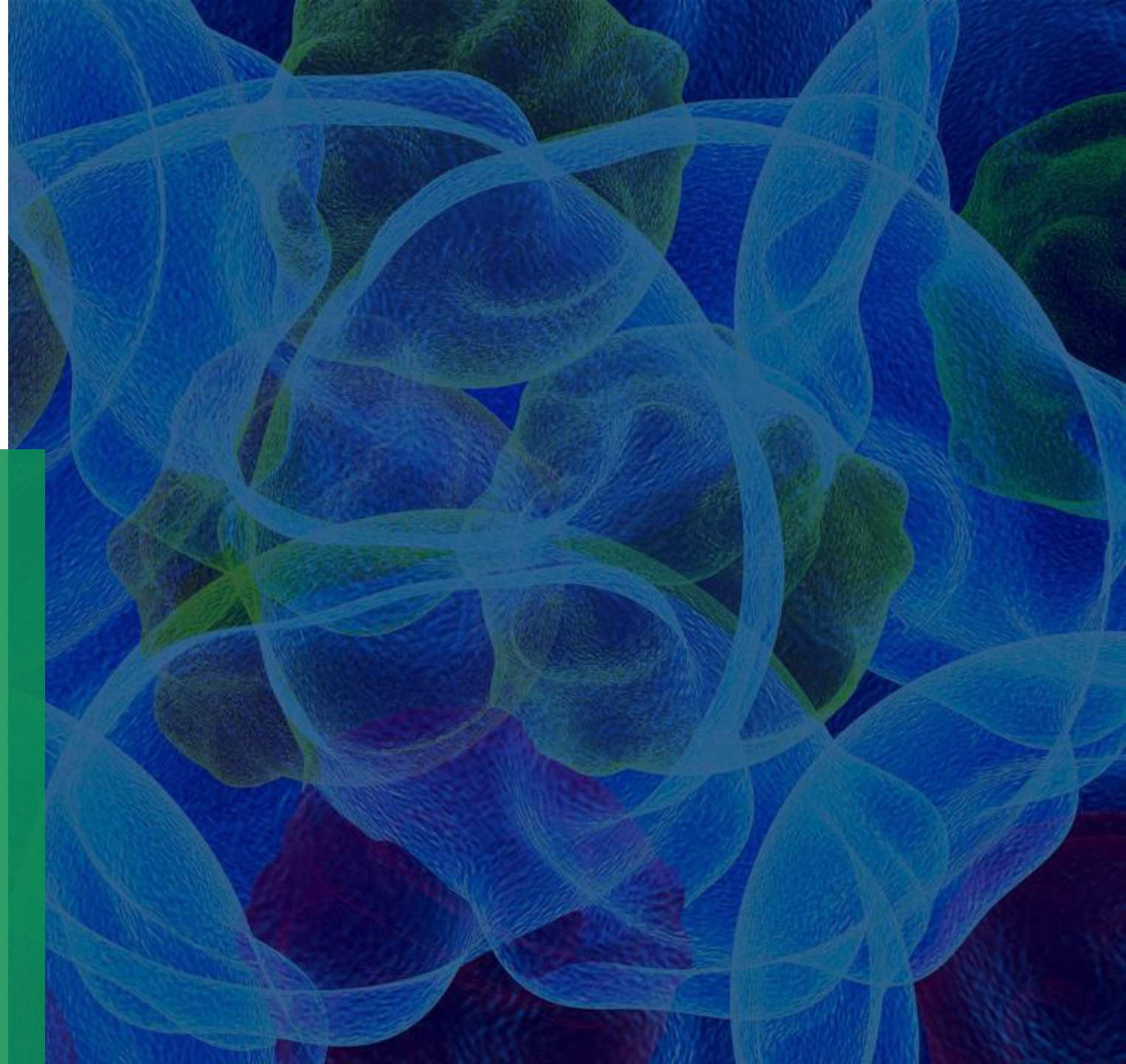
CELLECTAR BIOSCIENCES

First Quarter – March 31 2024 Financial Update Call

May 14, 2024

NASDAQ: CLRB



Forward Looking Statements and Disclaimers

This presentation contains forward-looking statements. Such statements are valid only as of today and we disclaim any obligation to update this information. These statements are only estimates and predictions and are subject to known and unknown risks and uncertainties that may cause actual future experiences and results to differ materially from the statements made. These statements are based on our current beliefs and expectations as to such future outcomes. Factors that might cause such a material difference include our current views with respect to our business strategy, business plan and research and development activities; the progress of our product development programs, including clinical testing and the timing of commencement and results thereof; our projected operating results, including research and development expenses; our ability to continue development plans for iopofosine I 131 (also known as CLR 131), CLR 1900 series, CLR 2000 series and CLR 12120; our ability to continue development plans for our Phospholipid Drug Conjugates (PDC)™; our ability to maintain orphan drug designation in the U.S. for iopofosine as a therapeutic for the treatment of multiple myeloma, neuroblastoma, osteosarcoma, rhabdomyosarcoma, Ewing's sarcoma and lymphoplasmacytic lymphoma, and the expected benefits of orphan drug status; any disruptions at our sole supplier of iopofosine; our ability to pursue strategic alternatives; our ability to advance our technologies into product candidates; our enhancement and consumption of current resources along with ability to obtain additional funding; our current view regarding general economic and market conditions, including our competitive strengths; the future impacts of the COVID-19 pandemic on our business, employees, operating results, ability to recruit patients for clinical studies, ability to obtain additional funding, product development programs, research and development programs, suppliers and third-party manufacturers; uncertainty and economic instability resulting from conflicts, military actions, terrorist attacks, natural disasters, public health crises, including the occurrence of a contagious disease or illness such as the COVID-19 pandemic, cyber-attacks and general instability; the future impacts of legislative and regulatory developments in the United States on the pricing and reimbursement of our product candidates; our ability to meet the continued listing standards of Nasdaq; assumptions underlying any of the foregoing; any other statements that address events or developments that we intend or believe will or may occur in the future; as well as our ability to complete enrollment and release top-line data from the WM CLOVER-WaM trial in the second half of 2023, our ability to receive break-through therapy approval and NDA approval for our iopofosine I 131 program and our ability to commercially manufacture and launch our product candidate if we receive regulatory approval. A complete description of risks and uncertainties related to our business is contained in our periodic reports filed with the Securities and Exchange Commission including our Form 10-K for the year ended December 31, 2023, and our Form 10-Q for the quarter ended March 31, 2024.

This presentation includes industry and market data that we obtained from industry publications and journals, third-party studies and surveys, internal company studies and surveys, and other publicly available information. Industry publications and surveys generally state that the information contained therein has been obtained from sources believed to be reliable. Although we believe the industry and market data to be reliable as of the date of this presentation, this information could prove to be inaccurate. Industry and market data could be wrong because of the method by which sources obtained their data and because information cannot always be verified with complete certainty due to the limits on the availability and reliability of raw data, the voluntary nature of the data gathering process, and other limitations and uncertainties. In addition, we do not know all of the assumptions that were used in preparing the forecasts from the sources relied upon or cited therein.

U.S. Waldenstrom's Macroglobulinemia Market ~$2.1B

Market Opportunities to Capture Patient Volume in R/R Market Currently Valued at ~$1.05B

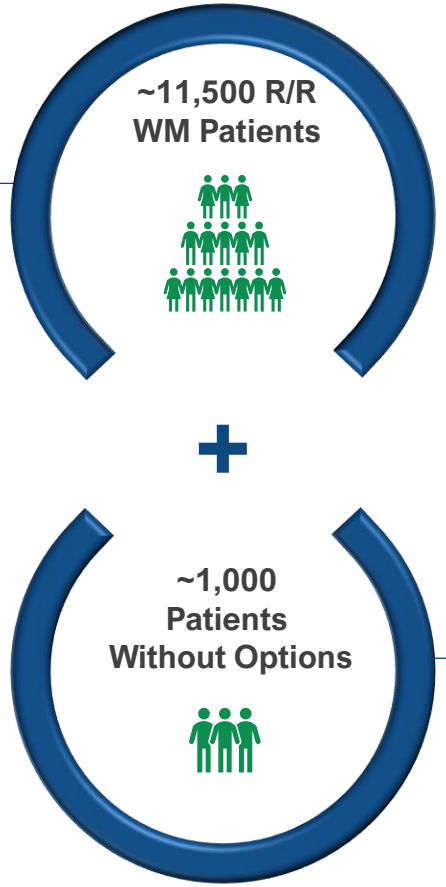
1

Existing Relapsed Refractory Market

~50% of patients are retreated with the same or similar treatment from prior lines of therapy

>60% of therapies utilized are not FDA approved and cannot be promoted

~4700 patients in 3rd line or greater



2

3L+ Patients not on Active Tx, after 2 prior lines of therapy

~1,000 patients have exhausted the prevalent treatment options by 3L

Patients remain either ineligible or intolerant to current market treatments

A uniquely positioned patient population with a significant unmet need, waiting for a new option

The 3rd line + market could grow to **~5700** patients

Iopofosine's Novel MOA, Demonstrated Clinical Benefit and Fixed Therapy Showcase a Meaningful Treatment Option for R/R Patients.

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Market Value utilizes third party market sizing and company claims data for share, treatment counts and normalizes for branded pricing

Iopofosine I 131: U.S. WM Shares By Line of Therapy

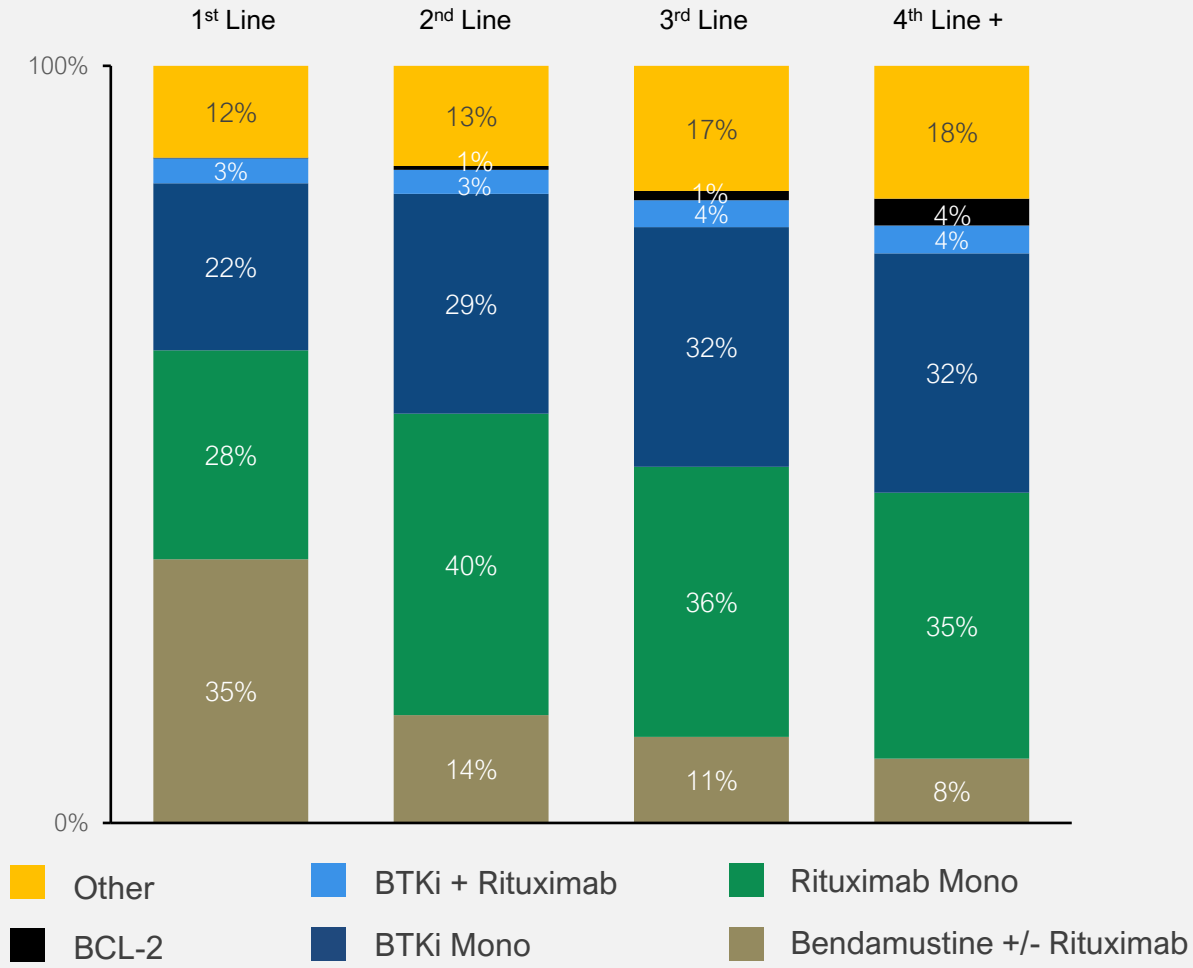
No Established Standard of Care Across All Lines of Therapy[8]

>60% Non-FDA approved drug share across all lines of therapy

52% 3rd line BTKi patients received a BTKi in 2nd line

1-4% BCL2 (venetoclax) inhibitor utilization across all lines of treatment

Nearly 50% of Patients in 3rd Line or Greater Setting Have Been Retreated After Prior Exposure to That Same Therapy



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US Waldenstrom's Macroglobulinemia 3L+ Therapy Details

Patients often retry prior therapies due to a lack of options, despite suboptimal outcomes

	FDA Approved	3L+ Market Share	3L+ Patient Counts	Market Characteristics
Bendamustine +/- Rituximab	✗	10%	478	• ~40% of pts. prior exposure to BR/R Mono. • Can Not Promote
Rituximab Mono	✗	35%	1,666	• ~55% of patients are retrying after prior exposure. • Can Not Promote
BTKi Mono Ibrutinib, zanubrutinib	✓	32%	1,486	• Continuous therapy - unobservable compliance • Potential Grade 3 AEs (Atrial Fibrillation) • ~50% of pts. are retrying after prior exposure. • Limited Promotion
BTKi + Rituximab	✓	4%	169	• ~80% of pts. have prior BTKi exposure • Limited Promotion
BCL-2 (venetoclax)	✗	2%	104	• Unapproved, lacks robust data • Can Not Promote
Other	✗	17%	798	• Contains numerous unapproved chemo/IO combinations • Can Not Promote

Iopofosine Advantage with Potential FDA Approval

61% Major Response Rate

75.6% Overall Response Rate

7.3% Complete Responses

- Can Actively Promote
- Responses regardless of patient characteristics
- Hematologic side effects are predictable and manageable
- Fixed course of therapy

Iopofosine Share of Voice Leadership May Quickly Capture 3rd Line + Patient Share Based Upon Unmet Need and Novel Product Profile

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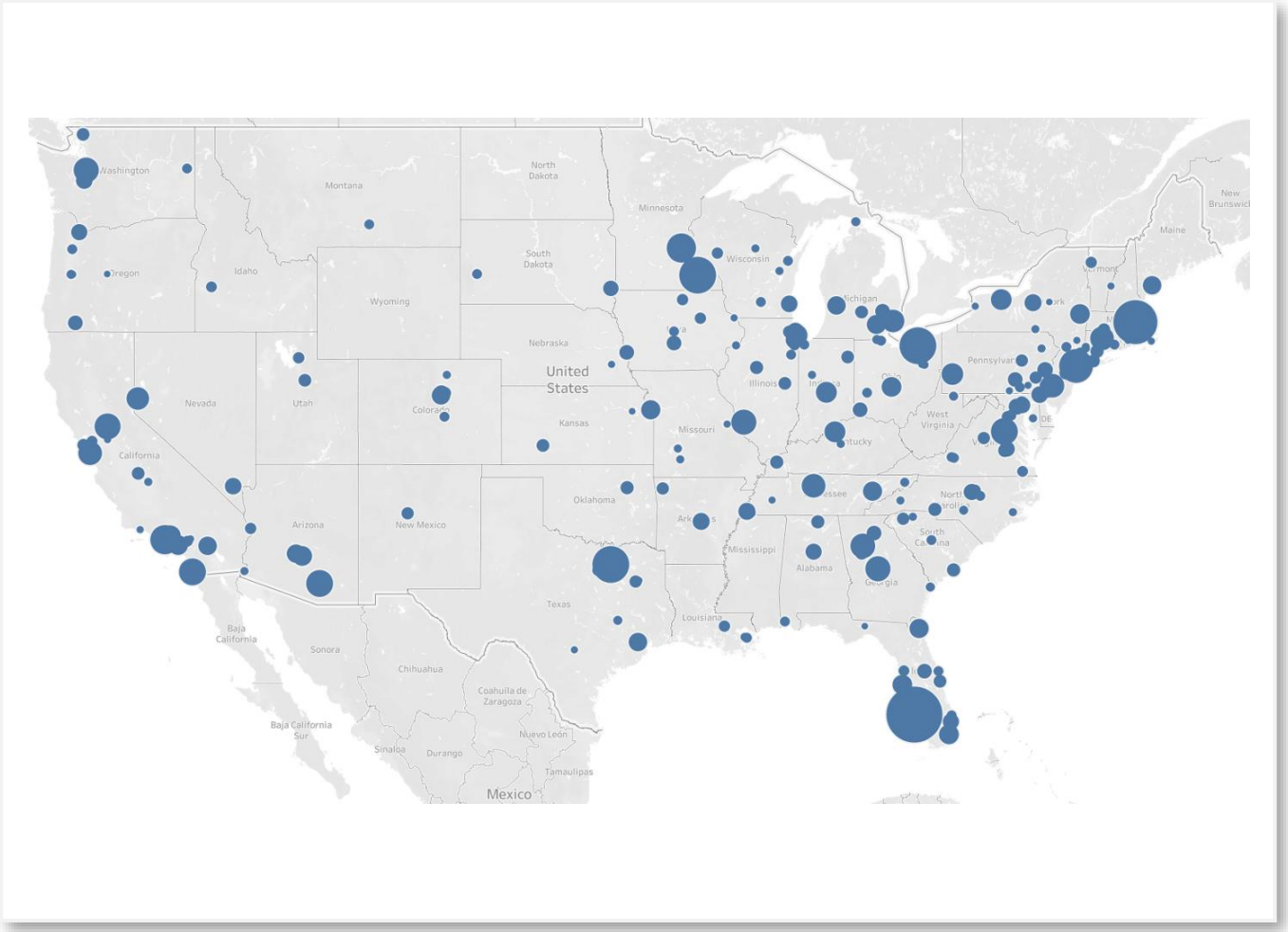
Concentrated Patient Volume

Cellectar's Commercial Strategy to Focus on Key Account Segmentation



WM Patient Claim Distribution

~80% Concentrated in 15 states

~70% Treated in 329 accounts

~75% 2nd line + treated in 199 accounts

Geographic and Account Segmentation Supports Fast Patient Share Capture in a Highly Concentrated Market

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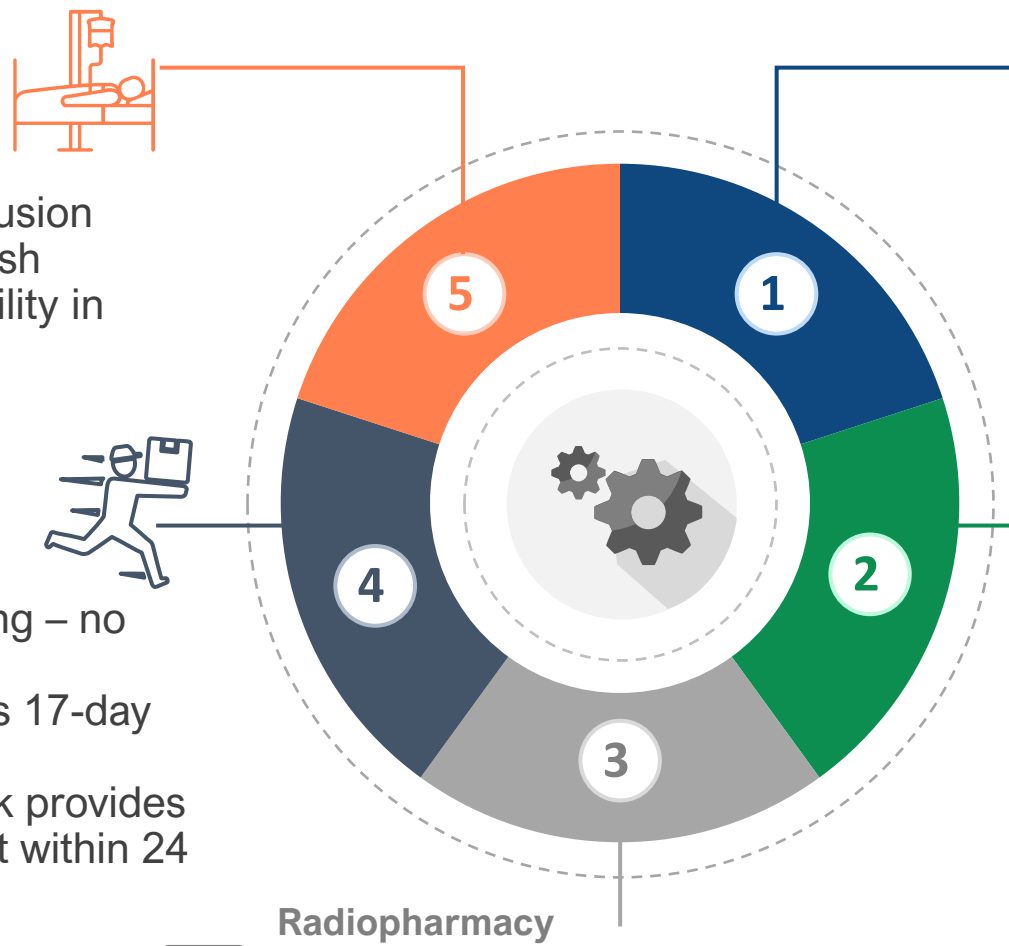
Supply, Manufacturing and Logistics

Delivering Convenient Patient-Centric Treatment



Patient Centric

- Average 12 – 15 min infusion
- ~ 30 mins with saline flush
- Shelf-life provides flexibility in treatment scheduling

Radioisotope Supply

- Isotope readily available from multiple sources
- 3 Cellectar validated sources currently being used
- Additional sources under evaluation

Logistics & Stability

- Room temperature handling – no cold chain
- Novel formulation provides 17-day shelf-life
- Global distribution network provides US sites with drug product within 24 hours of manufacturing

Manufacturing

- 2 existing finished product manufacturing sites
- Additional sites being considered
- Existing supply maximum ~1,000/wk
- Additional sites = ~50% increase
- Multiple sites reduce supply risks

Radiopharmacy

- Commercial and non-commercial radiopharmacies to provide broad access
- Majority of radiopharmacies located in areas with high concentration of WM patients
- Product comes ready to use; no onsite compounding

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