

where
science meets **humanity**™

ADUHELM Investor Webcast

June 8, 2021



INDICATION AND IMPORTANT SAFETY INFORMATION

INDICATION

ADUHELM is a prescription medicine used to treat people with Alzheimer's disease

IMPORTANT SAFETY INFORMATION

What is the most important information a patient should know about ADUHELM?

ADUHELM can cause serious side effects including: Amyloid Related Imaging Abnormalities or "ARIA". ARIA is a common side effect that does not usually cause any symptoms but can be serious. It is most commonly seen as temporary swelling in areas of the brain that usually resolves over time. Some people may also have small spots of bleeding in or on the surface of the brain with the swelling. Although most people with swelling in areas of the brain do not have symptoms, some people may have symptoms such as: headache, confusion, dizziness, vision changes, and nausea. The patient's healthcare provider will do magnetic resonance imaging (MRI) scans before and during treatment with ADUHELM to check for ARIA. **Patients should call their healthcare provider or go to the nearest hospital emergency room right away if they have any of the symptoms listed above.**

Before receiving ADUHELM, patients should tell their healthcare provider about all of their medical conditions, including if: they are pregnant or plan to become pregnant or are breastfeeding or plan to breastfeed. It is not known if ADUHELM will harm their unborn baby or if aducanumab-avwa (the active ingredient in ADUHELM) passes into breast milk.

What are the possible side effects of ADUHELM? ADUHELM can cause serious side effects, including: See above "What is the most important information a patient should know about ADUHELM?"

Serious allergic reactions. Swelling of the face, lips, mouth, or tongue and hives have happened during an ADUHELM infusion. Patients should tell their healthcare provider if they have any of the symptoms of a serious allergic reaction during or after an ADUHELM infusion.

The most common side effects of ADUHELM include: swelling in areas of the brain, with or without small spots of bleeding in or on the surface of the brain (ARIA); headache and fall. Patients should call their healthcare provider for medical advice about side effects. Patients may report side effects to FDA at 1-800-FDA-1088.

Please see full [Prescribing Information](#), including [Medication Guide](#)

Non-GAAP financial information

We do not provide guidance for GAAP reported financial measures (other than revenue) or a reconciliation of forward-looking Non-GAAP financial measures to the most directly comparable GAAP reported financial measures because we are unable to predict with reasonable certainty the financial impact of items such as the transaction, integration, and certain other costs related to acquisitions or large business development transactions; unusual gains and losses; potential future asset impairments; gains and losses from our equity security investments; and the ultimate outcome of pending significant litigation without unreasonable effort. These items are uncertain, depend on various factors, and could have a material impact on GAAP reported results for the guidance period. For the same reasons, we are unable to address the significance of the unavailable information, which could be material to future results. We believe that Non-GAAP financial measures provide additional insight into the ongoing economics of our business and reflect how we manage our business internally, set operational goals, and form the basis of our management incentive programs. Non-GAAP financial measures are in addition to, not a substitute for, or superior to, measures of financial performance prepared in accordance with GAAP.

Note regarding trademarks: RITUXAN® and TECFIDERA® are registered trademarks of Biogen. ADUHELM™ and Healthy Climate, Healthy Lives™ are trademarks of Biogen.

Forward-looking statements

This presentation and the discussions during this conference call contain forward-looking statements, including statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, relating to: our strategy and plans; potential of, and expectations for, our commercial business and pipeline programs, including ADUHELM; the potential clinical effects of ADUHELM; the potential benefits, safety, and efficacy of ADUHELM; potential regulatory discussions, submissions, and approvals and the timing thereof; planning and timing for the commercial launch of ADUHELM; anticipated manufacturing, distribution, and supply of and access to ADUHELM; the treatment of Alzheimer’s disease; the anticipated benefits and potential of our collaboration arrangements with Eisai; clinical development programs, clinical trials, and data readouts and presentations; risks and uncertainties associated with drug development and commercialization; our future financial and operating results; plans relating to share repurchases; and 2021 financial guidance. These forward-looking statements may be accompanied by such words as “aim,” “anticipate,” “believe,” “could,” “estimate,” “expect,” “forecast,” “goal,” “intend,” “may,” “plan,” “potential,” “possible,” “prospect,” “will,” “would,” and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early-stage clinical trials may not be indicative of full results or results from later stage or larger scale clinical trials and do not ensure regulatory approval. You should not place undue reliance on these statements or the scientific data presented.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including: uncertainty of success in the development and commercialization of ADUHELM; risks relating to the launch of ADUHELM, including preparedness of healthcare providers to treat patients, the ability to obtain and maintain adequate reimbursement for ADUHELM, and other unexpected difficulties or hurdles; regulatory submissions may take longer or be more difficult to complete than expected; regulatory authorities may require additional information or further studies, or may fail or refuse to approve or may delay approval of our drug candidates, including ADUHELM; unexpected concerns that may arise from additional data or analysis obtained during clinical trials; actual timing and content of submissions to and decisions made by the regulatory authorities regarding ADUHELM; the occurrence of adverse safety events, restrictions on use, or product liability claims; risks of unexpected costs or delays; the risk of other unexpected hurdles; risks relating to investment in our manufacturing capacity; problems with our manufacturing processes; failure to protect and enforce our data, intellectual property, and other proprietary rights and uncertainties relating to intellectual property claims and challenges; third party collaboration risks; risks associated with current and potential future healthcare reforms; risks relating to the distribution and sale by third parties of counterfeit or unfit versions of our products; the direct and indirect impacts of the ongoing COVID-19 pandemic on our business, results of operations, and financial condition; and any other risks and uncertainties that are described in other reports we have filed with the U.S. Securities and Exchange Commission.

These statements are based on our current beliefs and expectations and speak only as of the date of this presentation. We do not undertake any obligation to publicly update any forward-looking statements.

ADUHELM webcast agenda

Introduction

Michel Vounatsos

Chief Executive Officer

Introduction to Alzheimer's and Aducanumab

Alfred Sandrock, M.D., Ph.D.

Head of Research & Development

Manufacturing and Supply

Nicole Murphy

Head of Global Manufacturing & Technical Operations

Financial Update

Michael McDonnell

Chief Financial Officer

Closing Remarks

Michel Vounatsos

Chief Executive Officer

Also available for Q&A

Chirfi Guindo

Head of Global Product Strategy & Commercialization

Alisha Alaimo

President, U.S. Organization

Samantha Budd Haeberlein, Ph.D.

Head of Neurodegeneration Development

where
science **humanity**[™]
meets

Introduction

Michel Vounatsos
Chief Executive Officer

 **Biogen**[®]

Alzheimer's disease is a global health crisis

> 30 Million

People worldwide living with Alzheimer's disease¹

6th

Leading cause of death in the U.S.²



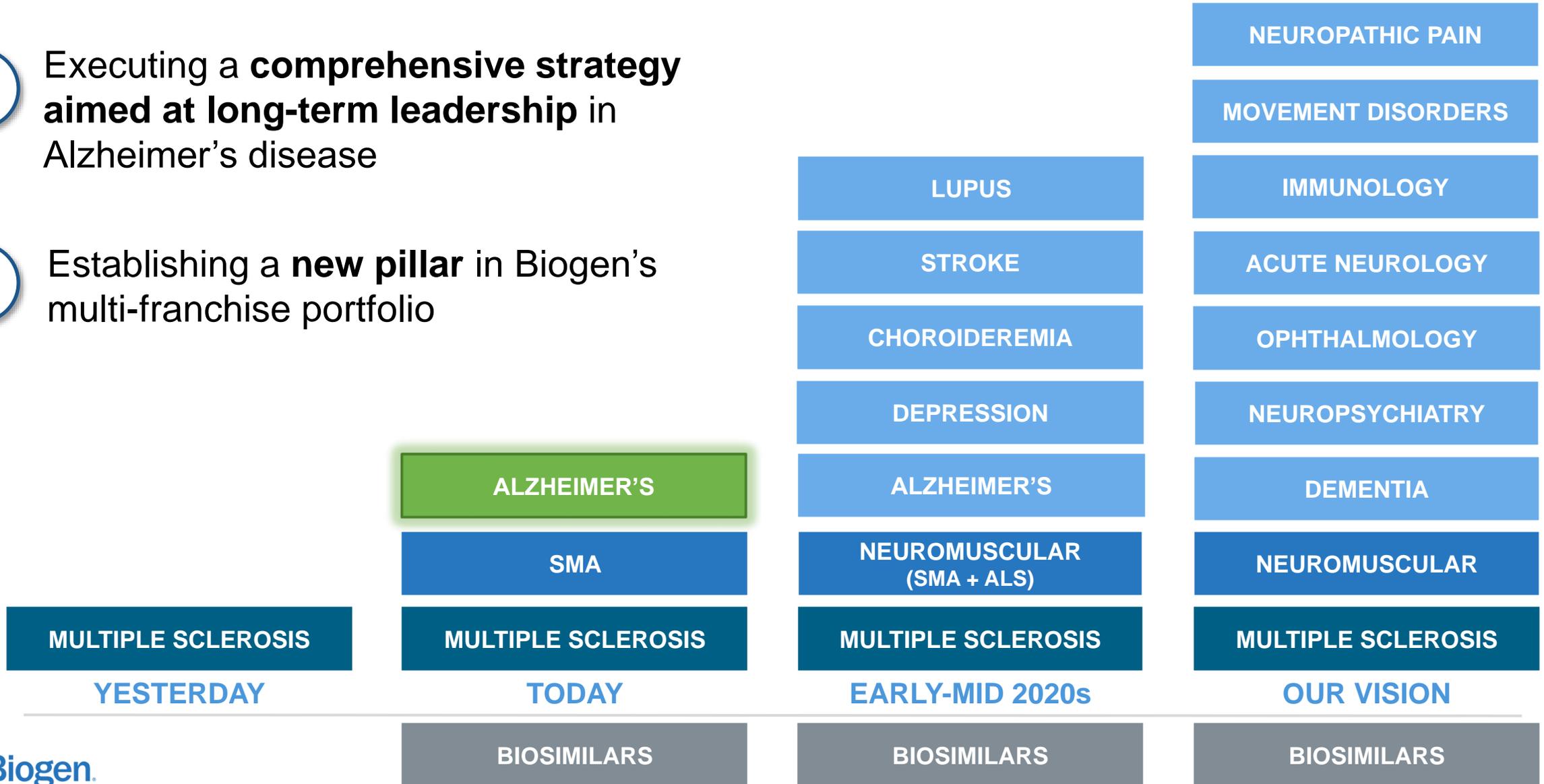
ADUHELM approval is a significant milestone

- 1 The first and only FDA-approved therapy to address a defining **pathology of Alzheimer's disease**¹
- 2 **Leveraging Biogen's core capabilities** to help build a new market focused on early-stage Alzheimer's disease
- 3 Ready for an **immediate launch** with the goal of maximizing access for early-stage patients, including underserved populations

Continuing to build a multi-franchise portfolio

4 Executing a **comprehensive strategy aimed at long-term leadership** in Alzheimer's disease

5 Establishing a **new pillar** in Biogen's multi-franchise portfolio



U.S. launch readiness



Understanding of MCI & role of amyloid

- ✓ Key Medical Expert engagement
- ✓ Disease state education for physicians, patients, and caregivers



Diagnosis & amyloid beta testing

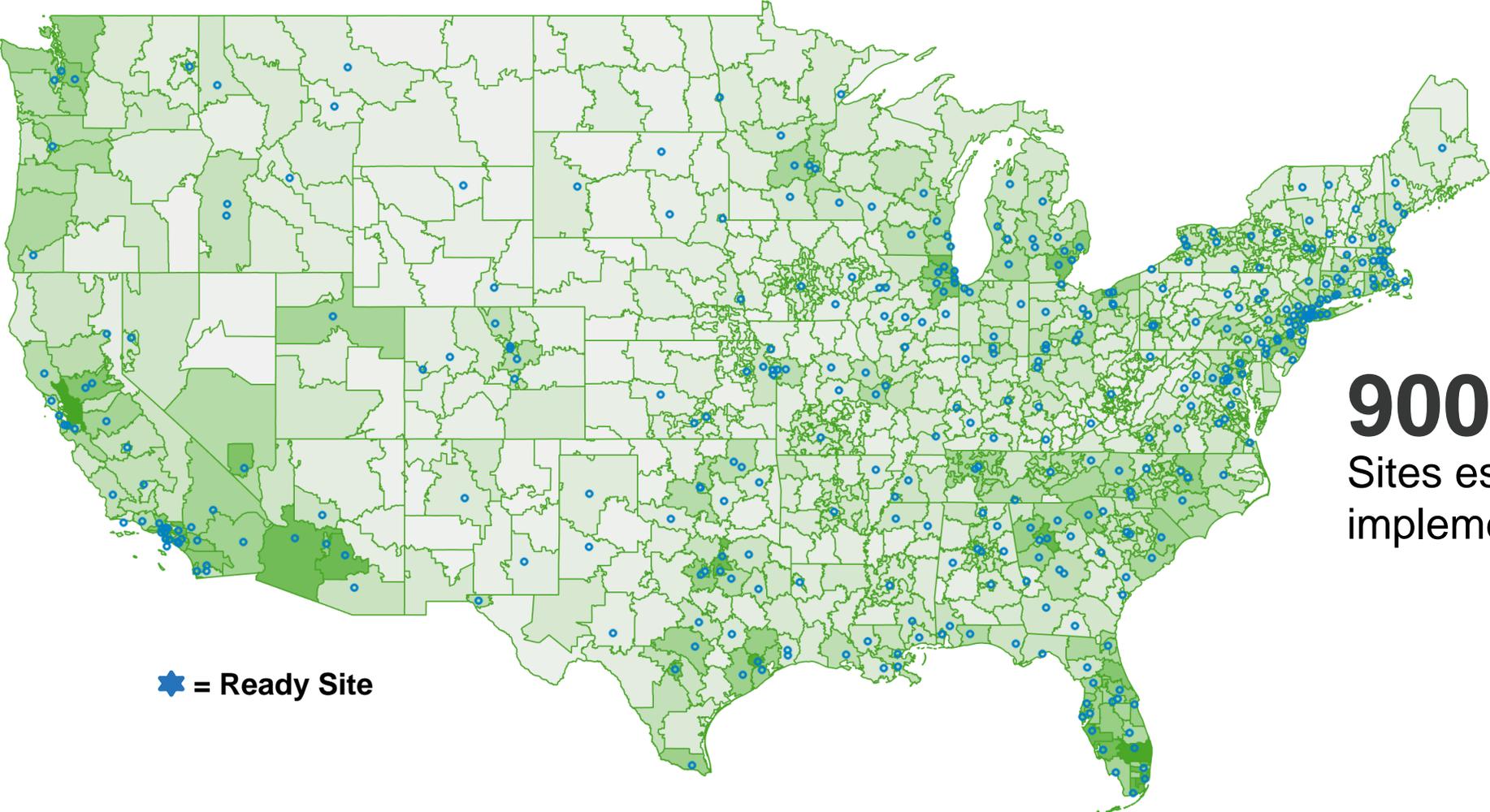
- ✓ Amyloid CSF testing program
- ✓ Advocating for coverage of amyloid PET



Site readiness/capacity to test, diagnose, and treat

- ✓ Site readiness assessments
- ✓ Over 900 sites estimated to be ready to implement ADUHELM shortly

Ready sites are aligned to geographies with large populations



900+
Sites estimated to be ready to
implement ADUHELM shortly

ADUHELM price aligned with Biogen's pricing principles

Biogen's Pricing Principles

- ① Value to Patients and Caregivers
- ② Present and Future Benefit to Society
- ③ Fulfilling our Commitment to Innovation
- ④ Evolution toward Value Based Care
- ⑤ Affordability & Sustainability

~\$56,000

Annual WAC for the average patient at full maintenance dose

~\$41,000

Year 1 WAC for the average patient

Price predictability*

WAC = Wholesale Acquisition Cost

Note: ADUHELM dosing varies based on patient weight; estimated average patient = 74kg; assumes 13 infusions per year (every 4 weeks). ADUHELM is supplied as a 170mg single-dose vial (WAC = \$952) or a 300mg single-dose vial (WAC = \$1,680).

*Biogen will not increase the price of ADUHELM for the next four years.

Working to secure payer coverage for ADUHELM

**Centers for Medicare &
Medicaid Services
(CMS)**

**Medicare
Administrative
Contractors (MACs)**

**Medicare
Advantage**

- Medicare expected to cover vast majority of ADUHELM patients
- CMS coverage at launch through miscellaneous coding; aim for final J-code by early 2022
- Engaging MACs to support consistent regional access
- Expect most Medicare Advantage plans to define medical policies within the first several months

Biogen is committed to supporting equitable access

Equitable
access
programs

Reach to
underserved
communities

Financial
assistance
programs for
eligible patients
and patient
services

Value based
agreements

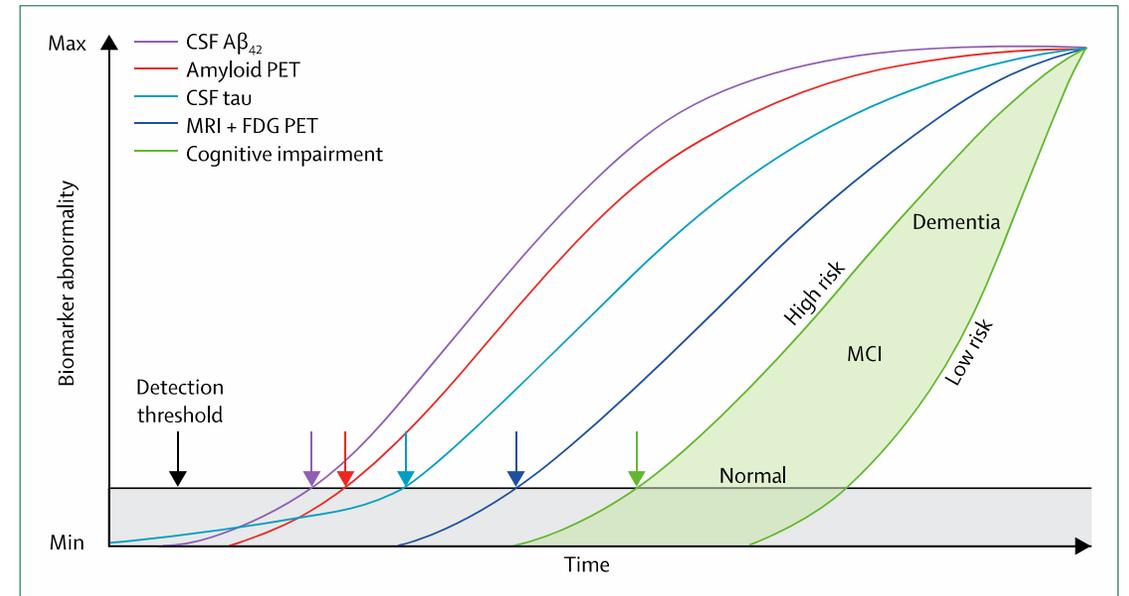
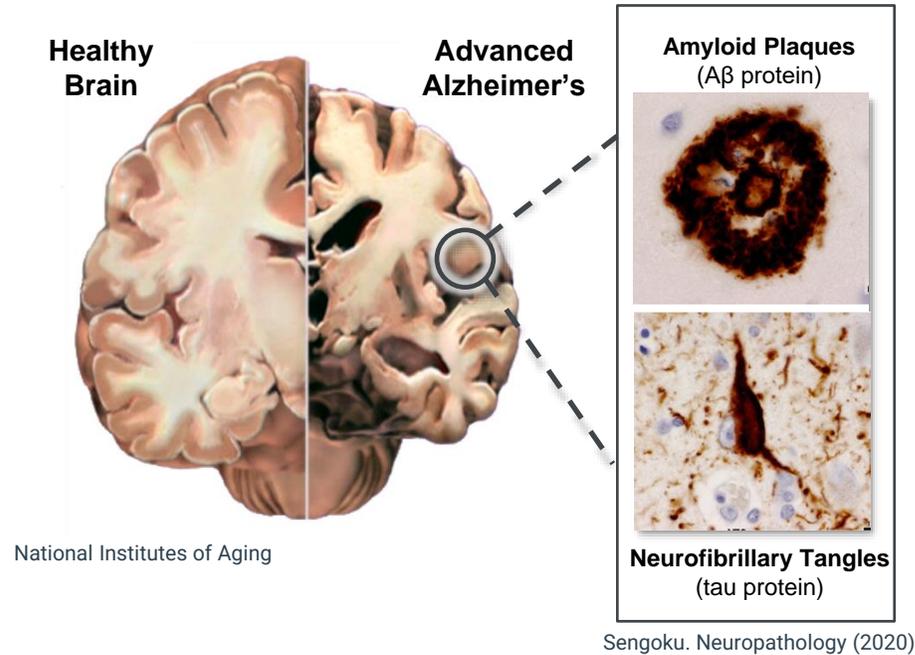


Biogen's goals are to reach out to patient communities and to help minimize financial or other barriers to treatment

Introduction to Alzheimer's disease and the development of aducanumab

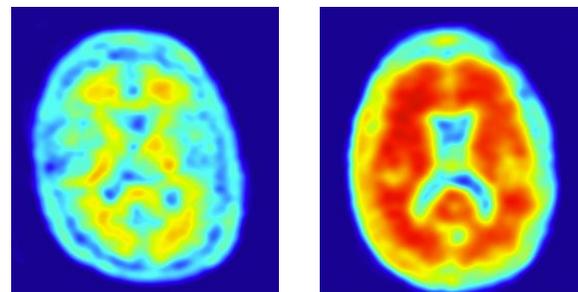
Alfred Sandrock, M.D., Ph.D.
Head of Research & Development

Alzheimer's disease pathology and the disease continuum



Jack CR et al. *The Lancet. Neurology* (2013) 207-216

Amyloid PET, Amyvid



Cognitively Normal
(Age 68)

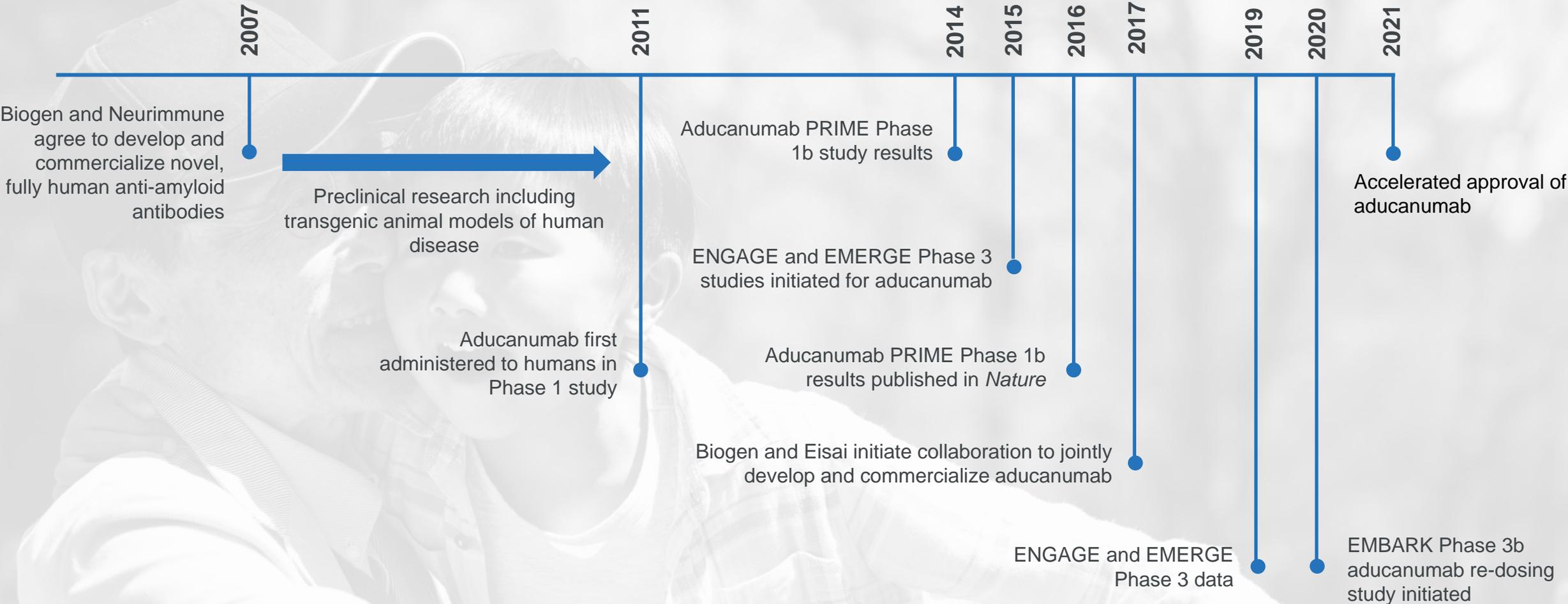
AD
(Age 68)

On the path to 2025: understanding the Alzheimer's disease continuum

Paul S. Aisen^{1*}, Jeffrey Cummings², Clifford R. Jack Jr⁴, John C. Morris⁶, Reisa Sperling⁷, Lutz Frölich³, Roy W. Jones⁵, Sherie A. Dowsett⁸, Brandy R. Matthews⁸, Joel Raskin⁹, Philip Scheltens¹⁰ and Bruno Dubois¹¹

Aisen et al. *Alzheimer's Research & Therapy* (2017) 9:60

Milestones in aducanumab development



where
science **humanity**[™]
meets

Manufacturing and Supply

Nicole Murphy

Head of Global Manufacturing & Technical Operations



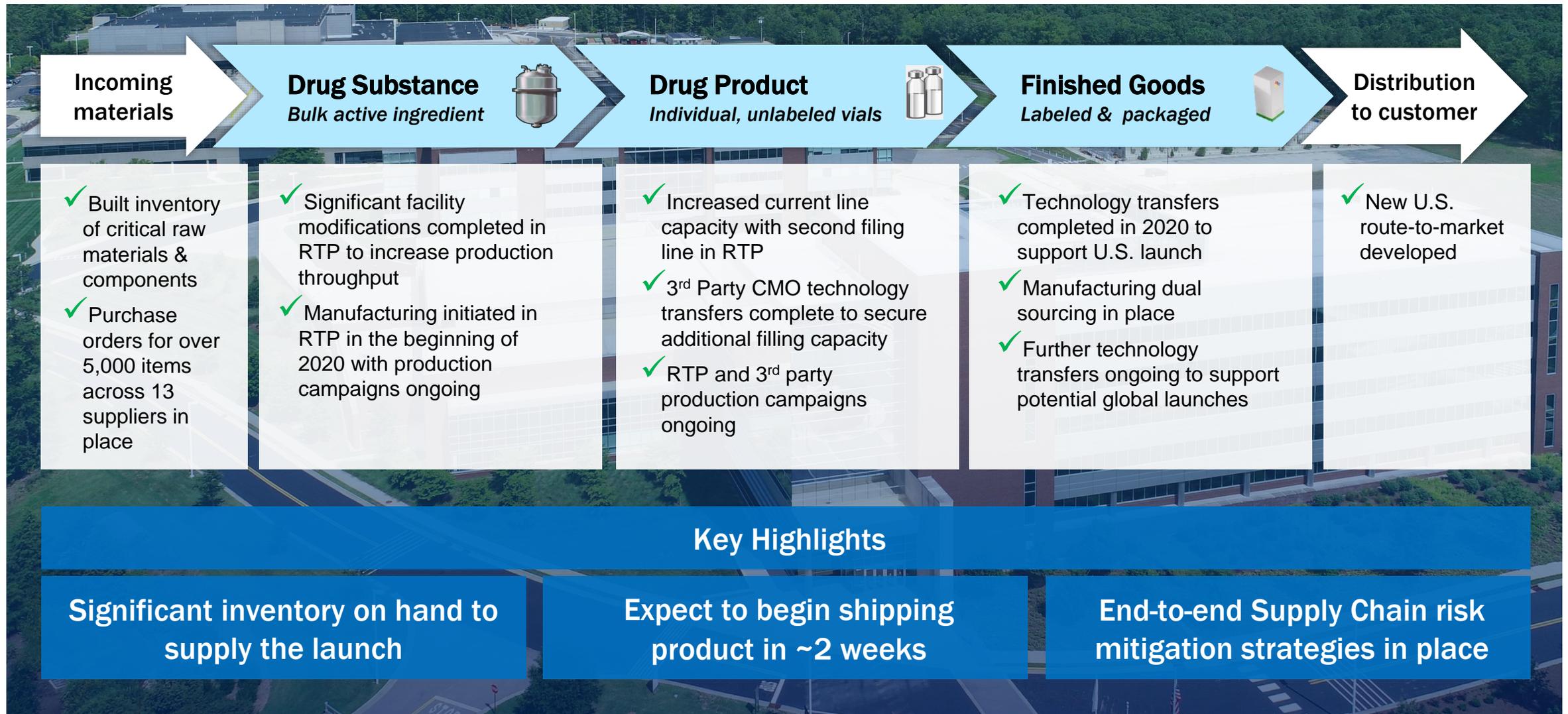
**Biogen is
ready to
supply
ADUHELM
for launch**

**At Biogen, we
have a strong
manufacturing
network with
demonstrated supply
chain agility**



**where
science
meets humanity™**

All operational launch readiness activities complete



Strategically leveraging internal assets for launch supply

Initial DS & DP launch material produced in RTP, NC:

- Demonstrated successful operations since 1998*
- Historical DS & DP aducanumab manufacturing experience
- Demonstrated supply chain agility
- Primary supplier of DS until Solothurn is approved
- Provides future risk mitigation through dual sourcing



Continued DS supply from Solothurn, Switzerland if FDA approval is received:

- Designed for high throughput aducanumab
- Received multi-product licensure from SWISSMEDIC
- Ability to expand as needed



263kL[^]

Overall bioreactor capacity
is among the
largest in biotech

*Biogen's RTP facility FDA license issued in 1998

[^]Combined capacity for RTP and Solothurn. Aducanumab FDA submission for Solothurn planned for later this year.

DS = drug supply; DP = drug product

Solothurn's innovative manufacturing facility

~ \$2 billion

Our investment in Solothurn provides Biogen with increased large scale, high throughput capabilities

2 BMCs*

18.5kL capacity per Production Bioreactor translates to 148kL of overall production bioreactor capacity

Technology

Enhanced process control: Fully automated, state of the art analytical and in-line technologies. Multivariate predictive modeling.

Process

>10 g/L: Industry leading productivity^ through enhanced cell lines and media formulations

Commitment to Society

Solothurn is aligned with Biogen's long-term commitment – Healthy Climate, Healthy Lives™



*Biological Manufacturing Cells; One cell currently operational with the second cell expected to be operational within the next few months

^Biogen data on file

Biogen ready to expand capacity as needed

Serving 1M+ Patients

Our new licensed manufacturing facility in Solothurn is operational with aducanumab FDA submission planned for later this year

Current capacity allows for more than 1 million patients supplied from our new facility

Future Supply Levers

Further utilize U.S. capacity in RTP

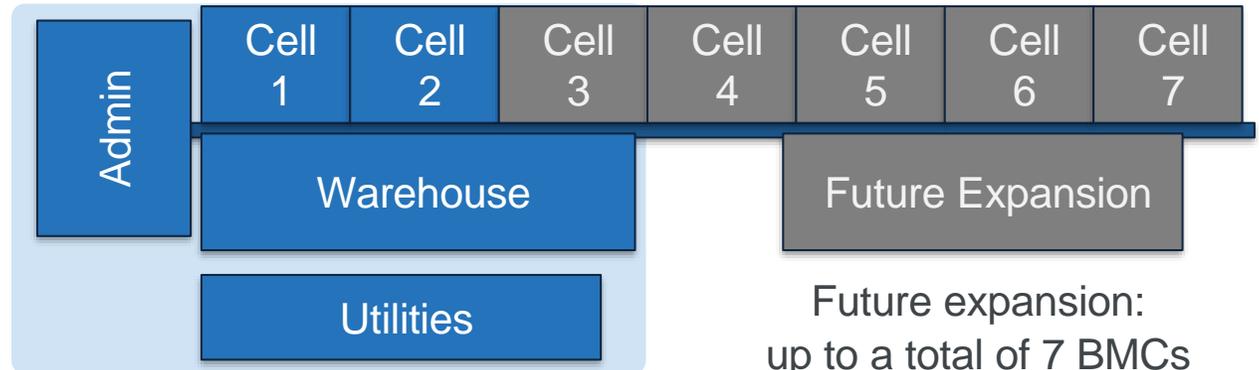
Continue to advance throughput and efficiencies

Potential 3rd party CMOs

Leverage Solothurn strategic design and infrastructure to expand



Current site: 2 BMCs



where
science **humanity**[™]
meets

Financial Update

Michael McDonnell
Chief Financial Officer



Agenda

	Page
U.S. Market & Financial Opportunity	26 - 27
<hr/>	
Accounting Considerations	28 - 29
<hr/>	
Financial Guidance	30
<hr/>	

U.S. ADUHELM opportunity

1st and only approved therapy to address a defining pathology of Alzheimer's disease

~ 1-2 million patients in the U.S. that have been clinically diagnosed with MCI or mild dementia suspected to be due to Alzheimer's disease (amyloid beta positive, if tested)

Expect gradual uptake as the majority of diagnosed patients are not currently under the care of a specialist

Modest revenue in 2021 ramping to a multibillion-dollar U.S. sales opportunity over the next several years

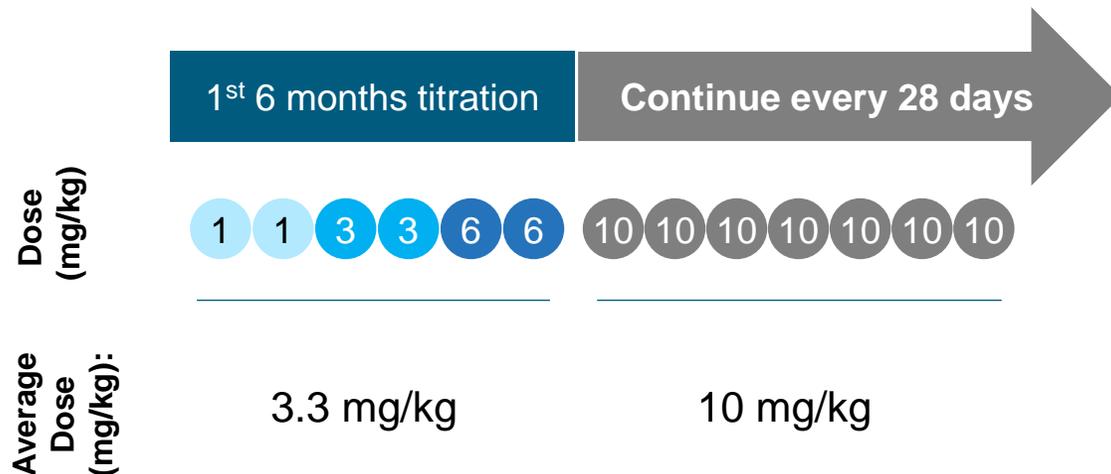
U.S. ADUHELM opportunity

Near-Term (2021)

- Site readiness and capacity
- Payer coverage
- Dose titration

Titration Schedule

Revenue per patient ramping gradually in the initial months of treatment



Medium-Term Expectations (2022+)

- Detection and diagnosis of early Alzheimer's disease increases
- System capacity increases due to greater physician focus on treating dementia
- Site infrastructure continues to scale
- Availability and reimbursement of amyloid testing increases (both PET and CSF)
- Revenue ramping beginning in 2022

Biogen & Eisai collaboration economics

Biogen will be the commercial lead in the U.S., European Union, and certain other territories

Biogen and Eisai will conduct co-promotion activities with a region-based profit split

= Commercialization Lead

	Biogen	Eisai
Commercial Territory	Profit Sharing %	Profit Sharing %
U.S.	55.0%	45.0%
European Union	68.5%	31.5%
Japan	20.0%	80.0%
Eisai Asia*	20.0%	80.0%
ROW (inclusive of China and S. Korea)	50.0%	50.0%

* Eisai will be the commercial lead in specific Asian territories

U.S. ADUHELM accounting

Revenue / Cost of Goods Sold

- Biogen books 100% of revenue and cost of goods sold
- Eisai's share of gross margin will be reflected in collaboration profit sharing

Royalties

- Biogen will pay Neurimmune royalties ranging from the high single digits to sub-teens based on annual net sales of ADUHELM
- Neurimmune royalties will be recorded through non-controlling interest and not cost of goods sold, with Eisai's reimbursement reflected in collaboration profit sharing

SG&A Expense

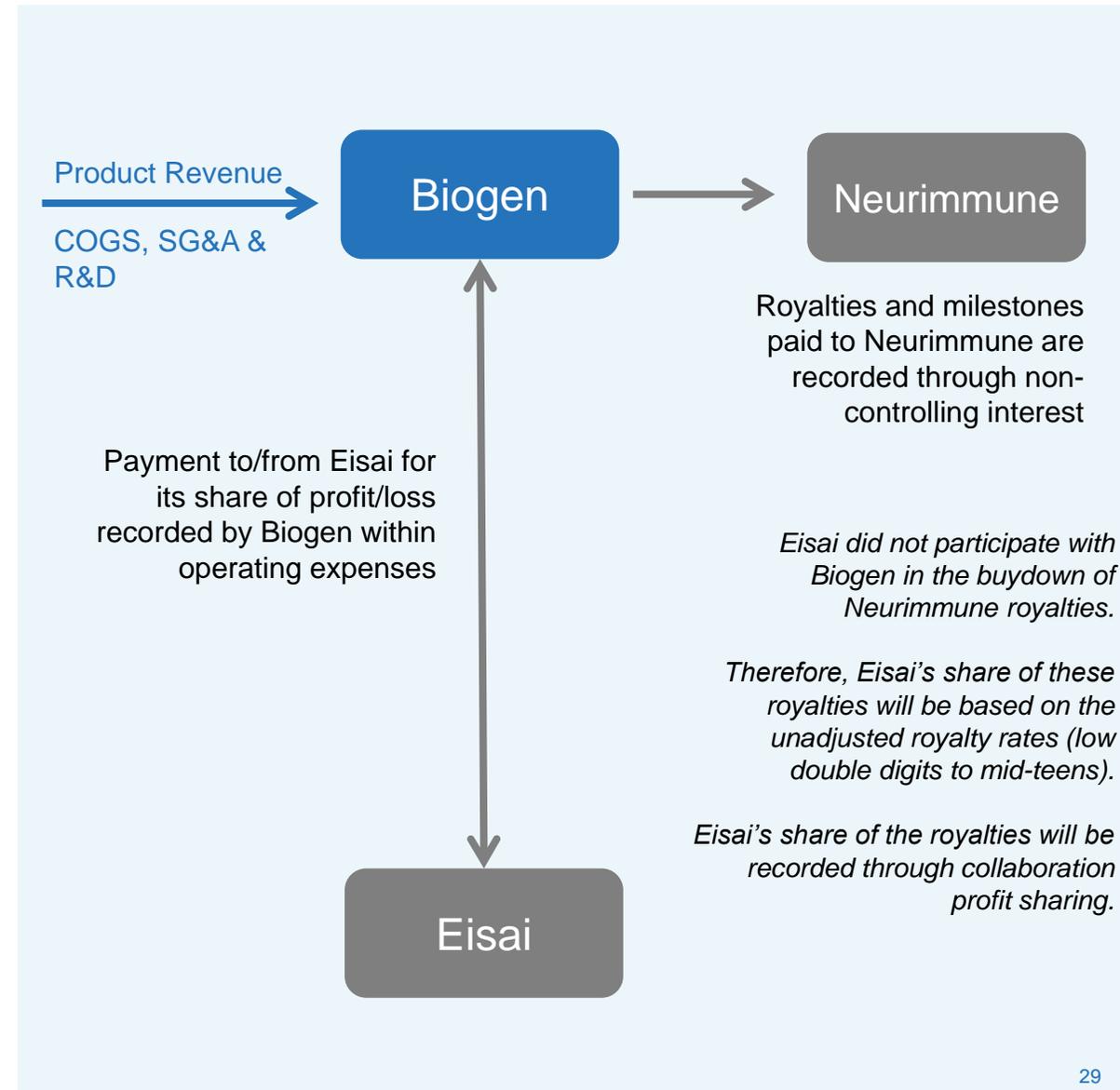
- Prior to Q2 2021: Eisai's reimbursement is recorded as an offset to SG&A expense
- Beginning Q2 2021: SG&A expense recorded on a gross basis, with Eisai's reimbursement recognized in collaboration profit sharing

R&D Expense

- All R&D expenditures are recorded net of Eisai's reimbursement within R&D expense, both before and after regulatory approval

Commercial Launch Milestones

- One-time U.S. commercial launch milestone of \$100M to be paid to Neurimmune
- After cost sharing with Eisai and taxes, expected net P&L impact is ~\$45M



2021 full year financial guidance reaffirmed

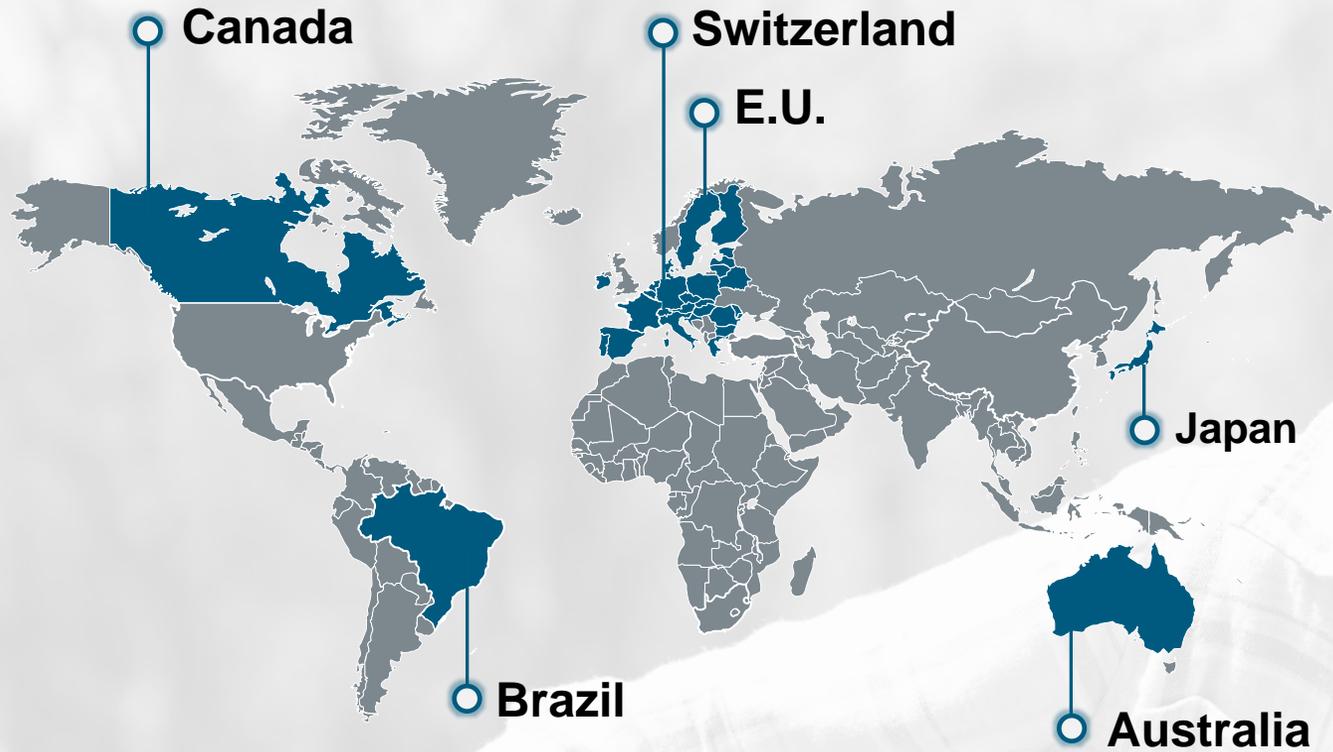
	FY 2021 Guidance
Revenue	\$10.45 billion to \$10.75 billion
Non-GAAP Diluted EPS	\$17.50 to \$19.00
Capital Expenditures	\$375 million to \$425 million

- Assumes that foreign exchange rates as of May 31, 2021, will remain in effect for the remainder of the year, net of hedging activities
- Assumes modest revenue for ADUHELM in 2021, ramping thereafter
- Continues to assume rapid erosion of TECFIDERA® in the U.S. as well as significant erosion of RITUXAN® in the U.S., resulting in reduced gross margin percentage
- Non-GAAP R&D expense expected to be between \$2.3 billion and \$2.4 billion
- Non-GAAP SG&A expense expected to be between \$2.6 billion and \$2.7 billion
- Expect to utilize a portion of the remaining share repurchase authorization of \$4 billion (as of March 31, 2021) throughout 2021
- Does not include any impact from potential acquisitions or large business development transactions, as both are hard to predict, or any impact of potential tax or healthcare reform
- Biogen may incur charges, realize gains or losses, or experience other events or circumstances in 2021 that could cause any of these assumptions to change and/or actual results to vary from this financial guidance
- Please see slide 3 of this presentation for additional information on our use of forward-looking Non-GAAP financial measures

Closing Remarks

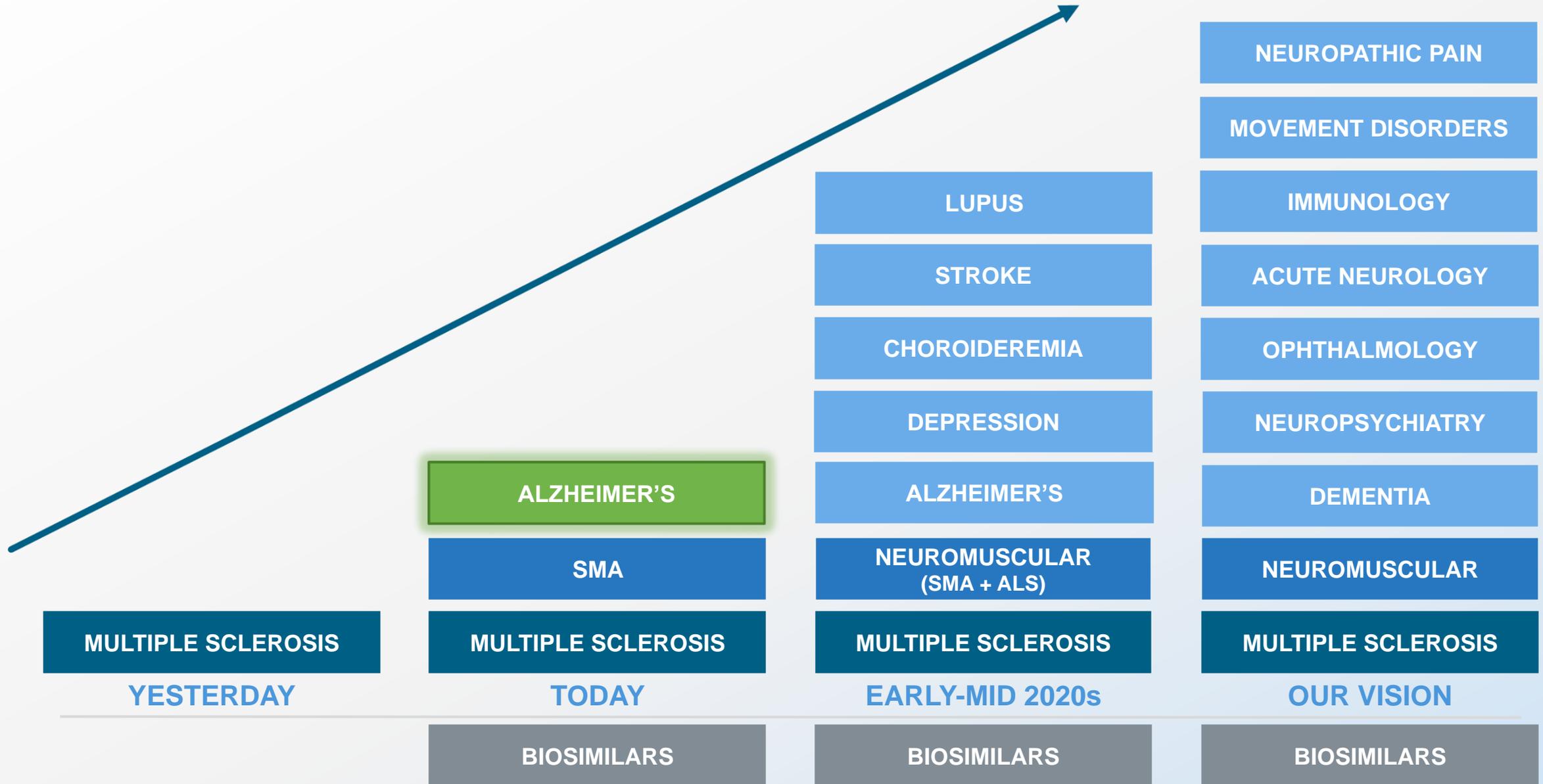
Michel Vounatsos
Chief Executive Officer

ADUHELM is under review in additional global markets



Biogen is actively preparing for a global launch of ADUHELM

Continuing to build a multi-franchise portfolio



Questions & Answers