Rejuvenating the portfolio

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2 legislative and regulatory developments and economic conditions;
3 delay or inability in obtaining regulatory approvals or bringing products to market;
4 fluctuations in currency exchange rates and general financial market conditions;
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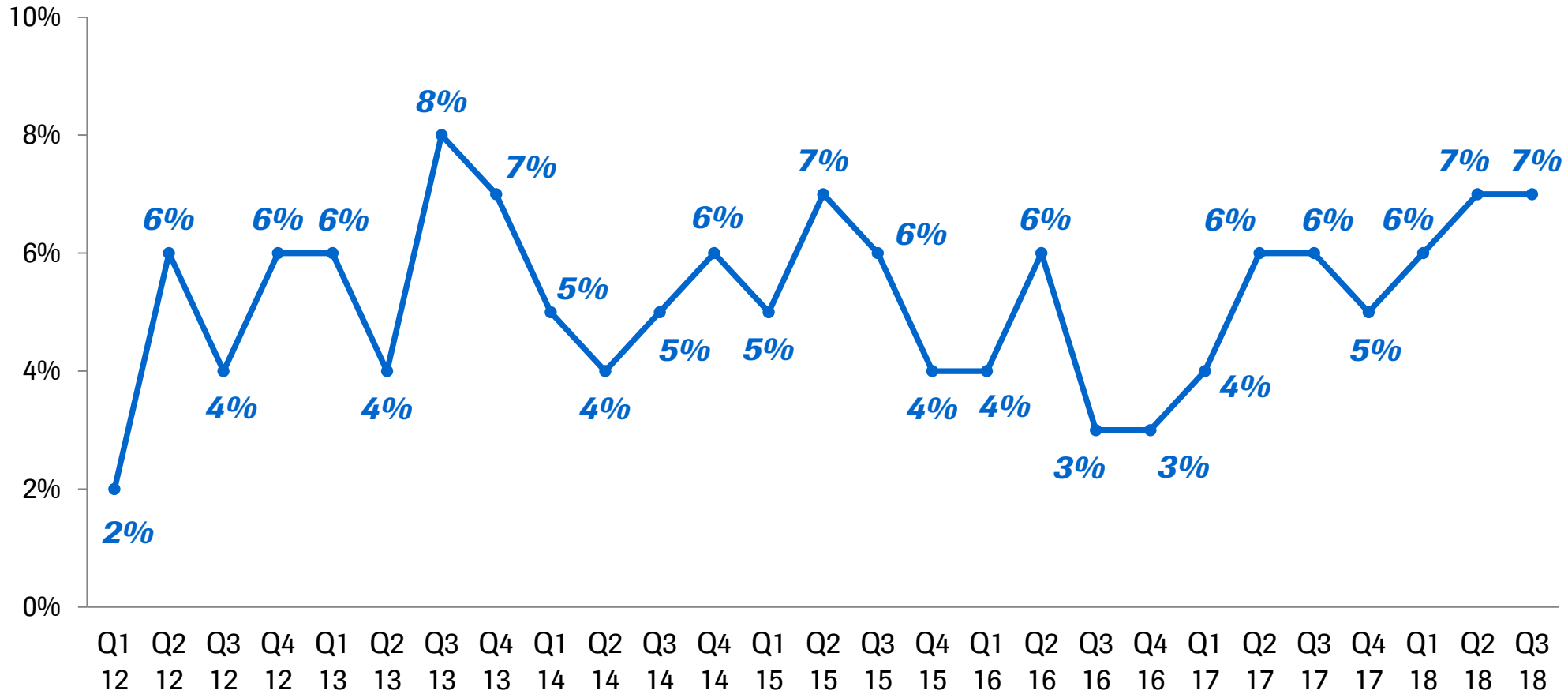
Performance update

Rejuvenating the portfolio

Outlook

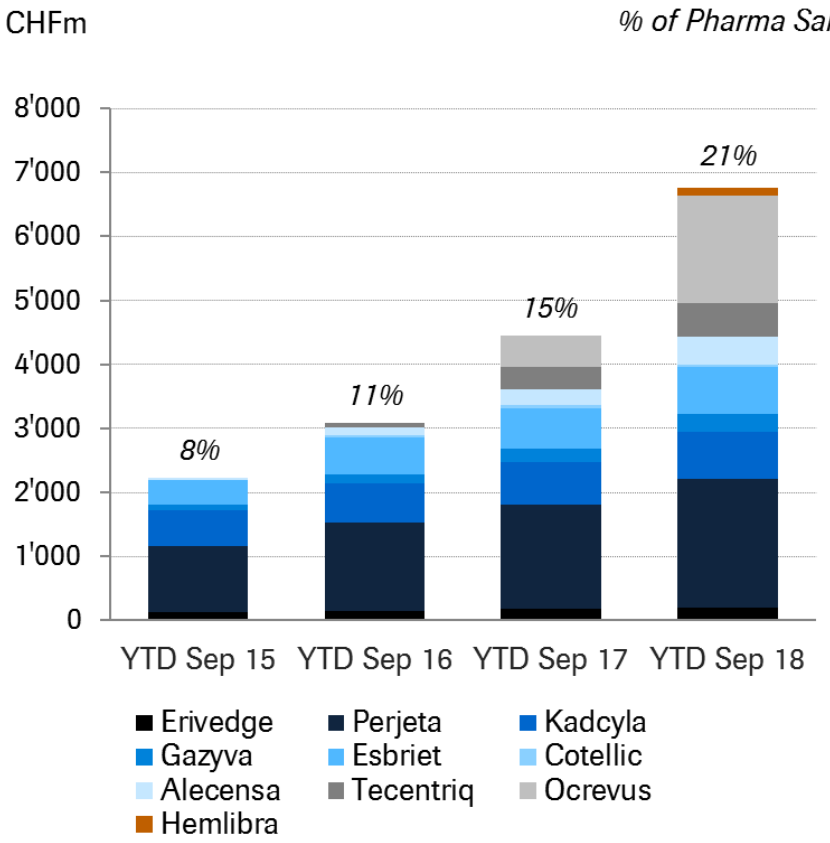
Q3 2018: Sales growth for the seventh consecutive year

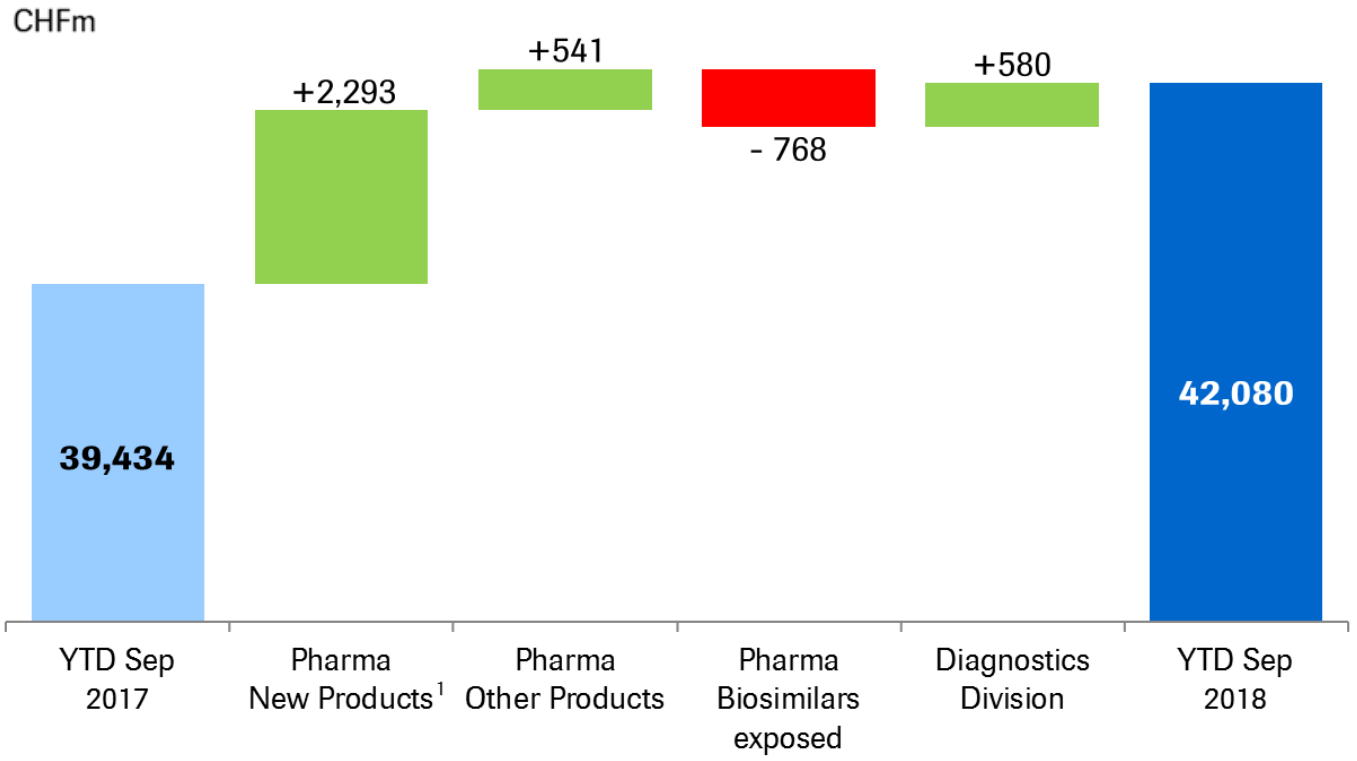


All growth rates at Constant Exchange Rates (CER)

YTD 2018: New launches driving growth, offsetting biosimilars

~90% of growth driven by new products

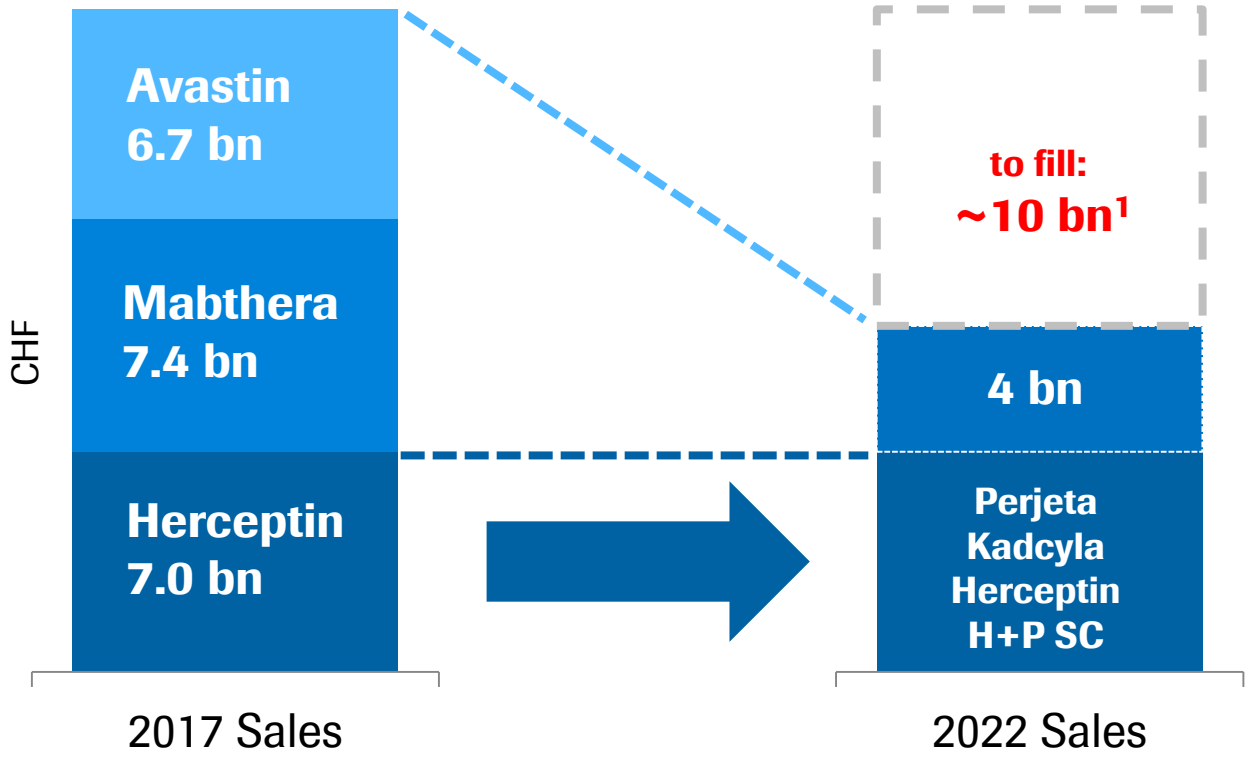




[1] Erivedge, Perjeta, Kadcyla, Gazyva, Esbriet, Cotellic, Alecensa, Tecentriq, Ocrevus, Hemlibra

New product growth expected to show strong momentum
Considerable optionality

***Sensitivity analysis**: Assuming conservative planning assumptions of 60-70% erosion from biosimilars*



2017-2022 consensus sales growth* (CHF)

Ocrevus	4.5 bn
Tecentriq	2.3 bn
Hemlibra	2.1 bn
Gazyva	1.0 bn
Alecensa	1.1 bn
In-market & mature[2]	(0.6 bn)
Pipeline value[3]	0.4 bn
Total	**~11 bn**

Up-side potential to consensus above are: Venclexta, SMA (risdiplam), **Huntington** (HTT-ASO), **Autism** (balovaptan), **Alzheimer** (gantenerumab & crenezumab), **Ophthalmology** (Port Delivery System), **Infectious disease** (baloxavir marboxil), **Oncology** (idasanutlin, ipatasertib, mosunetuzumab)

*** Source: Roche post-HY2018 consensus**; 1 Gap value including the total HER2 franchise change from 2017 to 2022, assuming Lucentis will be replaced by faricimab; 2 Esbriet, Tarceva, Xolair, Pulmozyme, Rocephin, CellCept, Mircera, NeoRecormon/Epogin, Activase/TNKase, Xeloda, Valcyte/Cymevene, Actemra, Tamiflu, Madopar, Pegasys; 3 etrolizumab

Performance update

Rejuvenating the portfolio

Outlook

BTDs and priority reviews reflecting the quality of our research

23 *Breakthrough Therapy Designations (BTD)*

Year	Molecule	Indication
2018	**Xolair**	(Food allergies)
	Tecentriq + Avastin	(HCC)
	Hemlibra	(Hemophilia A non-inhibitors)
	entrectinib	(ROS1+ NTRK+ solid tumors)
	balovaptan	(Autism spectrum disorders)
2017	**polatuzumab vedotin + BR**	(R/R DLBCL)
	Venclexta + LDAC	(1L unfit AML)
	Zelboraf	(BRAF-mutated ECD)
	Rituxan	(Pemphigus vulgaris)
2016	**Actemra**	(Giant cell arteritis)
	Alecensa	(1L ALK+ NSCLC)
	Ocrevus	(PPMS)
	Venclexta + HMA	(1L unfit AML)
	Venclexta + Rituxan	(R/R CLL)
2015	**Actemra**	(Systemic sclerosis)
	Tecentriq	(NSCLC)
	Venclexta	(R/R CLL 17p del)
	Hemlibra	(Hemophilia A inhibitors)
2014	**Esbriet**	(IPF)
	Lucentis	(Diabetic retinopathy)
	Tecentriq	(Bladder)
2013	**Alecensa**	(2L ALK+ NSCLC)
	Gazyva	(1L CLL)

6 *Current priority reviews granted*

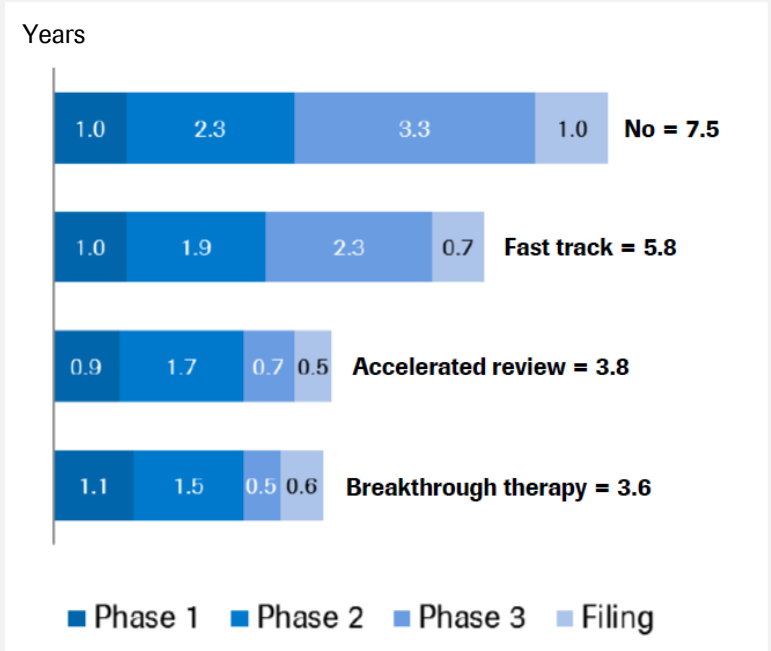
Year	Molecule	Indication
YTD 2018	**Venclexta + HMA/LDAC**	(1L unfit AML)
	MabThera	(Pemphigus vulgaris)
	Hemlibra	(Hemophilia A non-inhibitors)
	baloxavir marboxil	(Influenza A and B)
	Tecentriq + Avastin	(1L NSCLC)
	Xolair	(Pre filled syringe)

7 *Breakthrough Device Designations*

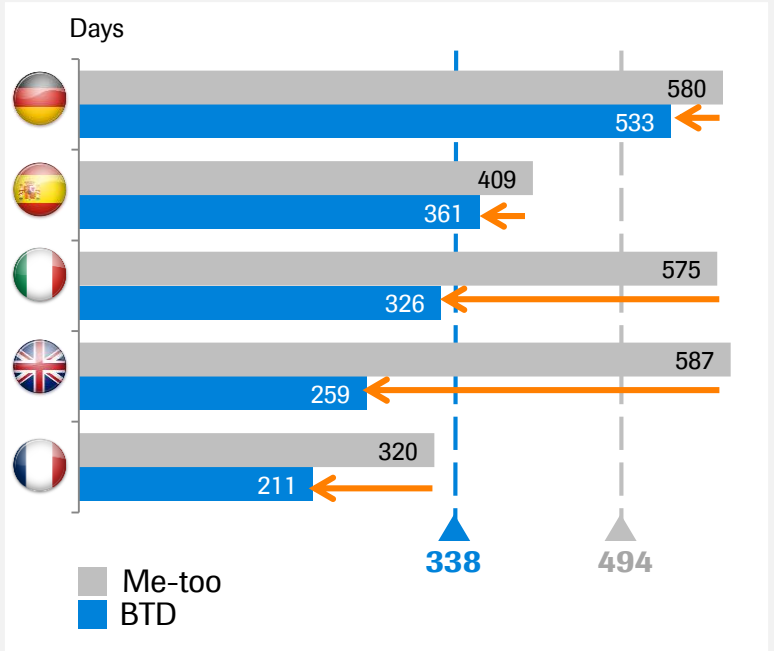
Year	Device	Intended use
2018	**Elecsys® β-Amyloid + p-Tau Cerebro Spinal Fluid assays**	(AD: PET concordance) (AD: Progression)
	sFlt + PLGF	(Preeclampsia: rule-out within 1w)
	FACT CDx (liquid biopsy assay)	(70 oncogenes + MSI + bTMB)
	cobas® EBV	(EBV in transplant patients)
	cobas® BKV	(BKV in transplant patients)
	CoaguChek Direct-X	(patients on Factor Xa)

Breakthrough innovation remains key for pharma

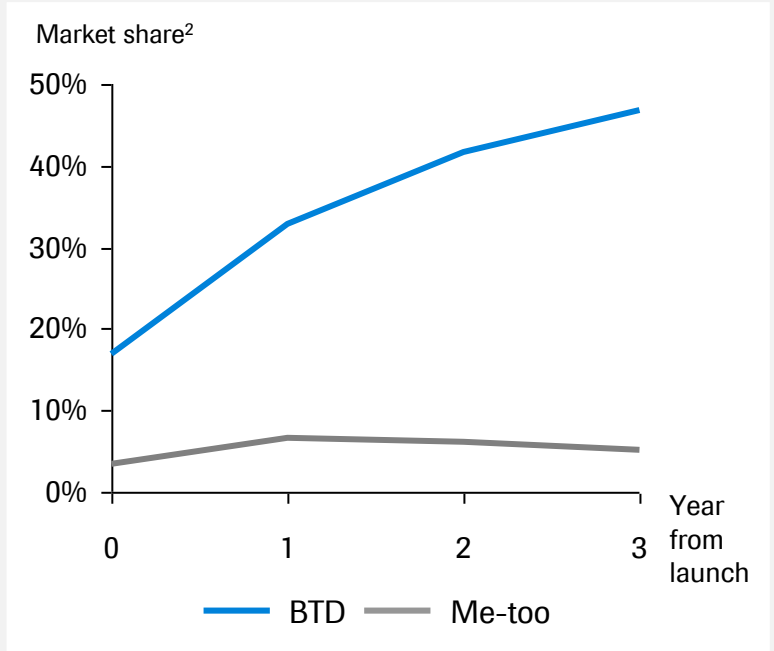
FDA phase duration



EU5 reimbursement timelines[1]



Product launch uptake in oncology[1]



Roche: Highest number of BTDs in the industry reflecting the quality of our research

1 Selected oncology products launched over 2013-2016; 2 Market shares represent sales of target product relative to sales competing products in similar indications; BTD=Breakthrough Therapy Designation; Data source: Evaluate Pharma, Decision Resources, Prismaccess

Near term pipeline carries significant revenue potential

Submission	Molecule	Indication	Market opportunity
2018	Hemlibra	Hemophilia A, non-inhibitors	●◕●
	polatuzumab vedotin	R/R DLBCL	●●●
	Venclexta	1L AML	●◑○
	Tecentriq	1L NSq NSCLC	●●●
	Tecentriq	1L ES SCLC	●●●
	Tecentriq	1L TNBC	●◑○
	Tecentriq + Avastin	RCC	●◑○
2019	entrectinib	NSCLC ROS1+, NTRK1	●◑○
	idasanutlin	AML	●◑○
	Tecentriq+Cotellic+/-Zelboraf	BRAFm Mel, BRAFwt Mel	●●●
	Tecentriq	neoadj TNBC	●◑○
	Venclexta + Gazyva	1L CLL	●●●
	Tecentriq + Avastin	1L HCC	●●●
2020	ipatasertib	1L CRPC, 1L TNBC, HER2-/HR+ BC	●●●
	Tecentriq	1L mUC	●○○
	Tecentriq	CRPC	●◑○
	Tecentriq + Avastin	1L OC	●◑○
2021	polatuzumab vedotin	1L DLBCL	●●●

Submission	Molecule	Indication	Market opportunity
2018	baloxavir marboxil	Influenza A & B	●◕○
2019	satralizumab	Neuromyelitis optica	●○○
2020	risdiplam	SMA	●●●
	anti-myostatin	DMD	●●●
2021	crenezumab	Alzheimer's disease	●●●
	HTT-ASO	Huntington's disease	●●●
	balovaptan	Autism	●●●
	PDS	wAMD	●●●
	faricimab	DME	●●●
	etrolizumab	UC/CD	●●●

- Oncology / Hematology
- Ophthalmology
- Neuroscience
- Immunology
- Infectious disease

●○○ Small: up to CHF 0.5 bn

●◑○ medium= CHF 0.5 to CHF 1bn

●●● large > CHF1bn

Replace and extend the business

Through continuously improving standard of care

Replace existing businesses

MabThera/Rituxan	Gazyva, Venclexta, polatuzumab vedotin, Subcutaneous
Herceptin	Perjeta, Kadcyla, Subcutaneous
Avastin	Tecentriq, entrectinib, ipatasertib
Lucentis	VA2, Port Delivery System
Tamiflu	baloxavir marboxil

Entering new franchises

MS:
Ocrevus

Hemophilia A:
Hemlibra

CNS:
SMA, Autism, Huntington's, Alzheimer's

Why did we get more optimistic over the past years?

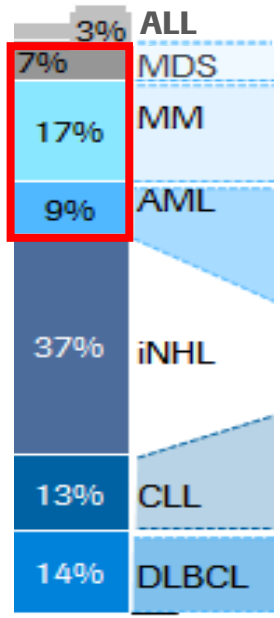
(+) **New molecular entities fast approval and up-take** for Ocrevus, Alecensa, Perjeta, Venclexta, Hemlibra

(+) **Pipeline development with highest number of NMEs**, in particular in CNS, Ophthalmology, Infectious Diseases

VA2=aVEGF/ANG2 biAB; MS=multiple sclerosis; SMA=spinal muscular atrophy; RMS=relapsing MS; PPMS=primary progressive MS; iNHL=indolent Non-Hodgkin`s lymphoma; NSCLC=non-small cell lung cancer; ES-SCLC=extensive stage small cell lung cancer; RCC=renal cell carcinoma; TNBC=triple negative breast cancer; eBC=early breast cancer; R/R CLL=relapsed/refractory chronic lymphocytic leukemia; DME=diabetic macular edema; wAMD=wet age-related macular degeneration

Priority: Transforming standard of care in oncology

Hematology (33 USD bn)



VENCLEXTA venetoclax tablets

VENCLEXTA venetoclax tablets

VENCLEXTA venetoclax tablets

idasanutlin

Rituxan Rituximab | RituxanHYCELA rituximab/hyaluronidase human subcutaneous injection

GAZYVA obinutuzumab injection

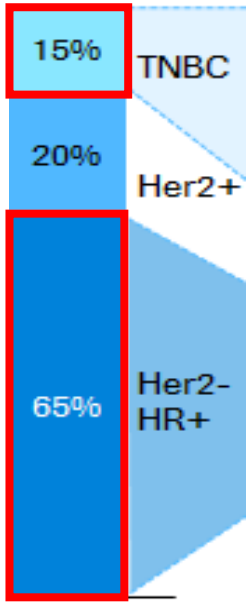
VENCLEXTA venetoclax tablets

polatuzumab vedotin

mosunetuzumab (CD20/CD3 TCB)

Incidence rates (330,000 pts)[1]

Breast (14 USDbn)



ipatasertib

TECENTRIQ atezolizumab

Herceptin trastuzumab Precision • Power • Promise

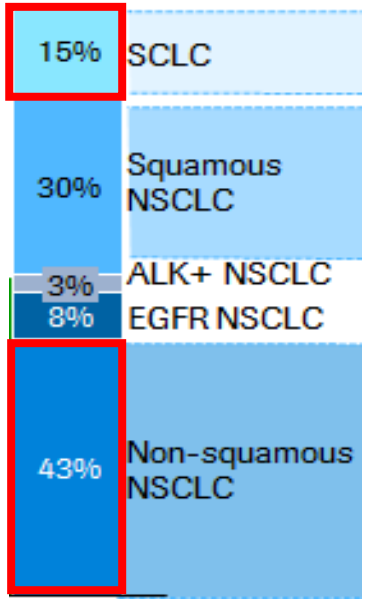
PERJETA

Kadcyla trastuzumab emtansine

ipatasertib

Incidence rates (490,000 pts)[1]

Lung (12 USDbn)



TECENTRIQ atezolizumab

TECENTRIQ atezolizumab

ALECENSA alectinib 150 mg capsules

Tarceva erlotinib

entrectinib

TECENTRIQ atezolizumab

AVASTIN bevacizumab Solution for intravenous infusion

Incidence rates (560,000 pts)[1]

Extending market leadership

Entering new markets

Play a key role in defined cancers

New market opportunities

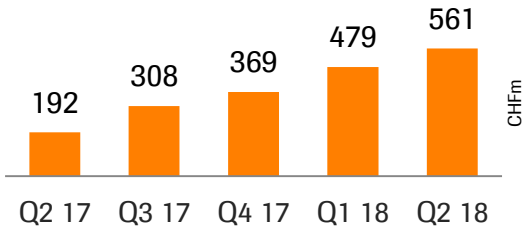
1. Datamonitor: incidence rates includes the 7 major markets (US, Japan, France, Germany, Italy, Spain, UK); CLL=Chronic lymphoid leukemia; DLBCL=Diffuse large B-cell lymphoma; iNHL=Indolent Non-Hodgkin's lymphoma; AML=Acute myeloid leukemia; MM=Multiple myeloma; MDS=Myelodysplastic syndrome; ALL=Acute lymphoblastic leukemia; TNBC=Triple Negative Breast Cancer; SCLC=Small Cell Lung Cancer; NSCLC=Non-Small Cell Lung Cancer

Priority: Accelerate success of recent launches

Successful launches across multiple disease areas

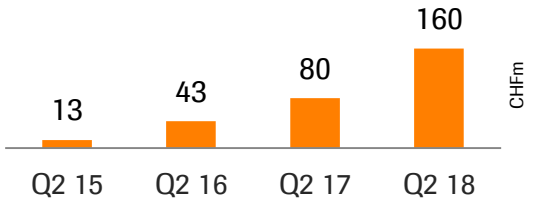
OCREVUS ocrelizumab

- Blockbuster in just 10 months
- 12% total market share (US)
- ~35% share of new/switch patients



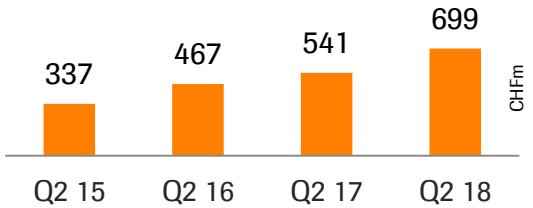
ALECENSA alectinib 150 mg capsules

- US market leadership in 1L ALK+ NSCLC achieved within 8 months of launch
- China National Drug Administration granted rapid approval



PERJETA pertuzumab

- Accelerated growth by adjuvant launch
- Listed on NCCN, St. Gallen



Key line extensions

HEMLIBRA emicizumab

Non-inhibitor launch started in Q4 2017
- Successful launch; >20% US market share

Inhibitor indication approved (US)
- BTD granted, convenient 4 weekly schedule

TECENTRIQ atezolizumab

Positive Ph III results
- **Lung cancer**
  - 1L NSCLC: IMpower 150, 130, 132
  - 1L ES-SCLC: IMpower 133
  - sq NSCLC: IMpower131
- **Renal cancer:**
  - 1L mRCC: IMmotion151
- **Breast cancer:**
  - 1L TNBC: IMpassion130

VENCLEXTA venetoclax tablets

Transforming SoC in CLL/AML/MM
- FDA approval in R/R CLL (MURANO)
- Ph III data in 1L CLL expected in H2 18 (CLL14)
- Early filings in in AML and MM

NCCN=National Comprehensive Cancer Network; NSCLC=Non Small Cell Lung Cancer; ES SCLC=Extensive Stage Small Cell Lung Cancer; TNBC=Triple Negative Breast Cancer; RCC=Renal Cell Carcinoma; SoC=Standard of Care; R/R CLL=Relapsed Refractory Chronic Lymphocytic Leukemia; AML=Acute Myeloid Leukemia; MM=Multiple Myeloma; Venclexta in collaboration with AbbVie

Replace and extend the business

Through continuously improving standard of care

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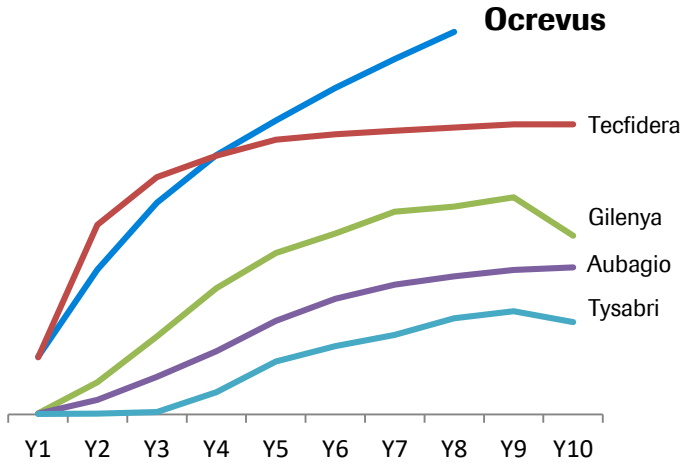
Multiple Sclerosis

Goal to be market leader in MS

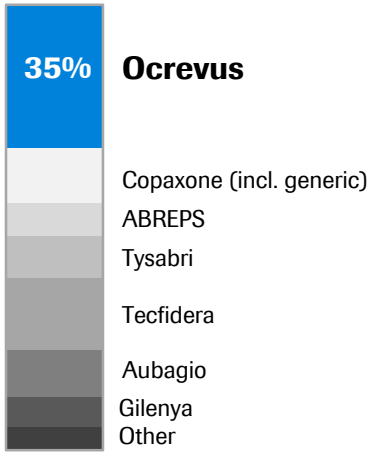
Ocrevus uniquely differentiated in RMS and PPMS

	RMS	PPMS
Efficacy	Superior to SOC DMT	First therapy to show efficacy in setting
Safety	70,000+ patients; 4-year safety data presented; no PML cases related to drug	
Convenience	IV – twice yearly	
Access	Priced below or similar to high efficacy therapies, broad payer coverage in US, reimbursement ongoing in EU	

MS Projected Revenue Uptake Curves[1]



US New/Switch Patient Share[2]



12% — **US: Total Patient Market Share** — As of Q3 2018

#1 — **New MS prescription in US** — As of Mar 2018

70/30 — **Sales split: RMS/PPMS** — Q3 2018

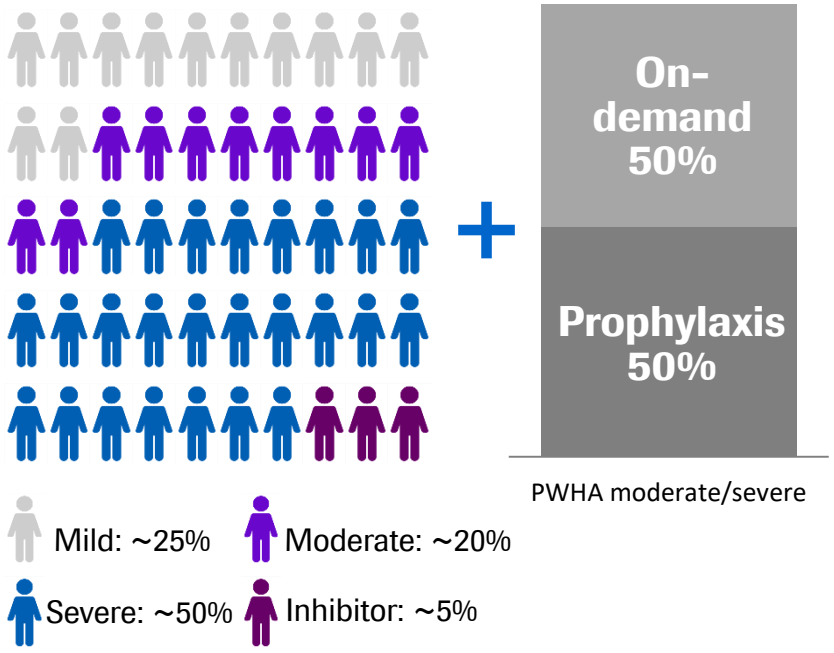
Total MS market USD ~23bn in 2017[1]

SOC=Standard of Care; RMS=Relapsing Multiple Sclerosis; PPMS=Primary Progressive Multiple Sclerosis; DMT=disease modifying therapy; 1 Source: Evaluate Pharma 2. US IMS and Symphony claims data Q1'18

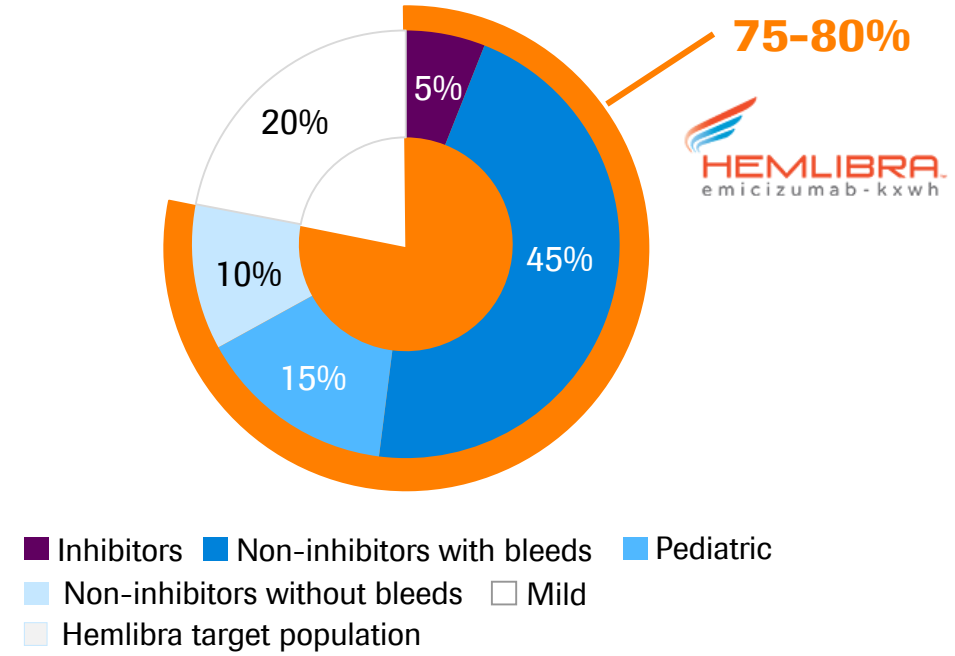
Hemophilia A

Hemlibra provides transformational advance for hemophilia market

Severity & treatment-based segmentation



Needs-based segmentation



Total hemophila A market growing to USD 13bn by 2024[1]

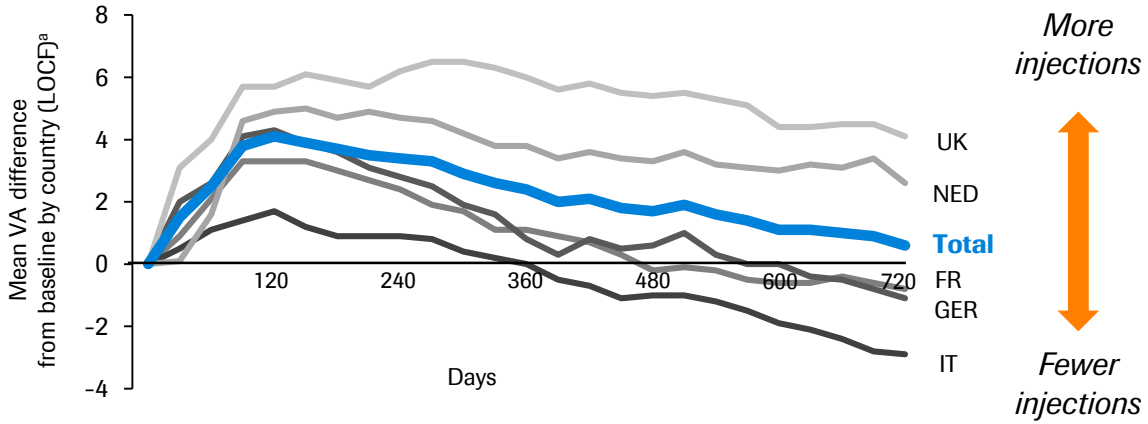
PWHA=People with Hemophilia A; Source: Treated patients MORSE 2017 (prevalence), UKHCDO Annual Report 2016 and internal assumptions (treatment rate); 1 Source: Evaluate Pharma

Ophthalmology

Innovating beyond Lucentis with novel MOAs and long acting delivery

High unmet medical need

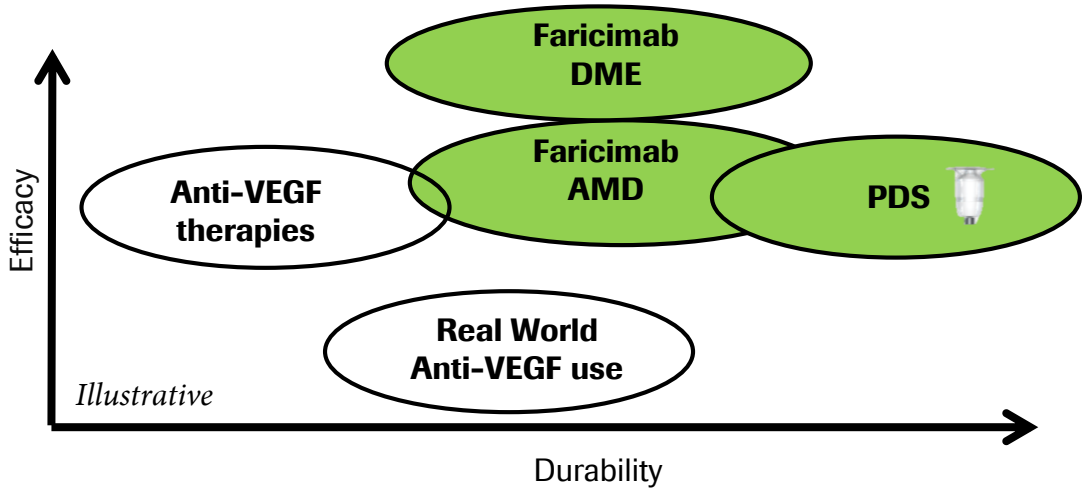
- **New MOAs needed** to improve both efficacy and durability
- **Reduced visual outcomes** correlated with lower number of inections[1]
- **Growing market** driven by aging population and product innovation



Total retina medical market USD ~10bn in 20172

Offering differentiated solutions

- **Faricimab**: First bi-specific antibody in ophthalmology simultaneously binding to VEGF and Angiopoetin2
- **PDS with ranibizumab**: Breakthrough platforms significantly reducing treatment burden, improving on real world treatment outcomes

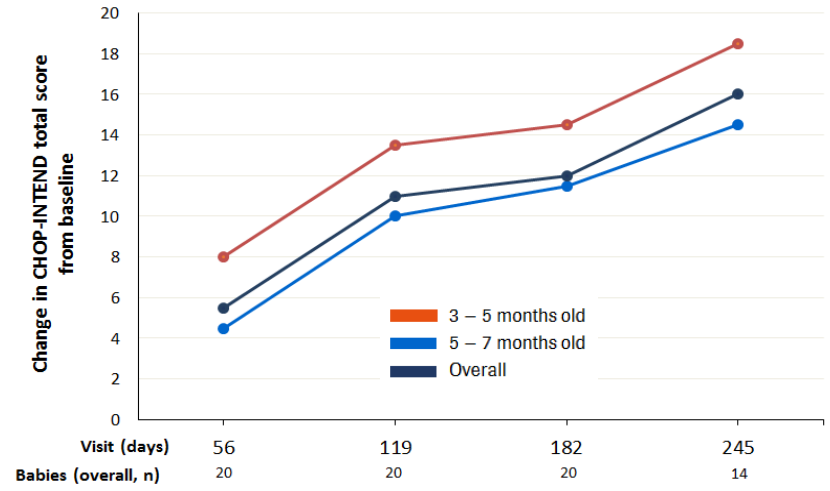


LAD=long-acting delivery; MOA=mode of action; 1 F.G. Holz et al., Br J Ophthalmol 2015; 2 Evaluate Pharma

Emerging opportunities in CNS
Adressing high medical need

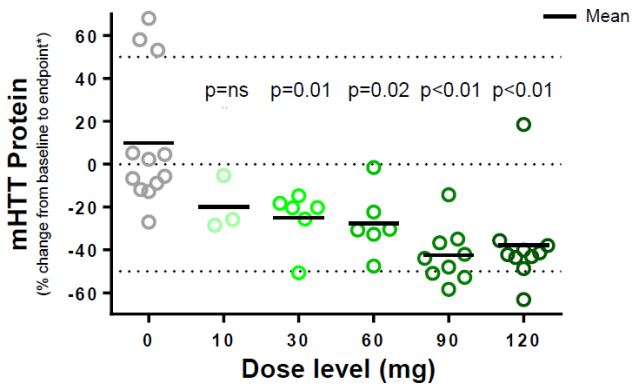
Risdiplam in SMA
Phase II/III (FIREFISH) Part 1 data in Type 1

Median change from baseline in CHOP-INTEND



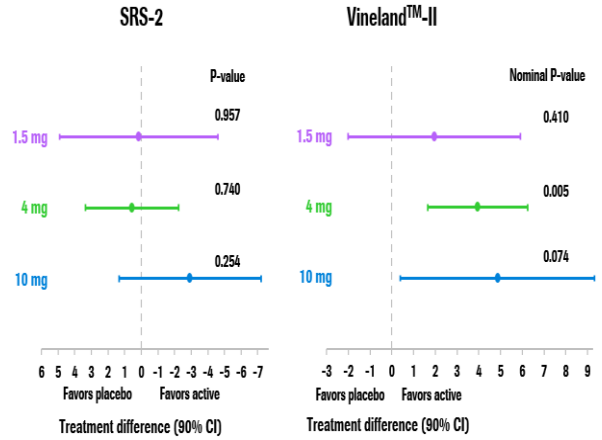
- 20/21 babies (95%) were alive at 10.5m
- No patients lost ability to swallow
- With 8 m treatment: 21% achieved unassisted sitting
- Broadest clinical program including Type 1 to 3;

HTT-ASO in Huntington
Pivotal trial initiated



- Highest doses: mean reductions of mHTT protein of 40% to 60%
- Safe and well tolerated
- Post-hoc anal. Correlation of mHTT reduction & improved scores in tests

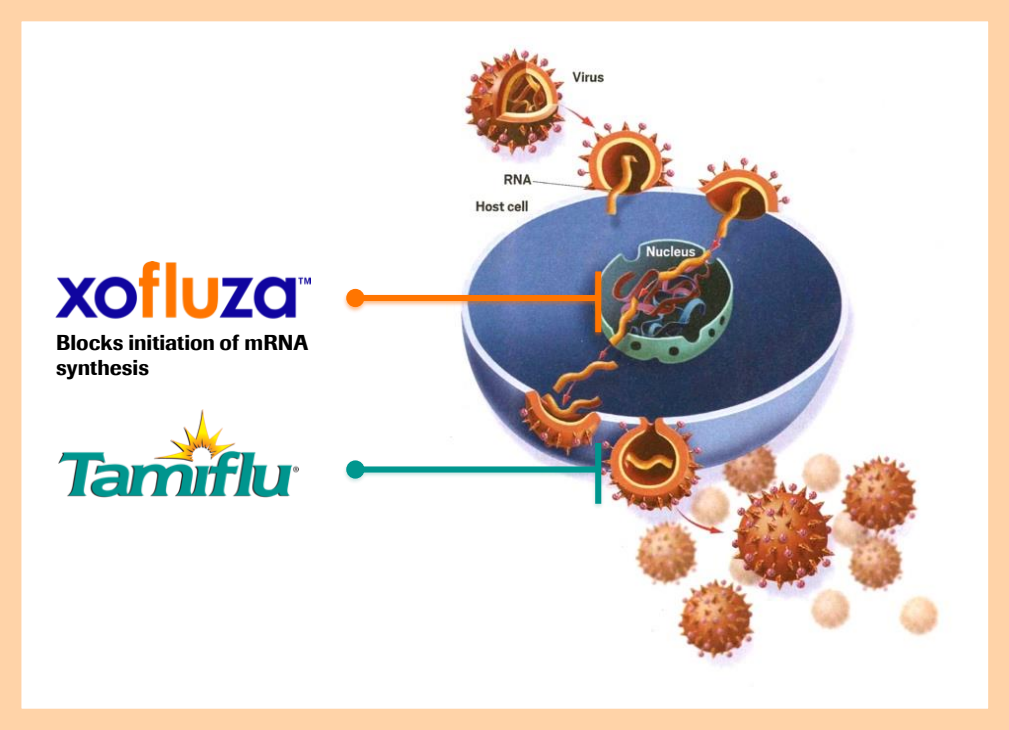
Balovaptan in autism (ASD)
Pivotal trial initiated in adults



- Primary endpoint (SRS-2) not met; however dose dependent treatment effect on VinelandTM-II score
- Ph II study (aV1ation) in children and adolescent ongoing

Xofluza – First Novel antiviral for influenza in 20 years

Shuts down viral replication with one dose



CAPSTONE 1 P3 Trial in Healthy Adults

	Endpoint	Xofluza	Tamiflu	Placebo
1^0	Alleviation of symptoms (hours)	53.5	53.8	80.2
2^0	**Viral shedding cessation (hours)**	**24.0**	**72.0**	96.0
2^0	Treatment-related adverse events	4.4%	8.4%	3.9%

✓ **High risk patients**

Children

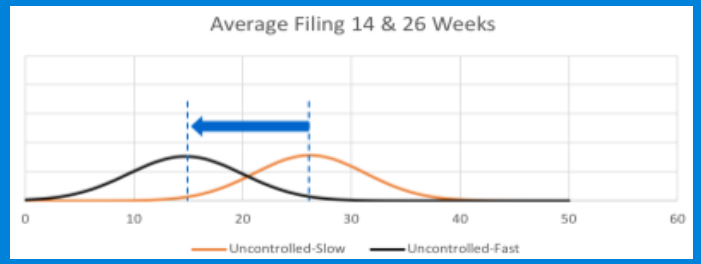
Hospitalized patients

Transmission study

Transforming our operating model

Building an effective organization for the future

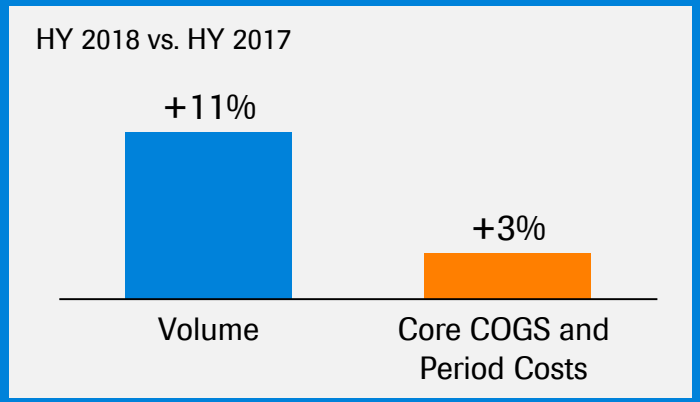
R&D



Example: Filing of IMpassion 130 in 14 weeks (down from 26w)

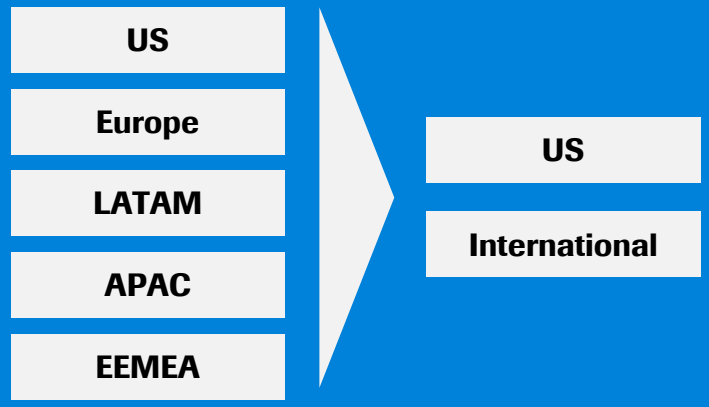
- ✓ **Fit-for-purpose** teams enabling fast, but rigorous **decision making**
- ✓ **Faster filing** initiatives (e.g. regulatory acceleration, dossier optimizing)
- ✓ **PHC and data** strategy driving **insights** and **R&D efficiencies**

Manufacturing



- ✓ **Lean** management production program
- ✓ Favorable **product mix**
- ✓ Management of **inventory**

Commercial



- ✓ Simplified **structures, processes & culture** to drive effectiveness
- ✓ **Productivity** initiatives
- ✓ **Resource shift** to support key launches

EM=Emerging Market; PHC=Personalized Healthcare; COGS=cost of goods sold

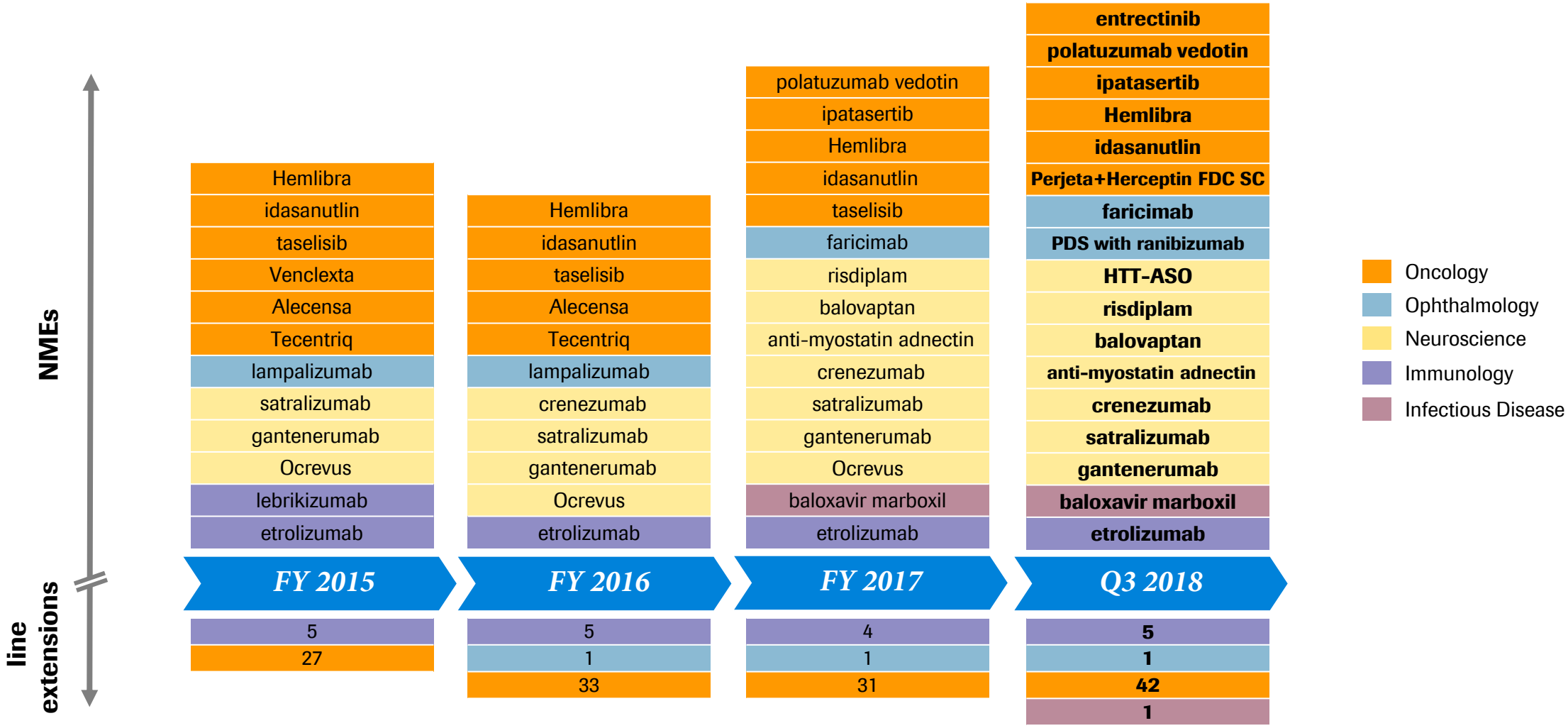
Performance update

Rejuvenating the portfolio

Outlook

Strong presence at scientific meetings and in premier medical journals for the remainder of the year

Q3 2018: Record number of NMEs at pivotal stage



NME=new molecular entities; baloxavir marboxil (Cap Endonuclease inhibitor); risdiplam (SMN2 splicer); FDC=Fixed dose combination; SC=Subcutaneous; PDS=Port delivery system
For details on the indications and line extensions please consult the pipeline appendix

2018 outlook

Group sales growth[1]	• Mid single digit
Core EPS growth[1]	• Broadly in line with sales, excl. US tax reform benefit • Mid teens incl. US tax reform
Dividend outlook	• Further increase dividend in Swiss francs

[1] At Constant Exchange Rates (CER)

Doing now what patients need next