators (JNJ-6379 / JNJ-0440)
  - siRNA (JNJ-3989)
  - TLR7 (JNJ-4964)
  - DNA therapeutic vaccine (JNJ-0535)

- **Respiratory infections**
  - Multiple therapeutic modes of action to prevent and treat RSV and influenza
  - RSV Jr prophylactic vaccine (VAC18194)
  - RSV fusion inhibitor (JNJ-8678)
  - Bacteriophage to treat bacterial lung infections

- **E. coli** prophylactic vaccine (VAC52416)

- **S. aureus** prophylactic vaccine

- **HPV therapeutic vaccine** (VAC81623)

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Please refer to Strategic partnerships, collaborations and licensing arrangements. Presented at Johnson & Johnson Pharma Day 2019

Note: Filings/approvals are in the US or EU, unless otherwise noted. This information is accurate as of May 15, 2019 to the best of Johnson & Johnson’s knowledge. The Company assumes no obligation to update this information.
Continued innovation and growth in HIV portfolio

Collaborations to improve treatment options¹

- **8** marketed therapies
- **2** launched in 2017–18

SYMTUZA – first and only PI-based STR providing convenience for patients

JULUCA – first approved 2-drug maintenance regimen

Innovative solutions to address unmet needs¹

- Investigational long-acting injectable treatment filed to US FDA
- Advancing a preventive “global” vaccine
  - Phase 2b clinical study ongoing
  - Potential to redefine the future of HIV

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1. Please refer to Strategic partnerships, collaborations and licensing arrangements. Presented at Johnson & Johnson Pharma Day 2019
First long-acting injectable HIV therapy filed to US FDA offers potential of monthly treatment

86% of all patients who received the long-acting (LA) injectable regimen of cabotegravir (CAB) + rilpivirine (RPV) preferred it to daily oral treatment\(^1\)

**ATLAS:** Establish noninferior antiviral activity of monthly LA regimen vs. continuing current antiretroviral therapy (CAR)

<table>
<thead>
<tr>
<th>Proportion of Participants (%)</th>
<th>CAB LA + RPV LA (n=308)</th>
<th>CAR (n=308)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virologic nonresponse (≥50 c/mL)</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Virologic success (&lt;50 c/mL)</td>
<td>92.5</td>
<td>95.5</td>
</tr>
<tr>
<td>No virologic data</td>
<td>5.8</td>
<td>3.6</td>
</tr>
</tbody>
</table>

**FLAIR:** Establish noninferior antiviral activity of monthly LA regimen vs. continuing abacavir/dolutegravir/lamivudine (ABC/DTG/3TC)

<table>
<thead>
<tr>
<th>Proportion of Participants (%)</th>
<th>CAB LA + RPV LA (n=283)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virologic nonresponse (≥50 c/mL)</td>
<td>2.1</td>
</tr>
<tr>
<td>Virologic success (&lt;50 c/mL)</td>
<td>2.5</td>
</tr>
<tr>
<td>No virologic data</td>
<td>4.2</td>
</tr>
</tbody>
</table>

1. LA Injectable is a collaboration with ViV Healthcare. ATLAS and FLAIR Presented at CROI, 2019
HIV preventive vaccine: reasons to believe

Preclinical data superior to best candidate tested in the clinic to date\textsuperscript{1,2}

Learnings from RV144, the first positive HIV vaccine efficacy trial

• Three vaccine candidates failed in the past
• RV144 showed a 31\% efficacy at three years post vaccination\textsuperscript{2}
• Envelope binding antibodies identified as predictive for protection\textsuperscript{2}
• RV144 efficacy and antibodies peaked at twelve months, but waned rapidly\textsuperscript{2}

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Non-human primates</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALVAC, ALVAC+AIDSVAX</td>
<td>29% not significant\textsuperscript{3}</td>
<td>31% RV144 trial\textsuperscript{2}</td>
</tr>
<tr>
<td>Ad26, Ad26+gp140</td>
<td>94%\textsuperscript{1}</td>
<td>Pending</td>
</tr>
</tbody>
</table>

3. Barouch unpublished
HIV preventive vaccine: reasons to believe

Pre-clinical data superior to best candidate tested in the clinic to date$^{1,2}$

1. Barouch, Tomaka, Wegmann, et al., The Lancet, July 2018
2. New England Journal of Medicine, 361;23 NEJM.org, December 3, 2009

Human immune responses compare favorably to non-human primates$^1$

<table>
<thead>
<tr>
<th>HIV specific antibody titer, Log10</th>
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<tbody>
<tr>
<td>Non-human primates (NHP)</td>
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</tbody>
</table>

6 months post 4th vaccination NHP challenge timepoint

IMBOKO

HVTN 705/HPX2008 phase 2b proof-of-concept efficacy study
HBV: A significant unmet medical need with 292MM carriers¹

7th leading cause of death worldwide due to cancer and liver failure²

Despite vaccination there are 30MM new infections each year³

Less than 10% HBV patients are treated⁴

Current treatment options are suboptimal and difficult to tolerate⁵

• While 84% of infants globally received routine HBV vaccination in 2016, protection rates in adults are low⁶

• Self-stigma (72%) and social exclusion (53%) are the most common types of stigma/discrimination HBV patients face⁷

• Most face life-long therapy⁸

• Nucleos(t)ides provide <3% functional cure rate⁹,¹⁰,¹¹

• Interferon alpha ~20% functional cure rate⁹,¹⁰,¹¹

Aim to achieve high rates of functional cure for HBV

Functional cure = serologically negative for HBV DNA and HBsAg >6 months


- Therapeutic vaccine
- Immunomodulators

• siRNA (JNJ-3989)
• Capsid Assembly Modulator (JNJ-6379)
• Nucleoside analogue

Infectious virus (HBV DNA)

Subviral particles hepatitis B surface antigen (HBsAg)

Recruit immunosuppressive myeloid-derived suppressor cells (MDSCs)

Block HBsAg specific T cells

T cell killing of HBV infected hepatocytes

Hepatocyte

HBV patients treated with JNJ-3989 in a Ph2 study achieved durable and >1 log reduction of HBsAg\(^1\)

Mean HBsAg reductions from baseline\(^1\)

Potential for HBsAg seroclearance and functional cure

Unprecedented HBsAg reduction:

- 100% patients achieved $\geq 1.0$ Log10 IU/ml
- In difficult-to-treat HBeAg negative patients
- Maintained for $\geq 4$ months after 3 doses
- 88% patients achieved HBsAg <100 IU/ml
- Administered subcutaneously in patients treated with nucleoside analogues

1. Data adapted from presentation at EASL 2019, Vienna. (all Q4W dosing groups, 100, 200, 300 and 400mg)
Respiratory infections are underestimated and undertreated

Influenza
452,000–549,000 hospitalizations in US in 2018–19 season¹

- >37% Pediatric
- ~20%³ Adult
- >43% Elderly

RSV
>234,000 hospitalizations in US per year²

- 5% Pediatric
- 25% Adult
- 70% Elderly

3. Janssen estimates

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3. Janssen estimates
A promising prophylactic RSV senior vaccine in development

Aim to reduce cost burden of RSV: US $3.5B a year

2. 11th International Respiratory Syncytial Virus Symposium, Oct 31—Nov 4, 2018, Asheville, NC USA

**Ad26.RSV.preF RSV senior vaccine candidate**

- Induces high levels of RSV-specific immunity in target population of older adults
- Combination of humoral and cellular immunity, with unique durability that could cover the entire RSV season
- Phase 2b study in older adults in preparation
Influenza: pimodivir in combination with oseltamivir demonstrated promising patient outcomes

Phase 2 results: hospitalized patients with <72 hours of symptoms

More patients return to normal activity*1

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Patients returning to normal activity by day 8 after treatment (%)</th>
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<tbody>
<tr>
<td>pimodivir + oseltamivir</td>
<td>65%</td>
</tr>
<tr>
<td>placebo + oseltamivir</td>
<td>33%</td>
</tr>
</tbody>
</table>

Faster time to influenza viral negativity*1

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Estimated median time to negativity, days after treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>pimodivir + oseltamivir</td>
<td>0.9</td>
</tr>
<tr>
<td>placebo + oseltamivir</td>
<td>1.7</td>
</tr>
</tbody>
</table>

* Figures represent a subset of endpoints from the OPAL study. Full data as measured by the Hospital Recovery Scale. Common odds ratio: 0.397 (0.092, 1.719) p=0.2150
1. A Phase 2, Randomized, Double-blind, Placebo-controlled Study to Evaluate the Pharmacokinetics, Safety, and Antiviral Activity of JNJ-63623872 in Combination With Oseltamivir in Adult, and Elderly Hospitalized Patients With Influenza A Infection. Presented at ESWI, September 2017
Key takeaways: Infectious Diseases & Vaccines

We have a pipeline poised to deliver transformational antiviral therapies and preventive vaccines

**Robust HIV portfolio continues to expand**
- 8 approved HIV treatments in past decade
- Long-acting injectable treatment regimen filed to FDA
- Continued filings for SYMTUZA and JULUCA through 2023
- HIV “global” preventive vaccine entering late development

**Bringing forward next wave of innovation in HBV**
- Multiple mechanisms set to deliver key advances
- Finite regimens aiming for high rates of functional cure

**Advancing respiratory infections portfolio**
- Phase 3 trials ongoing for influenza A treatment pimodivir
- Preventive vaccine and treatment in late-stage development for RSV

**Transformational technologies poised to deliver impactful innovation**

- **AdVac®** Prophylactic and therapeutic vaccines
- **crPhage™** Bacteriophage therapeutics for bacterial lung infections
- **TRiM™** RNAi hepatitis B therapeutic

1. Please refer to Strategic partnerships, collaborations and licensing arrangements. Presented at Johnson & Johnson Pharma Day 2019