Ohne Forschung, kein Fortschritt

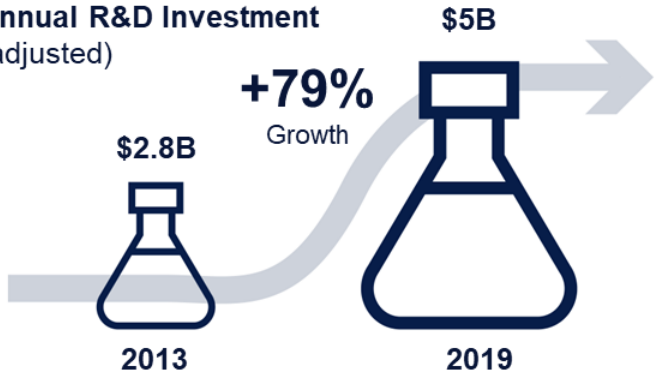
GPMed – MedUni Wien – FOPI Veranstaltung

26. November 2020

abbvie

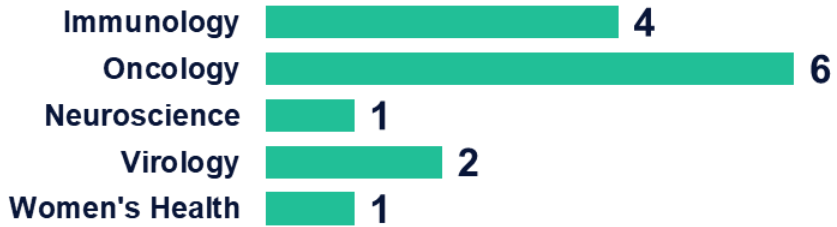
We have consistently increased R&D investments and productivity since inception

Annual R&D Investment
(adjusted)



14 Major Approvals Since 2013

Therapeutic Focus Areas



Revenue
$9 billion in new products launched since inception*

*Data for FY2019

Designations Granted

Breakthrough Designation **14**	Fast track **10**
Accelerated Approval **4**	Priority Review **19**

Our R&D investment goes beyond our discovery locations and research hubs

The Development Design Center (DDC): Tailored expertise, predictive analytics and machine learning to deliver efficient trial decisions

Growing Pipeline	AbbVie's growing pipeline demands efficiency and innovation
Drive Consistency	The entire portfolio must have access to innovative tools and cross-therapeutic learning
Exceptional Tools	Big Data allows for predictive analytics and machine learning: the future of AbbVie's success

Using Machine Learning to accelerate clinical trials

Accelerating Study Enrollment by Better Site Selection

- We used more than 4 million data field from 10-15 sources to better predict highest performing sites
- These models outperform historic perfomance by 5-7 months

Predicting Study Participants who drop-out

- We analyzed more than 11,000 patiens with millions of data to better understand factors associated with a dropping out of a study
- Solving industry wide problem of high drop out rates by using a risk score analysis

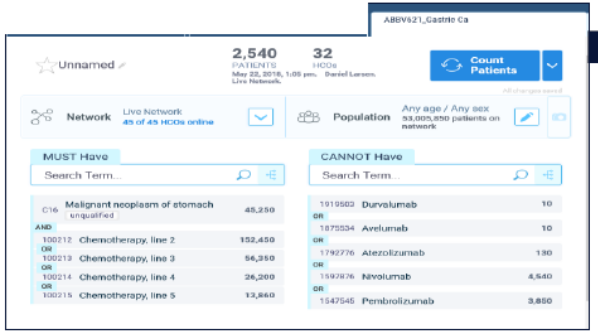
Finding Patients Pre-Diagnosis

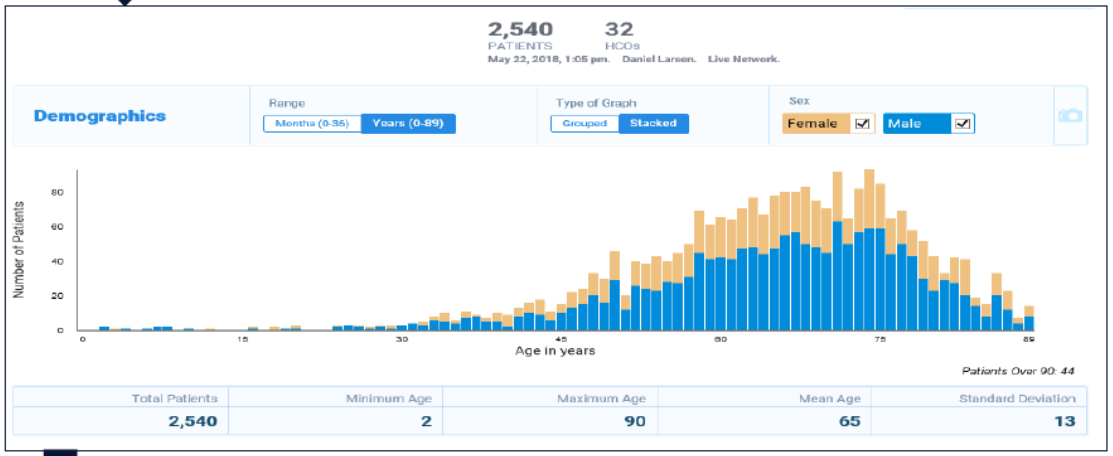
- By analyzing millions of patient medical records, we can identify patterns of health care engagement that can predict a diagnosis
- The providers for these patients can then be alerted to the potential diagnosis, confirm the diagnosis clinically, and then recommend early interventions to prevent worsening of the disease or prescribe more effective treatments.

***In silico* Control arms**

- We can predict placebo responses in our clinical trials by using machine learning to develop outcome algorithms
- These algorithms can be used to predict how our patients would have responded would they have not received our drugs

The DDC in action: Finding patients and designing ABBV-621 protocol





- The DDC worked with the study team for ABBV-621 (eftozanermin alfa or "Eftoza") where time to proof of concept was critical
- Analytical insights from the DDC were utilized to accelerate the study design and find the patients

Typical clinical trial pain points

Contracting & Ethics

- Service fees & overhead costs
- IP
- Slow legal or EC review

- Standardized templates with pre-agreed budget milestones
- Sufficiently staffed legal departments
- Centralized and online EC review

Patient Recruitment

- Enthusiastic projections vs. Reality
- Patient awareness and engagement

- Ability to leverage anonymized patient medical records
- Engage with patient advocacy groups

Sites

- Lack of research experience and dedicated clinical trial resources

- Specialized centers of excellence with appropriate infrastructure
- Dedicated trial staff


abbvie