Roche Pharma Day 2019

Commercial Opportunities

Teresa Graham | Head of Global Product Strategy
Roche in a change: We are actively managing the transition

- **Hemophilia A**
- **Neuroscience**
- **Immunology**
- **Infectious disease**
- **Ophthalmology**
- **Lung**
- **GI/GU**
- **Breast**
- **Hematology**

### Replace/extend existing businesses
- **Tamiflu**
- **Lucentis**
- **Avastin**
- **Herceptin**
- **MabThera/Rituxan**
- **Ocrevus**
- **risdiplam**
- **HTT-ASO**
- **satralizumab**
- **balovaptan**
- **faricimab**
- **Port Delivery System**
- **etrolizumab**
- **Gazyva in LN**
- **Xofluza**
- **Tecentriq**
- **Alecensa**
- **Rozytrek**
- **Perjeta**
- **Kadcyla**
- **Ipatasertib**
- **Herceptin + Perjeta FDC**
- **Gazyva**
- **Venclexta**
- **Ponvix**
- **CD20 x CD3 bispecifics**
- **idasanutlin**

### Entering new franchises
- **Hemlibra**
- **MabThera/Rituxan**
- **Lucentis**
- **Avastin**
- **Herceptin**
- **Tamiflu**
- **Ocrevus**
- **risdiplam**
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- **Ponvix**
- **CD20 x CD3 bispecifics**
- **idasanutlin**
Strong short term news flow
Diversifying the late stage pipeline and setting new standards of care

<table>
<thead>
<tr>
<th>Product</th>
<th>Indication</th>
<th>Filing Date</th>
<th>Market Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>risdiplam</td>
<td>SMA</td>
<td>2019 in type 1/2/3</td>
<td></td>
</tr>
<tr>
<td>satralizumab</td>
<td>NMOSD</td>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>HTT-ASO</td>
<td>Huntington’s</td>
<td>Ph II &amp; III ongoing; filing latest 2022</td>
<td></td>
</tr>
<tr>
<td>Gazyva</td>
<td>Lupus Nephritis</td>
<td>initiating Ph III</td>
<td></td>
</tr>
<tr>
<td>etrolizumab</td>
<td>UC/ Crohn’s Disease</td>
<td>filing in UC in 2020</td>
<td></td>
</tr>
<tr>
<td>PDS</td>
<td>nAMD</td>
<td>fully recruited; filing in 2020</td>
<td></td>
</tr>
<tr>
<td>faricimab</td>
<td>nAMD/DME</td>
<td>recruitment ahead of plan; filing in 2021/22</td>
<td></td>
</tr>
</tbody>
</table>
Late stage pipeline

**ONCOLOGY / HEMATOLOGY**

- **Breast, Gyn**
  - HER2+ BC
  - TNBC
  - HR+ BC
  - OC

- **Lung, Skin, Rare**
  - NSCLC
  - SCLC
  - ALK+ NSCLC
  - ROS1+ NSCLC
  - NTRK+ pan tumor
  - SCCHN
  - Melanoma

- **GI/GU**
  - RCC
  - UC
  - CRPC
  - HCC

- **Hematology**
  - CLL
  - DLBCL
  - iNHL
  - AML
  - MM
  - Hemophilia A

**IMMUNOLOGY**

- Ulcerative colitis
- Crohn’s disease
- Nasal polyps
- Lupus Nephritis

**NEUROSCIENCE**

- SMA
- DMD
- Huntington’s
- Autism
- Alzheimer’s
- NMOSD

**OPHTHALMOLOGY**

- nAMD
- DME

**INFECTIOUS DISEASES**

- Influenza A/B
Oncology/Hematology portfolio

**Oncology / Hematology**
- **Breast, Gyn**
  - HER2+ BC
  - TNBC
  - HR+ BC
  - OC
- **Lung, Skin, Rare**
  - NSCLC
  - SCLC
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- **GI/GU**
  - RCC
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- **Hematology**
  - CLL
  - DLBCL
  - iNHL
  - AML
  - MM
  - Hemophilia A

**Immunology**
- Ulcerative colitis
- Crohn’s disease
- Nasal polyps
- Lupus Nephritis

**Neuroscience**
- SMA
- DMD
- Huntington’s
- Autism
- Alzheimer’s
- NMOSD

**Ophthalmology**
- nAMD
- DME

**Infectious Diseases**
- Influenza A/B
Expanding oncology franchise into new tumor types

**Hematology**
- DLBCL
- iNHL
- CLL

**Lung, Skin, Rare Tumors**
- NSCLC
- BRAFm Melanoma

**Breast/Gyn**
- HER2+ BC
- OC

**GI/GU**
- CRC
- UC

2018
- ✔ DLBCL
- ✔ iNHL
- ✔ CLL
- ✔ AML
- ✔ MM

2020
- ✔ NSCLC
- ✔ SCLC
- ✔ ALK+ NSCLC
- ✔ ROS1+ NSCLC
- ✔ NTRK+ Pan Tumor
- ✔ BRAFm Melanoma
- ✔ SCCHN
- ✔ HER2+ BC
- ✔ TNBC
- ✔ HR+ BC
- ✔ OC
- ✔ UC
- ✔ HCC
- ✔ RCC
- ✔ CRPC

CD20 x CD3 bispecifics

CLL=Chronic lymphoid leukemia; DLBCL=Diffuse large B-cell lymphoma; iNHL=Indolent Non-Hodgkin's lymphoma; AML=Acute myeloid leukemia; MM=Multiple myeloma; NSCLC = Non-Small Cell Lung Cancer; SCLC = Small Cell Lung Cancer; SCCHN = Head & Neck Squamous Cell Carcinoma; TNBC = Triple Negative Breast Cancer; OC=Ovarian Cancer; UC = Urothelial Carcinoma; HCC = Hepatocellular Carcinoma; RCC = Renal Cell Carcinoma; CRPC = Castration Resistant Prostate Cancer; CRC = Colorectal Cancer; Nenclexa in collaboration with AbbVie
Advancing medicines into early disease
Curative potential for the largest number of patients

Breast / Gyn

>80% of TNBC pts treated in the adjuvant setting

- IMpassion030: Adj. TNBC
- IMpassion031: Neoadj. TNBC
- GEPARDOUZE: Neoadj/adj. TNBC
- IMpassion050: Neoadj. HER2+ BC

Source: Roche US/EU5 epidemiology; TNBC=triple negative breast cancer; NSCLC=non-small cell lung cancer; MIBC=muscle invasive bladder cancer; NMIBC=non-muscle invasive bladder cancer; RCC=renal cell carcinoma

Lung, Skin, Rare

25-35% of NSCLC patients have resectable disease

- IMpower030: Neoadj. NSCLC
- IMpower010: Adj. NSCLC
- IMvoke010: Adj. SCCHN

GI / GU

>2.5x more patients with early UC than metastatic UC

- IMvigor010: Adj. MIBC
- ALBAN: NMIBC
- IMmotion010: Adj. RCC

- ALINA: Adj. ALK+ NSCLC

- KATHERINE: Adj. HER2+ BC
- KAITLIN: Adj. HER2+ BC

- NEOSPHERE: Neoadj. HER2+ BC
- APHINITY: Adj. HER2+ BC

Source: Roche US/EU5 epidemiology; TNBC=triple negative breast cancer; NSCLC=non-small cell lung cancer; MIBC=muscle invasive bladder cancer; NMIBC=non-muscle invasive bladder cancer; RCC=renal cell carcinoma
HER2+ breast cancer

Perjeta and Kadcyla forecasted to offset biosimilar erosion of Herceptin

Consensus sales estimates: HER2+ franchise¹

<table>
<thead>
<tr>
<th>Year</th>
<th>Herceptin</th>
<th>Perjeta</th>
<th>Kadcyla</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018A</td>
<td>77k</td>
<td>15%</td>
<td>50%</td>
</tr>
<tr>
<td>2019E</td>
<td>77k</td>
<td>15%</td>
<td>50%</td>
</tr>
<tr>
<td>2020E</td>
<td>77k</td>
<td>15%</td>
<td>50%</td>
</tr>
<tr>
<td>2021E</td>
<td>77k</td>
<td>15%</td>
<td>50%</td>
</tr>
<tr>
<td>2022E</td>
<td>77k</td>
<td>15%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Herceptin decline offset by Perjeta and Kadcyla

Current standard of care in eBC³

- APHINITY uptake in adjuvant fuels Perjeta growth
- KATHERINE launch driving Kadcyla growth in patients with residual disease

1. Source: Evaluate Pharma; 2. Epidemiology EU5 & US; 3. Adapted based on St Gallen Breast Cancer Conference 2019; eBC=Early Breast Cancer
**Herceptin + Perjeta Subcutaneous Fixed Dose Combination**

*Reduced administration time, SC route strongly preferred by patients*

<table>
<thead>
<tr>
<th>Treatment option</th>
<th>Administration and observation schedule*</th>
<th>Total time</th>
</tr>
</thead>
<tbody>
<tr>
<td>H IV P IV</td>
<td>0.5 - 1.5 hours → 2 - 6 h → 1h → 1h</td>
<td>~2.5-7.5 hours</td>
</tr>
<tr>
<td>H SC P IV</td>
<td>2 - 5 min → 2 - 6 h → 1h → 1h</td>
<td>~2-6 hours</td>
</tr>
<tr>
<td>PH FDC SC</td>
<td>5 - 8 min → 15 - 30 min</td>
<td>~20-38 min</td>
</tr>
</tbody>
</table>

- Positive Ph III (FeDeriCa) results show H+P FDC SC achieves equivalent serum concentrations as IV at cycle 7 in neoadjuvant HER2+ eBC
- SC formulations result in reduced drug delivery related healthcare costs and resource use
- US/EU filing in 2019/20

H+P=Herceptin+Perjeta; FDC=fixed dose combination; SC=subcutaneous; IV=intravenous; *Ranges driven by differences in loading and maintenance dose; H+P FDC SC in collaboration with Halozyme
TNBC and HR+/HER2- breast cancer

Strong growth for Tecentriq in 1L TNBC, with potential expansion in eBC

Tecentriq first in class in 1L TNBC

- **Tecentriq**
  - First and only CIT approved in TNBC
  - US market share >50%

- **ipatasertib**
  - Phase 3 data in TNBC and HR+ BC expected 2020

RG6114 (PI3K inhibitor)

- Advancing to Phase 3

Tecentriq and HR+/HER2- breast cancer

15% of TNBC is HER2+ and 20% is HR+

- ~40% PD-L1+
- ~35-45% Dx+1

Key readouts and new studies in TNBC and HR+ BC

- **ipatasertib**
  - IPATUNITY130: 1L TNBC/HR+ mBC
  - IPATUNITY150: 1L HR+ mBC (+palbo)
  - IPATUNITY170: 1L TNBC (+Tecentriq)

Three ongoing trials for Tecentriq in early TNBC

- IMpassion030: adjuvant TNBC
- IMpassion031: neoadjuvant TNBC
- GEPARDOUZE: neoadjuv./adj. TNBC

Significant market opportunity moving to eBC

- ~4.5x more pts treated in early TNBC than 1L

EU5: 58k
US: 15k
EU5: 22k
US: 15k
EU5: 48k
US: 15k

1. PI3K/AKT mutant/PTEN low; 2. Source: Roche; TNBC=Triple Negative Breast Cancer; eBC=Early Breast Cancer
## Lung cancer

**Broad coverage with differentiated growth opportunities**

### Executing on launches in 1L lung cancer

<table>
<thead>
<tr>
<th>Drug</th>
<th>Market Share</th>
<th>US New Patient Share</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tecentriq</td>
<td>SCLC 15%</td>
<td></td>
<td>Strong launch in 1L SCLC; gaining traction in 1L NSCLC subgroups</td>
</tr>
<tr>
<td>Alecensa</td>
<td>NSCLC 40-45%</td>
<td>&gt;70%</td>
<td>Continued uptake in 1L ALK+ with new pt share in US</td>
</tr>
<tr>
<td>Rozlytrek</td>
<td>NSq NSCLC 40-45%</td>
<td></td>
<td>Launch ongoing in ROS1+ NSCLC, NTRK+ (tumor agnostic)</td>
</tr>
</tbody>
</table>

### Lung cancer market growing to USD 33bn by 2024

1. Source: Evaluate Pharma; 2. Source: Roche; NSCLC=Non-Small Cell Lung Cancer

### Further growth potential in early NSCLC

- 25-35% of patients have resectable disease
- **Tecentriq**
  - 380k patients
  - EU5: NSCLC incidence
  - US: Non-Metastatic mNSCLC incidence
  - 120k patients
  - EU5: Non-Metastatic mNSCLC incidence
  - US: NSCLC incidence
  - 260k patients
  - EU5: NSCLC incidence
  - US: Non-Metastatic mNSCLC incidence

### Three pivotal trials ongoing in early NSCLC

- IMpower030: Neoadj. NSCLC
- IMpower010: Adjuvant NSCLC
- ALINA: Adjuvant ALK+ NSCLC
Gastrointestinal (GI) and Genitourinary (GU) cancers
First-in-class potential in multiple tumor types

**Growth opportunities in 1L mUC and 1L HCC**

**Tecentriq**
- Positive Ph 3 data in 1L mUC
- Expected to be first CIT agent in chemo-eligible patients
- Ph3 data in 1L HCC exp. 2019

**ipatasertib**
- Ph3 data in mCRPC exp. 2020

**GI/GU market growing to 34b USD by 2024**

**Further growth potential in early disease**

First in-class potential for Tecentriq in adjuvant MIBC and RCC

<table>
<thead>
<tr>
<th>1L MIBC</th>
<th>2L MIBC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>110k</strong></td>
<td><strong>35k</strong></td>
</tr>
<tr>
<td><strong>150k</strong></td>
<td><strong>75k</strong></td>
</tr>
<tr>
<td><strong>50k</strong></td>
<td><strong>40k</strong></td>
</tr>
</tbody>
</table>

**Three ongoing trials in early GI/GU cancers**

**TECENTRIQ**
- IMbrave150: 1L HCC
- IPATENTIAL150: mCRPC

<table>
<thead>
<tr>
<th>1L</th>
<th>2L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1L RCC</td>
<td>2L RCC</td>
</tr>
<tr>
<td><strong>110k</strong></td>
<td><strong>35k</strong></td>
</tr>
<tr>
<td><strong>150k</strong></td>
<td><strong>75k</strong></td>
</tr>
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**1. Source:** Evaluate Pharma; HCC=Hepatocellular Carcinoma; mUC=metastatic urothelial carcinoma; CIT=Cancer Immunotherapy; CRPC=Castration Resistant Prostate Cancer; RCC=Renal Cell Carcinoma; NMIBC=Non-Muscle Invasive Bladder Cancer; MIBC=Muscle Invasive Bladder Cancer
Hematology
Building upon our leadership & experience with transformative medicines

Continuing to redefine the SOC in B-cell malignancies

Gazyva + Venclexta 1L CLL launch:
• Fixed dose, chemo free option for patients

Polivy 3L+ DLBCL launch, pivotal trial ongoing in 1L DLBCL:
• Off the shelf treatment with strong efficacy and safety profile

CD20 x CD3 bispecifics:
• Developing as monotherapy in later lines, rapidly moving into early line combinations

Expanding into new hematologic diseases

Venclexta launch in 1L AML:
• High unmet need in disease with few treatment options

Venclexta in pivotal trial in MM
~20% of MM patients with t11:14 translocation

Key upcoming readouts in NHL, CLL

POLIVY
CD20 x CD3 bispecifics
3L aNHL and FL

CD20 x CD3 TCB
mosunetuzumab
CLL 13%
DLBCL 17%
iNHL 37%
MDS 7%
MM 17%
AML 9%
ALL 3%

Key upcoming readouts in MM, AML

CANOVA: MM (t11:14)
idosanutlin
MIRROS: R/R AML

Datamonitor: incidence rates includes the 7 major markets (US, Japan, France, Germany, Italy, Spain, UK); CLL=Chronic lymphoid leukemia; DLBCL=Diffuse large B-cell lymphoma; iNHL=Indolent Non-Hodgkin’s lymphoma; AML=Acute myeloid leukemia; MM=Multiple myeloma; MDS=Myelodysplastic syndrome; ALL=Acute lymphoblastic leukemia; Venclexta in collaboration with AbbVie
Hemophilia
Hemlibra provides a transformational advance for patients

**Annualized sales >1bn within 9m of approval in non-inhibitors**

- US: ~14% total market share as of HY
- 95% of patients surveyed preferred Hemlibra to their prior therapy (5% had no preference)

**Total HA market growing to USD 12bn by 2024**

1 Source: Evaluate Pharma; PWHA=People with Hemophilia A; Source: Treated patients MORSE 2017 (prevalence), UKHCDO Annual Report 2016 and internal assumptions (treatment rate)
Immunology, Ophthalmology, and Infectious Diseases

**ONCOLOGY / HEMATOLOGY**
- Breast, Gyn
  - HER2+ BC
  - TNBC
  - HR+ BC
  - OC
- Lung, Skin, Rare
  - NSCLC
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  - ALK+ NSCLC
  - ROS1+ NSCLC
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  - HCC
- Hematology
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  - UC
  - CRPC
  - HCC

**IMMUNOLOGY**
- Ulcerative colitis
- Crohn's disease
- Nasal polyps
- Lupus Nephritis

**OPHTHALMOLOGY**
- nAMD
- DME

**INFECTIOUS DISEASES**
- Influenza A/B

**NEUROSCIENCE**
- SMA
- DMD
- Huntington’s
- Autism
- Alzheimer's
- NMOSD
Ulcerative Colitis (UC) and Crohn’s Disease (CD)
Potential for disease leading profile in markets with unmet need

IBD market

~1.3M IBD patients in US/EU5 with moderate-severe disease
- Average age of diagnosis: 15-30yrs old
- Use of targeted therapies is growing with new MOAs

Global IBD market growing to ~20b USD by 2024

etrolizumab

Potential for improved efficacy
- High unmet need still in market with only 10-30% of patients achieving sustained remission and frequent surgical interventions
- Etrolizumab differentiated among integrin class by dual mode of action: blocking leukocyte trafficking (via α4β7) and lymphocyte retention (via αEβ7)

Best-class dosing profile
- Monthly SC administration

Key upcoming readouts:
- HIBISCUS I/II: TNF-naïve, induction (vs. Humira)
- GARDENIA: TNF-naïve, sustained remission (vs. Remicade)
- LAUREL: TNF-IR, maintenance
- HICKORY: TNF-IR, induction and maintenance
- BERGAMOT: moderate-to-severe CD

Lupus Nephritis (LN)

Gazyva has the potential to be the first approved therapy in LN

Diversity in clinical trials initiative

- Lupus disproportionately affects women and minorities
- Approximately half of the patients in Ph2 NOBILITY trial were non-white

Systemic lupus erythematosus (SLE)

~40% of patients with proliferative disease (Grade 3/4)

~165k patients in US/EU5 with Lupus Nephritis

Lupus Nephritis

Demonstrated efficacy in randomized Ph2 trial
- Data to be presented at upcoming medical conference

No approved therapies for LN in the US
- >20% of patients currently progress to End Stage Renal Disease within 15 years

Dosing convenience
- Exploring q6m dosing after first year

BTD submission
- Actively engaging with health authorities about path forward

1. Source: Roche; LN=Lupus Nephritis; SLE=Systemic lupus erythematosus; BTD=breakthrough therapy designation
Ophthalmology
Roche has the broadest Ph3 pipeline in retina

High unmet medical need in retinal diseases

- ~9.7M patients in US/EU5 with nAMD or DME
- High treatment burden of anti-VEGF therapies in real world associated with suboptimal visual outcomes
- Growing market driven by aging population and incidence of diabetes

Total retina medical market USD ~10bn in 2018

Opportunities for improved durability or efficacy

Key upcoming readouts in ophthalmology

Port Delivery System faricimab

- ARCHWAY: nAMD
- YOSEMITE/RHINE: DME
- TENAYA/LUCERNE: nAMD

Reduced frequency of injection
Influenza

Expanding into new segments with first new MOA in 20 years

Baloxavir marboxil was discovered by Shionogi & Co., Ltd. and is being developed globally by the Roche Group (which includes Genentech in the U.S.) and Shionogi & Co., Ltd. Under the terms of this agreement, Roche holds worldwide rights to baloxavir marboxil excluding Japan and Taiwan, which will be retained exclusively by Shionogi & Co., Ltd.; OwH=Otherwise healthy patients.

**Potential of first in disease in high-risk and hospitalized patients**

- **Single dose**
  - Improved convenience, compliance vs. Tamiflu course of treatment (twice daily for 5 days)

- **Activity against Tamiflu resistant strains**

- **Activity against avian strains H7N9 and H5N1**

- **Safety comparable to placebo**
  - Less frequent nausea than Tamiflu in Ph 3 CAPSTONE study

- **Prophylaxis**
  - Xofluza reduced the risk of developing flu by 86% in Ph 3 post-exposure prophylaxis study (BLOCKSTONE)

**Revenue Potential**

- Segments: OwH, High Risk, Pediatrics, Hospitalized, Pandemic

**Peak revenue opportunity > CHF 1bn**

Baloxavir marboxil is a single-dose oral influenza inhibitor that prevents the replication of influenza virus by inhibiting the viral RNA polymerase. It is being developed by the Roche Group and Shionogi & Co., Ltd. for the treatment and prophylaxis of influenza. The drug offers improved convenience and compliance compared to existing treatments like Tamiflu, which requires twice-daily dosing for 5 days. Baloxavir marboxil also shows activity against Tamiflu-resistant strains and avian strains H7N9 and H5N1. Its safety profile is comparable to placebo, with less frequent nausea than Tamiflu. Xofluza has demonstrated an 86% reduction in the risk of developing flu in a post-exposure prophylaxis study. The revenue potential is illustrative and not to scale.
Neuroscience and Rare Diseases

**ONCOLOGY / HEMATOLOGY**

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- DME

**INFECTIOUS DISEASES**

- Influenza A/B

**NEUROSCIENCE**

- SMA
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- NMOSD
Multiple Sclerosis (MS)

Ocrevus remains #1 approved therapy in the US; gaining share globally

Source: 1. Symphony Health, rolling 3-month prescriber-based data, includes both naïve and switch patients 2. Evaluate Pharma; PML=Progressive multifocal leukoencephalopathy; RMS=Relapsing Multiple Sclerosis; PPMS=Primary Progressive Multiple Sclerosis

• **Efficacy:** slowing progression of disease across RMS/PPMS
• **Safety:** >120k patients treated, no PML cases related to drug
• **Convenience:** dosing every 6 months
• **Access:** pricing strategy enables broad payer coverage

New to brand patient share (US)

Nearly 4/10 new patients prescribed Ocrevus in US

Total MS market USD ~23bn in 2018

Ocrevus annualized sales ~3.6b CHF

Sales CHF

Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2

+60%

Int'l
EU
US

2018 2019

FY'17 HY'18 FY'18 HY'19

30% 35% 40%

Int'l EU US

2018
Spinal Muscular Atrophy (SMA)
Potential to be treatment of choice for majority of SMA patients

Unmet need remains across SMA

<table>
<thead>
<tr>
<th>gene therapy</th>
<th>nusinersen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Durability</strong></td>
<td><strong>Burden of IT administration</strong></td>
</tr>
<tr>
<td>• Little data beyond 3 years</td>
<td>• Especially significant with scoliosis</td>
</tr>
<tr>
<td>• Potentially confounded by follow-on therapy</td>
<td>• Accumulation of repeat lumbar punctures</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td><strong>Safety</strong></td>
</tr>
<tr>
<td>• Acute serious liver injury warning</td>
<td>• Meningitis and hydrocephalus cases</td>
</tr>
<tr>
<td>• Systemic corticosteroid immunosuppression for ≥ 2 months</td>
<td></td>
</tr>
<tr>
<td><strong>Limited population</strong></td>
<td><strong>Evidence in adults</strong></td>
</tr>
<tr>
<td>• Not approved &amp; limited data in pts &gt;2 years old (~90% of SMA)</td>
<td>• Lack of pivotal trial data in patients &gt; 9 years old at treatment initiation</td>
</tr>
</tbody>
</table>

~70% of U.S. SMA patients are not currently receiving disease modifying therapy

**risdiplam**

**Oral therapy with best-in-class efficacy potential**
• Compelling efficacy seen in Type 1, despite advanced age
• Durably increases SMN throughout CNS and periphery
• Rapid treatment sparing need for IT & immunosuppression

**Strong Safety Profile**
• To date, no drug-related safety findings leading to withdrawal in any study

**Broader clinical trial program**
• Pre-symptomatic to older adults. Naïve & pre-treated.
• Ph3 RCT in 2-25 yr old Type 2/3 SMA reading out in 2019

• Filing for broad labels in 2019 (US) and 1H’20 (EU)
Huntington’s Disease (HD)

**HTT-ASO has potential to be first disease modifying agent in HD**

![Diagram showing progression of Huntington's Disease](image)

**~80k patients in the US/EU with ‘Manifest’ HD (4x size of SMA)**

**HTT-ASO**

**Strong mechanistic hypothesis**
- Demonstrated reduction of mHTT beyond target levels (singular mechanistic driver of disease)

**First in disease potential**
- No available therapies that prevent onset or slow progression. Ph 3 GENERATION HD1 trial actively recruiting patients; no other competitors in pivotal trials

**Broad coverage of all Huntington’s alleles**
- No additional genotyping required (lengthy, costly)

**Convenient dosing**
- Dosing q8w and q16w

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**HD market size estimated ~5bn USD**

Source: 1. Roche internal estimate; mHTT=mutant Huntingtin protein; HTT-ASO licensed from IONIS Pharmaceuticals
Roche and healthcare systems work together to deliver rapid, broad and sustainable access to innovative therapies

**risdiplam**
access preparation

- > 30 countries are currently preparing for pre-approval access
- Expanding global access to risdiplam by addressing barriers in healthcare system capacity
  - Working with affiliates to demonstrate total risdiplam value to healthcare system across all patient segments
  - Working with patient community to improve access for SMA patients

**HTT-ASO**
access preparation

- Develop evidence for regulators and payers on total HTT-ASO value
- Provide faster access in all countries
  - Ensure infrastructure/capacity is in place including intrathecal (IT) administration that patients can start and stay on HTT-ASO
  - Understand funding and financing gaps in RoW markets and co-develop end to end access solutions

**satralizumab**
access preparation

- Optimize & accelerate sustainable access for NMOSD patients to satralizumab
  - Leveraging policy efforts to raise awareness on NMOSD unmet need and severity of disease
  - Working with affiliates to identify alternative innovative access solutions

SMA=spinal muscular atrophy; RoW=rest-of-the-world; NMOSD=neuromyelitis optica spectrum disorders
Roche Pharma in China

Multiple policies issued to encourage drug innovation

Company in oncology
#4 multinational Pharma company overall

>3b CHF
annualized pharma sales
(HY growth +54%)

Full value chain
>3,500 Roche employees
(Re-D, Marketing, Medical, Manufacturing)

China Market Changes

REIMBURSEMENT

Herceptin, Avastin, Mabthera added to NRDL
1.4bn people covered by NRDL; 98% of healthcare spend under public insurance

REGULATORY SPEED

Alecensa China approval within 9 months of US

1. Source: IMS Hospital audits 2018; NRDL: National Reimbursement Drugs List
Doing now what patients need next