Janssen R&D Strategy

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Global Head, Janssen Research & Development
**Cautions concerning forward-looking statements**

This presentation contains “forward-looking statements” as defined in the Private Securities Litigation Reform Act of 1995 regarding, among other things: future operating and financial performance, product development, market position and business strategy. The viewer is cautioned not to rely on these forward-looking statements. These statements are based on current expectations of future events. If underlying assumptions prove inaccurate or known or unknown risks or uncertainties materialize, actual results could vary materially from the expectations and projections of Johnson & Johnson. Risks and uncertainties include, but are not limited to: economic factors, such as interest rate and currency exchange rate fluctuations; competition, including technological advances, new products and patents attained by competitors; challenges inherent in new product research and development, including unexpected clinical trial results, additional analysis of existing clinical data, uncertainty of clinical success and obtaining regulatory approvals; uncertainty of commercial success for new and existing products; the impact of business combinations and divestitures; challenges to patents; the impact of patent expirations; the ability of the company to successfully execute strategic plans, including restructuring plans; manufacturing difficulties or delays, internally or within the supply chain; product efficacy or safety concerns resulting in product recalls or regulatory action; significant adverse litigation or government action, including related to product liability claims; changes to applicable laws and regulations, including tax laws, global health care reforms and import/export and trade laws; trends toward health care cost containment; changes in behavior and spending patterns of purchasers of health care products and services; financial instability of international economies and legal systems and sovereign risk; increased scrutiny of the health care industry by government agencies. A further list and descriptions of these risks, uncertainties and other factors can be found in Johnson & Johnson's Annual Report on Form 10-K for the fiscal year ended December 30, 2018, including in the sections captioned “Cautionary Note Regarding Forward-Looking Statements” and “Item 1A. Risk Factors,” in the company’s most recently filed Quarterly Report on Form 10-Q and in the company’s subsequent filings with the Securities and Exchange Commission. Copies of these filings are available online at www.sec.gov, www.jnj.com or on request from Johnson & Johnson. Any forward-looking statement made in this presentation speaks only as of the date of this presentation. Johnson & Johnson does not undertake to update any forward-looking statement as a result of new information or future events or developments.

**Cautionary note on non-GAAP financial measures**

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.

**Note on trademarks and photos**

The third party trademarks used herein are trademarks of their respective owners.

Photo disclaimer: Unless otherwise noted, individuals depicted are models for illustrative purposes.
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 | INVOKANA / INVOKAMET / VOKANAMET / INVOKAMET XR fixed-dose combination licensed from Mitsubishi Tanabe Pharma Corporation; XARELTO co-developed with Bayer AG; JNJ-5111 licensed from Hamimi Pharmaceutical Co., Ltd.; Aprocitantan licensed from Idorsia; 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; IntegriGene therapies in collaboration with Morphic Therapeutics; Metabolic research discovery in collaboration with University of California San Diego. |
| Immunology | REMICADE and SIMPONI are marketed in different territories by Mitsubishi Tanabe Pharma Corporation, as well as Schering-Plough (Ireland) Company, a subsidiary of Merck & 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 (MSB23720) under option from Iressa Ltd.; JNJ-8398 (TD-1473) co-developing with Theravance Biopharma Ireland Limited. |
| Infectious Diseases & Vaccines | COMPLERA / EPIVLERA, ODEFSEY, SYMTUZA, PREZCOBIX / REVOLSTA 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 Veravax 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 HHSH100201500014C); 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-0535 developing in collaboration with Ichor Medical Systems; JNJ-4964 (TLR Agonist) licensed from Chia Tai Tiangying 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 & Prevention B.V. has been participating in the NIH-supported Integrated Preclinical/ Clinical AIDS Vaccine Development (IPCAVD) program under grants A1066305, A1078526 and A096640, 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 (HVTN 705/HPX2008) for the HIV prophylactic vaccine received co-funding from two primary partners, the Bill & 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 African Medical Research Council (SAMRC) is helping to implement HVTN 705/HPX2008 in South Africa; License and collaboration agreements with Bharat Biotech to leverage their MVA and 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 VAC1623 (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. |
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:

### Neuroscience

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.

### Oncology

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 developed in collaboration with Nippon Shinyaku Co., Ltd.; DUOBODY platform licensed from Genmab relates to several bispecific antibody programs; ENHANZE platform licensed from Halozyme Therapeutics, Inc.

### Pulmonary Hypertension

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.

### Global Public Health

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 IM2IC 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 IM2IC 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 HHSO10021700013C 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 HHSN272200800056C.
We put the needs and well-being of patients at the center of everything we do
Janssen R&D has a unique approach...

- End-to-end therapeutic areas & world-class global functions
- Modality agnostic approach to medical innovation
- Simultaneous disease and biological pathway driven strategies
- Full and seamless participant in the entire innovation ecosystem
We have had a remarkable track record, delivering 18 new medicines since 2011

Note: Includes acquired products
We have redefined the treatment paradigm for many serious diseases

- HIV
- Psoriasis
- Rheumatoid arthritis
- Inflammatory bowel disease
- Thrombosis
- Schizophrenia
- Prostate cancer
- Multiple myeloma
- Pulmonary arterial hypertension
- Diabetes
…and we have continued to do so over the past year

<table>
<thead>
<tr>
<th>DARZALEX®</th>
<th>MAIA</th>
<th>Multiple myeloma</th>
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<tbody>
<tr>
<td>Xarelto®</td>
<td>COMPASS</td>
<td>Coronary &amp; peripheral artery disease</td>
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<tr>
<td>Stelara®</td>
<td>UNIFI</td>
<td>Ulcerative colitis</td>
</tr>
<tr>
<td>Tremfya®</td>
<td>ECLIPSE</td>
<td>Psoriasis</td>
</tr>
<tr>
<td>Spravato™</td>
<td>TRANSFORM-2, SUSTAIN-1</td>
<td>Treatment-resistant depression</td>
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<tr>
<td>imbruvica®</td>
<td>ECOG-1912</td>
<td>CLL frontline young/fit</td>
</tr>
<tr>
<td>Invokana® canagliflozin tablets</td>
<td>CREDENCE</td>
<td>Chronic kidney disease</td>
</tr>
<tr>
<td>Erleada™ (apalutamide) 60 mg tablets</td>
<td>SPARTAN</td>
<td>Non-metastatic castration resistant prostate cancer</td>
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Our innovation continues to be recognized

Regulatory recognition

- 30 Priority review designations
- 10 Breakthrough therapy or PRIME designations

Clinical/scientific community recognition in last 5 years

- 38 NEJM/Lancet/JAMA
- 28 Science/Nature

1. Priority review designation from 2006 to 2019 (Including Accelerated review designation for EU)
2. Breakthrough designation from 2012 to 2019
3. Includes all clinically-relevant articles (original articles, reviews, and editorials, but not supplements and correspondence) published to-date in NEJM, JAMA, Lancet, Science, and Nature since 2014
We strive to impact health on a global scale, advancing and enabling access to transformational innovation in developing countries.

Tackling some of the biggest health threats in resource-limited settings

- HIV
- Drug-resistant TB
- Mental health
- Soil-transmitted helminths
- Pathogens of global concern
  - Ebola, Zika, Dengue, Polio

130MM+ Lives impacted

15 Medicines in the WHO’s Essential Medicines List

The external environment continues to change

Quantity and quality of actionable human biology is expanding exponentially

Technological breakthroughs permit new platforms and modalities to act on this biology

Large data sets and machine learning/AI are driving disruption across all aspects of discovery and development
Janssen R&D sits at the fulcrum of these forces, and we will drive change in R&D

Our insight, expertise, heritage and capabilities are second to none

We will redefine success, continuing to bring transformational new medicines to patients while playing a pivotal role in evolution of the healthcare ecosystem
We will deliver this vision through three strategic pillars

Invest in our culture and team

Deliver on today’s promises

Shape the future
First, we will invest in our culture and our teams

Invest in our culture and team

Deliver on today’s promises

Shape the future
Our scientific leadership has been substantially strengthened, and our talent is world-class

Our culture is rooted in deep scientific curiosity, hunger and humility

David M. Lee, M.D., Ph.D.
Global Therapeutic Area Head, Immunology

Husseini K. Manji, M.D., F.R.C.P.C.
Global Therapeutic Area Head, Neuroscience

James Merson, Ph.D.
Global Therapeutic Area Head, Infectious Diseases

Johan Van Hoof, M.D.
Global Therapeutic Area Head, Vaccines

James F. List, M.D., Ph.D.
Global Therapeutic Area Head, Cardiovascular & Metabolism

Martin Fitchet, M.D.
Global Therapeutic Area Head, Pulmonary Hypertension

Peter F. Lebowitz, M.D., Ph.D.
Global Therapeutic Area Head, Oncology

Karin Van Baelen, Pharm.D.
Global Head, Regulatory Affairs

Rich Tillyer, Ph.D.
Global Head, Discovery, Product Development & Supply

Stef Heylen, M.D.
Chief Operating Officer, Global Head of Development Management, Operations and Analytics

Najat Khan, Ph.D.
Global Head, Strategy & Operations
Second, we will deliver on today’s promises

- Invest in our culture and team
- Deliver on today’s promises
- Shape the future
Our rich development pipeline represents diverse opportunities, modalities and risks, designed to deliver a steady state of innovation.

### Potential NME and LE filings/approvals planned 2019–2023

#### Oncology

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>DARZALEX</td>
<td>Split dosing (US)</td>
</tr>
<tr>
<td>JNJ6372</td>
<td>Solid tumor</td>
</tr>
<tr>
<td>JNJ-7957</td>
<td>BCMA/CD3</td>
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<tr>
<td>JNJ-7564</td>
<td>GPRC5D/CD3</td>
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#### Immunology

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>IMBRUVICA</td>
<td>CLL front-line combo with obinutuzumab (US*, EU*)</td>
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<tr>
<td>TREMFYA</td>
<td>Psoriatic arthritis</td>
</tr>
<tr>
<td>SPRAVATO</td>
<td>Treatment resistant depression (US*, EU*)</td>
</tr>
<tr>
<td>INVKANA</td>
<td>Chronic kidney disease in type 2 diabeties (US*)</td>
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</tbody>
</table>

#### Neuroscience

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Liripivirine</td>
<td>- rivirine/cabotegravir long-acting HIV maintenance therapy*</td>
</tr>
<tr>
<td>Olysetatex</td>
<td>Difficult to treat hypertension</td>
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<tr>
<td>SIRTIRO **</td>
<td>Monovalent vaccine**</td>
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</table>

#### Cardiovascular & Metabolism

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>Xarelto</td>
<td>Intrainguinal revascularized PAD</td>
</tr>
<tr>
<td>Xarelto</td>
<td>VTE prevention</td>
</tr>
<tr>
<td>Nolvadex</td>
<td>Metastatic prostatic cancer (US)</td>
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#### Pulmonary Hypertension

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>JNJ-5111</td>
<td>Cystic fibrosis</td>
</tr>
<tr>
<td>JNJ-500</td>
<td>Anti-NKGD2</td>
</tr>
</tbody>
</table>

#### Infectious Diseases & Vaccines

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>JNJ3-3872</td>
<td>HIV pediatric</td>
</tr>
<tr>
<td>JNJ4-528</td>
<td>Relapsed refractory multiple myeloma</td>
</tr>
<tr>
<td>JNJ4-500</td>
<td>Anti-NKGD2</td>
</tr>
<tr>
<td>INVOKANEX</td>
<td>Chronic kidney disease</td>
</tr>
</tbody>
</table>

Note: Please refer to Strategic partnerships, collaborations and licensing arrangements for additional details. Filings/approvals are in the US or EU, unless otherwise noted. This information is accurate as of the date hereof to the best of Johnson & Johnson's knowledge. The Company assumes no obligation to update this information. ^ Approved * In registration. ** Global Public Health. VTD: VELCADE, Thalidomide and Dexamethasone. Vrd: VELCADE, Revlimid and Dexamethasone. Rd: Revlimid and Dexamethasone. WM: Waldenstrom Macroglobulinemia. R/R: Relapsed Refractory. NHL: Non-Hodgkin’s Lymphoma. Combo: Combination therapy. Revlimid is a registered trademark of Celgene Corporation.
Our robust pipeline is anticipated to deliver at least 10 new medicines with >$1 billion potential*

Select NME approvals & filings in 2019–2023 timeframe

<table>
<thead>
<tr>
<th>2019 approvals</th>
<th>Potential 2019–2023 filings</th>
</tr>
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<tbody>
<tr>
<td><strong>Spravato</strong> ( esketamine) nasal spray</td>
<td>JNJ-7564 GPRC5D/CD3, JNJ-7957 BCMA/CD3 Regimens for multiple myeloma</td>
</tr>
<tr>
<td>Treatment-resistant depression</td>
<td>JNJ-6372 EGFR/c-Met (Bispecific EGFR and cMET receptor inhibitor) Solid tumor</td>
</tr>
<tr>
<td><strong>Balversa</strong> (erdafitinib) tablets</td>
<td>JNJ-4500 anti-NKG2D (anti-NKG2D mAb) Crohn’s disease</td>
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<tr>
<td>Urothelial cancer</td>
<td>JNJ-4550 cusatuzumab (Anti CD70 mAb) Acute myeloid leukemia</td>
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<td></td>
<td>JNJ-4528 BCMA CAR-T Multiple myeloma</td>
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<td></td>
<td>JNJ-1937 lazertinib (EGFR tyrosine-kinase inhibitor) Non small cell lung cancer</td>
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<tr>
<td></td>
<td>AAV-CNGB3/CNGA3/RPGR (Gene Therapy) Retinal disease</td>
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<td></td>
<td>RSV Vaccine (Ad26.RSV.preF) RSV</td>
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<tr>
<td></td>
<td>niraparib (PARP inhibitor) Prostate cancer</td>
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<tr>
<td></td>
<td>JNJ-7922 seltorexant (Orexin-2 receptor antagonist) Adjunctive treatment, MDD</td>
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<td>□ New since May, 2017</td>
<td>□ Accelerated since May, 2017</td>
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</table>

* Peak non-risk-adjusted sales, including partner sales
Note: Filings/approvals are in the US or EU, unless otherwise noted. This information is accurate as of the date hereof to the best of Johnson & Johnson’s knowledge. The Company assumes no obligation to update this information.
We continue to extend the effectiveness and reach of our marketed medicines to address critical patient needs

10+ potential major line extension launches and filings projected 2019–2023 each with $0.5B+ sales potential*

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**DARZALEX** (daratumumab)
- Front-line multiple myeloma transplant ineligible Rd
- Front-line multiple myeloma transplant ineligible VRd
- Front-line multiple myeloma transplant eligible VRd
- Subcutaneous rapid administration

**imbruvica** (ibrutinib) capsules
- Chronic lymphocytic leukemia (CLL) front-line combo with rituximab
- Front-line maintenance mantle cell lymphoma (MCL)
- Follicular lymphoma relapsed/refractory
- Front-Line CLL (IV fixed duration)

**Erleada** (apalutamid) capsules
- Metastatic castrate sensitive prostate cancer (US)^
- Chemo-naïve PC Combo with abiraterone acetate
- Localized prostate cancer

**Tremfya** (guselkumab)
- Psoriatic arthritis
- Crohn’s disease
- Ulcerative colitis monotherapy

**Spravato** (esketamine) nasal spray
- Major depressive disorder with imminent risk for suicide

**Uptravi** (salsalate)
- Chronic thromboembolic PH

**RILPIVIRINE**
- rilpivirine/cabotegravir long-acting (LA) HIV maintenance therapy^*

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* Peak non-risk-adjusted sales, including partner sales

Note: Filings/approvals are in the US or EU, unless otherwise noted. This information is accurate as of the date hereof to the best of Johnson & Johnson’s knowledge. The Company assumes no obligation to update this information. Rd: Revlimid and Dexamethasone. VRd: VELCADE, Revlimid and Dexamethasone. ^ In registration.
We are building a broad, deep and sustainable early-stage pipeline...

**Oncology**
- Oncogenic drivers
- Directed T cell therapies
- Comprehensive regimens for immune therapy

**Infectious Diseases & Vaccines**
- Hepatitis-B functional cure
- Respiratory infections
- HIV
- *E. coli* infections
- *S. aureus* prophylactic vaccine
- HPV therapeutic vaccine

**Immunology**
- IL-23 pathways leadership for patients with limited or inadequate treatment options
- Novel localized and systemic oral therapies
- Novel injectables
- Safe and effective combination regimens

**Cardiovascular & Metabolism**
- Next-generation Anti-thrombotics with reduced bleeding complications
- Chronic kidney disease
- Obesity
- Retinal diseases
  - Gene therapy platform, to target novel therapies for inherited retinal diseases

**Neuroscience**
- Glutamate pathway
- Neuronal circuitry
- Neuroimmune function
- Proteinopathy

**Pulmonary Hypertension**
- Realize potential of current therapies
- Accelerate diagnosis
- Build a pipeline of new therapies
We are well-positioned to tap into the explosion in both translatable science and capital funding entrepreneurship in ecosystem

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<tbody>
<tr>
<td>Scientific/medical</td>
<td>&gt;$57B</td>
<td>4,300+</td>
<td>8,500+</td>
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<td>publications in last 5</td>
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<td>years; continuously</td>
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<td>increasing over the last</td>
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<td>decade; 1M+ new</td>
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<td>publications annually</td>
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<td>Biotech venture capital</td>
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<tr>
<td>investment in last 5</td>
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<td>Years. 2018 annual</td>
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<tr>
<td>investment of $17B</td>
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<td>more than triple the</td>
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<td>investment in 2013</td>
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<td>Companies participating</td>
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<td>in pharmaceutical R&amp;D.</td>
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<td>&gt;50% of companies</td>
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<td>headquartered outside</td>
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<td>US with almost 20% in</td>
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<td>China/Asia pacific region</td>
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<td>Licensing and collaborative</td>
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<td>R&amp;D deals in last 5</td>
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<td>years. Total aggregate</td>
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<td>collaborative deal value</td>
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<td>reached its highest in</td>
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<td>last five years, peaked</td>
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<td>in 2018 at $47.3B</td>
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</table>

Only 6% of the active pipeline in the industry originated by top 10 Pharma companies

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1. Scopus Search, Copyright © 2019 Elsevier B.V. All rights reserved. Scopus is a registered trademark of Elsevier B.V.
2. Vantage_PharmaMedtech_2018_Review (Evaluate Pharma Feb 2019)
4. IQVIA pharma deals review of 2018 (IQVIA Mar 2019)
Agnostic of the source, we blur the lines between internal and external innovation

- **New assets since May 2017**
  - Global outreach; 4 innovation centers, 12 JLABS, 2 JPODs
  - Large biotech
  - Large pharma
  - Academia
  - Government
  - Start-ups
  - Venture capital

- **New platforms since May 2017**

- **External collaborations**
  - 500+ companies in JLABS portfolio
  - 80+ companies JJDC has active investment in
  - 140+ active collaborations in 2018

* Includes alumni and active residents
Third, we are embracing the enabling trends and technologies that will shape the future of our industry

Invest in our culture and team

Deliver on today’s promises

Shape the future
We address human health through both a disease and a biological pathway framework.

Note: DAS: Disease Area Stronghold. PAS: Pathway Stronghold.

* New DAS or PAS
Expansion of the tool kit allows us to translate more biology into transformational medicines

**Cell therapy**
Engineer cells and use them as therapeutics
- JNJ-4528 BCMA CAR-T for multiple myeloma
  *Start Ph2b in 2019*

**Gene therapy**
Introduce new DNA containing a functional gene to correct the effects of a disease-causing mutation
- AAV-CNGB3/CNGA3/RGPR for monogenic eye disease
  *Currently in Ph1/2*

**Bacteria (microbiome)**
Translate microbial metagenomics to functional pathways and products to address multiple diseases
- VE202-A 11 Strain for inflammatory bowel disease
  *Currently in Ph1*

**Multispecifics & complex biology**
Engineering multiple antigen binding domains into a single antibody molecule
- BCMA/CD3 GPRC5D/CD3 for multiple myeloma
  *Currently in Ph1/2*

**RNA**
Reducing gene expression with inhibitory RNA or potentiating it with mRNA
- JNJ-3989 siRNA for Hepatitis B
  *Start Ph2b in 2019*

**Oncolytic viruses**
Engineer viruses that can selectively replicate in and kill cancer cells, and deliver therapeutic protein payloads
- T-Stealth™ Platform
  *Start FIH in 2020*
Cell therapy has the potential to change the practice of medicine

**Janssen cell therapy strategy**
Deliver curative cell therapies that transform unmet medical need in oncology and beyond

**Advance current autologous clinical programs rapidly through POC and into registrational studies**

**Enhance manufacturing capabilities and novel operational and logistical approaches**
- Phase 1/2a manufacturing unit operational
- Commercial manufacturing site under construction
- EU manufacturing site under evaluation

**Develop next generation cell therapies to address limitations of autologous products**

**Near-term focus**
Autologous cell therapies in hematologic malignancies

**Long-term focus**
Allogeneic cell therapies in hematologic malignancies and solid tumors
We will first apply gene therapy to anatomically contained regions, including the eye.

**Janssen gene therapy treatment strategy**
A commitment to innovation across critical dimensions of a novel modality

<table>
<thead>
<tr>
<th>Partnering and building internal capabilities to engineer AAV</th>
<th>Innovating delivery</th>
<th>Building manufacturing capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation of gene expression</td>
<td>Delivery of genes into cells to replace defective/missing genes, and to produce protein therapeutics <em>in vivo</em></td>
<td>Capacity to manufacture to demand across disease targets</td>
</tr>
</tbody>
</table>

**Near-term disease focus**
Monogenic eye disease

**Longer-term disease focus**
More common, polygenic eye disease, Neuroscience, Infectious Diseases

Estimated AAV-GT supply required per disease
- Rare eye: $6 \times 10^{14}$
- Alzheimer's: $6 \times 10^{18}$
- Influenza: $2 \times 10^{20}$
RNA therapeutics open the door to currently difficult-to-drug targets

**Janssen RNA Tx Strategy**
Leveraging and expanding on clinically validated gene silencing mechanisms to address recalcitrant indications

<table>
<thead>
<tr>
<th>Build focused pipeline based on “knockdown technology”</th>
<th>Build internal capabilities</th>
<th>Beyond “knockdown”</th>
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<tbody>
<tr>
<td>Partnering in areas of strategic focus</td>
<td>Moving quickly into new opportunities</td>
<td>Expanding the scope of RNA Tx to translation and editing</td>
</tr>
</tbody>
</table>

- **Innovating silencing technology**
- **Advancing extrahepatic targeting**

- **Messenger RNA**
- **Self-replicating RNA**
- **Non-viral delivery systems**

- **HBV**
- **CNS** | **metabolism** | **retinal disease** | **infectious diseases** | **oncology** | **inflammatory GI disorders**
Our sophisticated approach to data and data analytics will impact almost every aspect of the drug creation enterprise.

Internal discovery/External innovation/Early development ➔ Clinical POC ➔ World-class global late development ‘engine’

- **New biological insights and targets**
  e.g., NLP and algorithm-fueled target pursuit

- **More effective discovery of new test therapeutics**
  e.g., world-class computational chemistry capabilities

- **Disease expression and progression**
  e.g., machine-learning to decode disease evolution

- **Step change in trial efficiency**
  e.g., improved trial feasibility, siteless trials, predictive trial management, synthetic control arms

- **Enhanced trial effectiveness**
  e.g., patient stratification

- **Early and rapid patient diagnosis**
  e.g., targeting embedded algorithms in EHRs
### Key takeaways: A sustainable engine of innovation

Janssen R&D is committed to delivering transformational medicines to patients

<table>
<thead>
<tr>
<th>Proven track record of delivering innovation</th>
<th>Well-positioned to deliver in the near-term</th>
<th>Delivering sustainable long-term growth</th>
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<tbody>
<tr>
<td>• A differentiated approach that has reliably delivered for the past decade</td>
<td>• Scientific leadership substantially strengthened</td>
<td>• Embracing actionable biology, through lens of both disease and biological pathway</td>
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<tr>
<td>• Treatment paradigms redefined for many serious diseases; 18 transformational medicines delivered since 2011</td>
<td>• Portfolio reshaped &amp; strengthened to be diverse, and include at least ten transformational medicines in the next five years</td>
<td>• Enabled by new therapeutic modalities</td>
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<td>• Portfolio now incorporates advanced modalities including RNA, gene therapy and cell therapy</td>
<td>• Growing incorporation of data-sciences into all R&amp;D</td>
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<td>• Uniquely situated, with an open mind, in the innovation ecosystem</td>
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</tbody>
</table>

**Potential filings 2019–2023**

- **At least 10 NMEs**, **+$1B potential**
  - **$0.5B potential**

- **>40 LEs**, **10+**
  - **$0.5B potential**

**Rich early-stage pipeline providing broad & deep opportunities for new medicines**

*Note: Filings/approvals are in the US or EU, unless otherwise noted. This information is accurate as of the date hereof to the best of Johnson & Johnson’s knowledge. The Company assumes no obligation to update this information.*