Lantheus Holdings

Investor Presentation

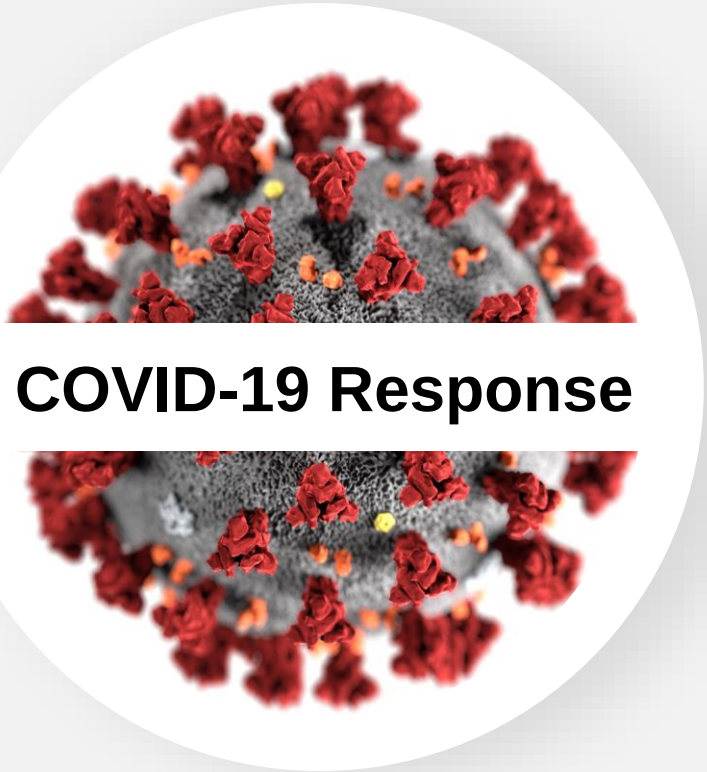
September 2020

Safe Harbor Statements

Cautionary Statement Regarding Forward-Looking Statements

This document contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, that are subject to risks and uncertainties and are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements may be identified by their use of terms such as “anticipate,” “believe,” “confident,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “target,” “will” and other similar terms. Such forward-looking statements are based upon current plans, estimates and expectations that are subject to risks and uncertainties that could cause actual results to materially differ from those described in the forward-looking statements. The inclusion of forward-looking statements should not be regarded as a representation that such plans, estimates and expectations will be achieved. Readers are cautioned not to place undue reliance on the forward-looking statements contained herein, which speak only as of the date hereof. The Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law. Risks and uncertainties that could cause our actual results to materially differ from those described in the forward-looking statements include : (i) our future operating results; (ii) the impact of the COVID-19 pandemic on our business, financial condition and prospects; (iii) risks that the anticipated benefits of the acquisition of Progenics Pharmaceuticals, Inc. or other commercial opportunities may otherwise not be fully realized or may take longer to realize than expected; (iv) regulatory risks related to our product candidates, including without limitation, our lead clinical development agent PyL™ F 18; (v) expectations for future clinical trials, the timing and potential outcomes of clinical studies and filings and other interactions with regulatory authorities; (vi) the impact of legislative, regulatory, competitive and technological changes; and (vii) the risk and uncertainties discussed in our filings with the Securities and Exchange Commission (including those described in the Risk Factors section in our Annual Reports on Form 10-K and our Quarterly Reports on Form 10-Q).

Lantheus' Top Priority is the Health and Safety of Our Employees, Our Communities, and the Patients and Customers We Serve



Lantheus products deemed essential

- Products continually manufactured and shipped daily from Lantheus campus

Cash availability remains solid due to prudent management of expenses

- Maintained liquidity to navigate uncertainty of the COVID-19 pandemic and beyond
- Implemented short-term expense controls

Donated 10,000 pieces of PPE

- Including masks, gowns and gloves to meet the urgent needs of healthcare workers on the front lines

The Lantheus Story: Market Leader Where We are Today

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Targeting
Growing Markets

3

Enhancing Growth
from a Position
of Strength

1

Market Leader
Where We
Are Today

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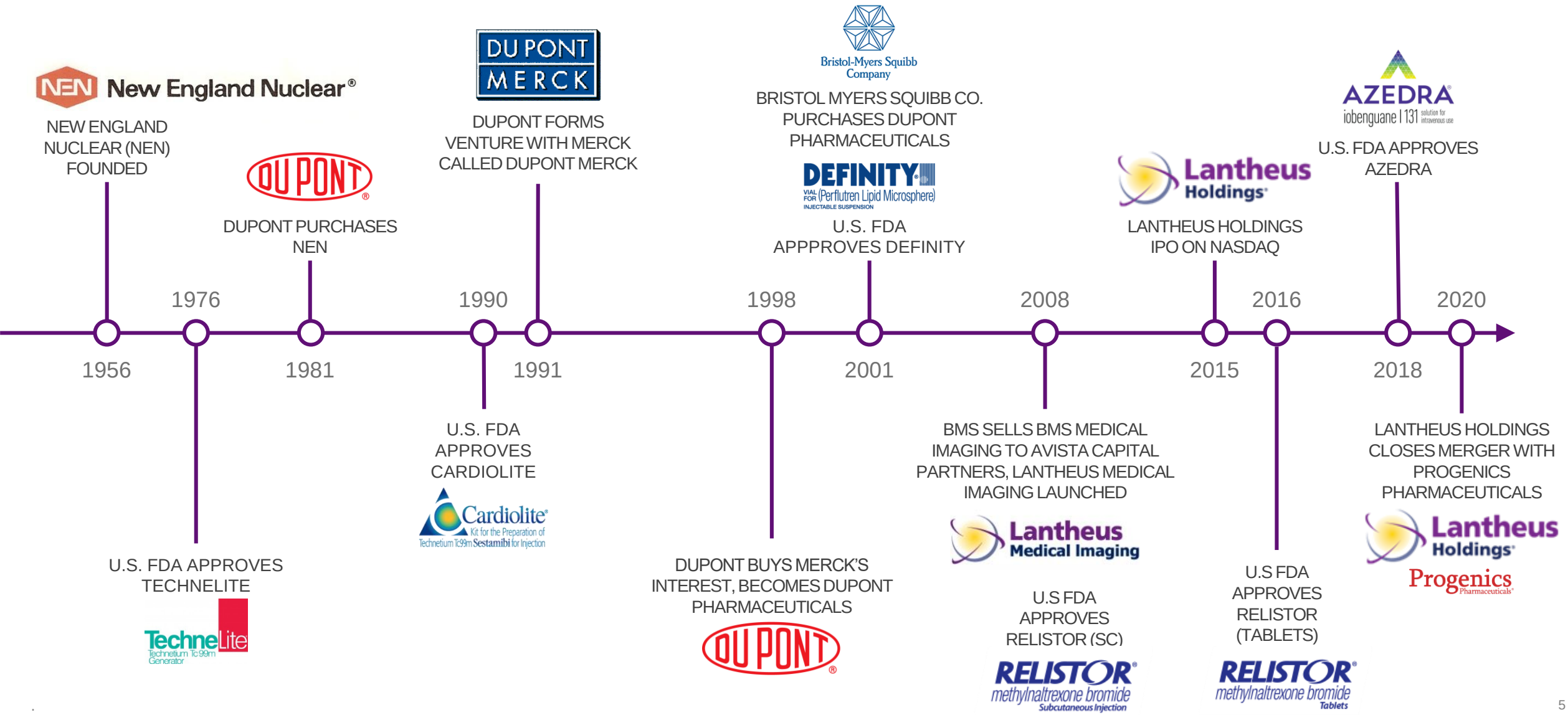
Strong Capital
Position To Fund
Our Future

Corporate Timeline



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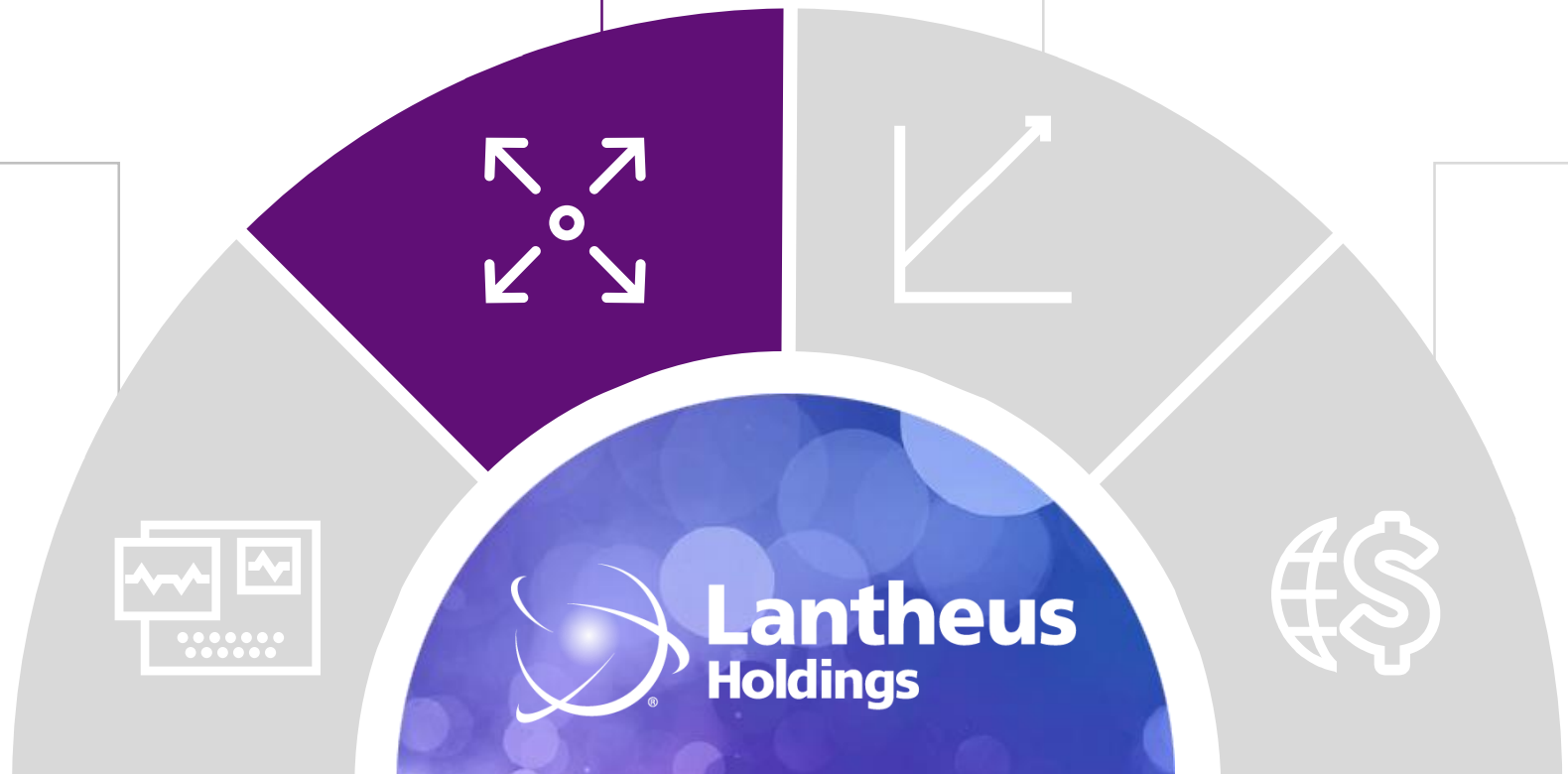
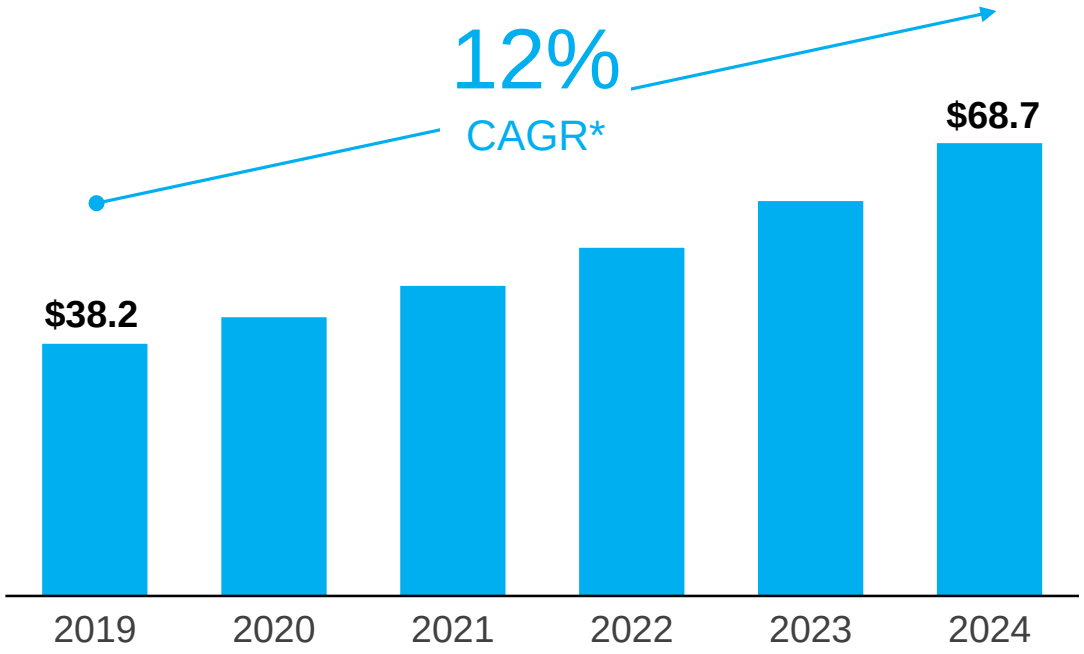


Serving Large, Growing Global Markets

Global Diagnostic Imaging Market

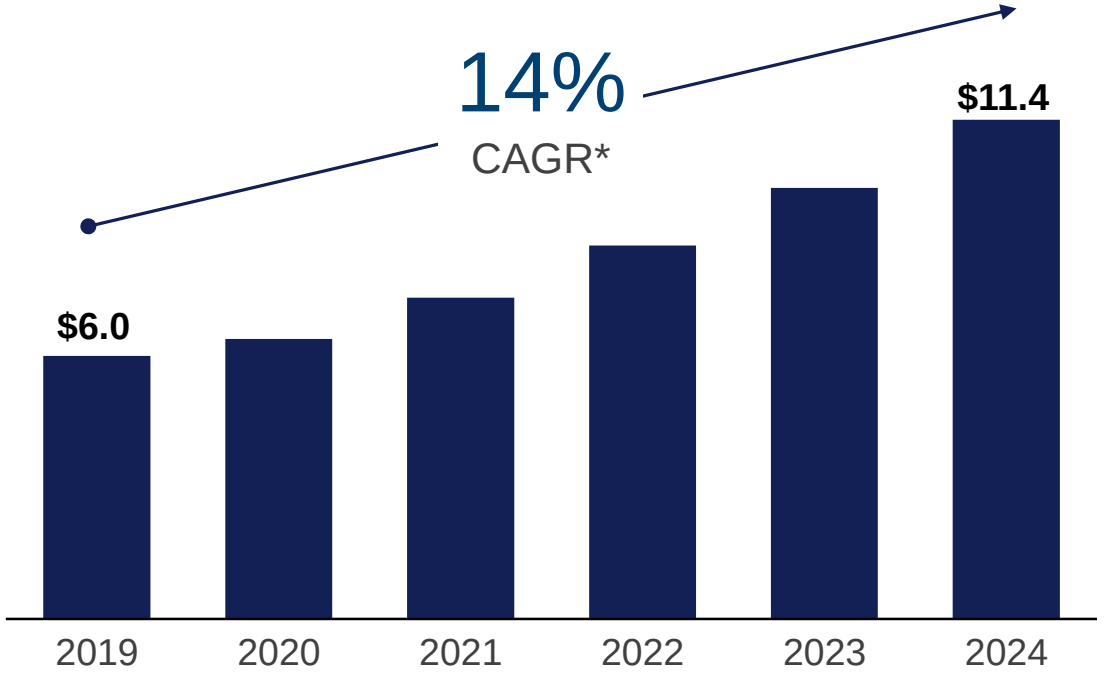
($B)



Source: GlobalData, Sept 2019

Global Nuclear Medicine Market

($B)



Source: MedRaysIntell, July 2019

* 5-year CAGR

Strategic Focus in Attractive Markets

Lantheus 2.0 Vision

- **Sustain and Accelerate Revenue Growth**
- **Diversified Portfolio of Diagnostics and Radiopharmaceutical Therapeutics**
- **Attractive Margins**

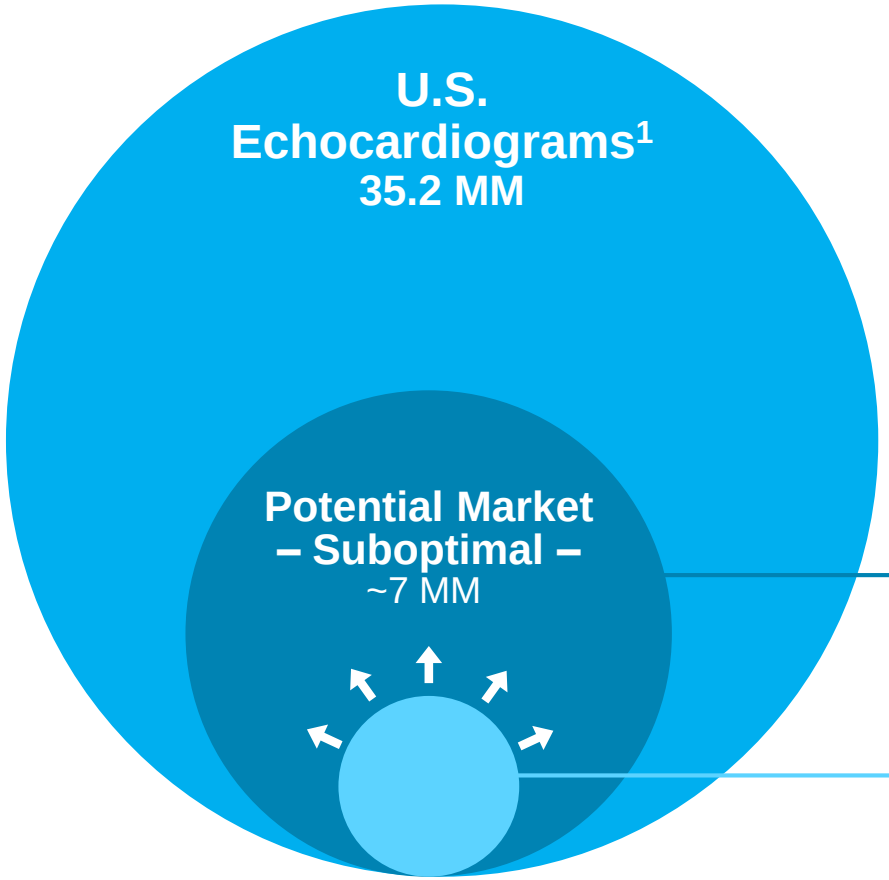
Asset Portfolio	Cardiac	Therapeutic Applications	Prostate	Neuroendocrine Tumors	Immuno-Oncology
Microbubbles	DEFINITY® (Perflutren Lipid Microsphere) INJECTABLE SUSPENSION	CEREVAST™ CARTHERA Advanced Brain Therapy Through Innovation			
Nuclear 2.0 Diagnostics	• flurpiridaz F 18		• PyL™ • 1404	• LMI 1195	NanoMab
Nuclear 2.0 Therapeutics			• 1095 • PSMA TTC	AZEDRA® iobenguane I 131 solution for intravenous use	
Complex Solutions			aBSI AUTOMATED BONE SCAN INDEX • aPromise		

Significant U.S. Echocardiography Market Opportunity for DEFINITY

~2% Annual Growth Rate in Total Echocardiograms

DEFINITY®
VIAL FOR (Perflutren Lipid Microsphere)
INJECTABLE SUSPENSION

Chosen four out of five times when an imaging enhancing agent is used[3]



Current addressable market (20% of total)[2]

Echocardiograms currently performed with an enhancing agent[3]

Circles not drawn to scale.

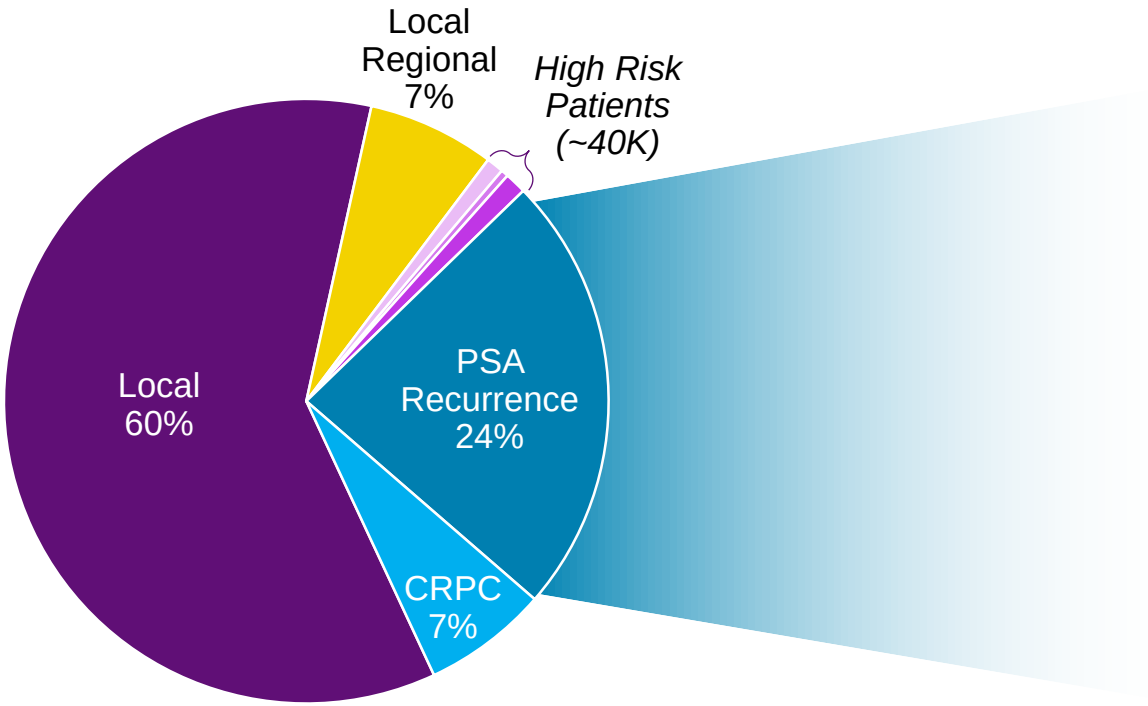
[1] AMR Echocardiography Monthly Monitor, December 2019, [2] 20% of echocardiograms result in sub-optimal images. Source: Kurt M et al. J Am Coll Cardiol. 2009;53(9):802-810,

[3] LMI estimate.

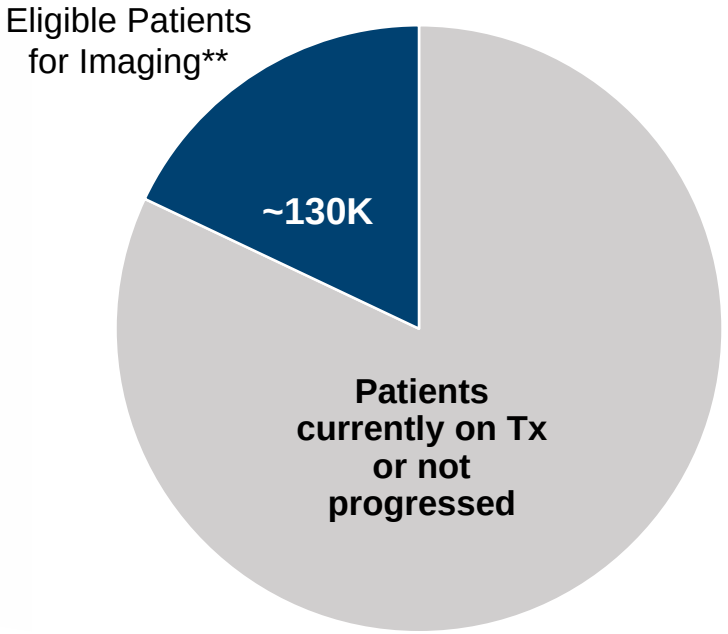
Our PSMA* Product Candidate Will Serve the Prostate Cancer Market

PSA Recurrence population is ~720K with 18% Biochemical Recurrent

Prostate Cancer Population (~3M)



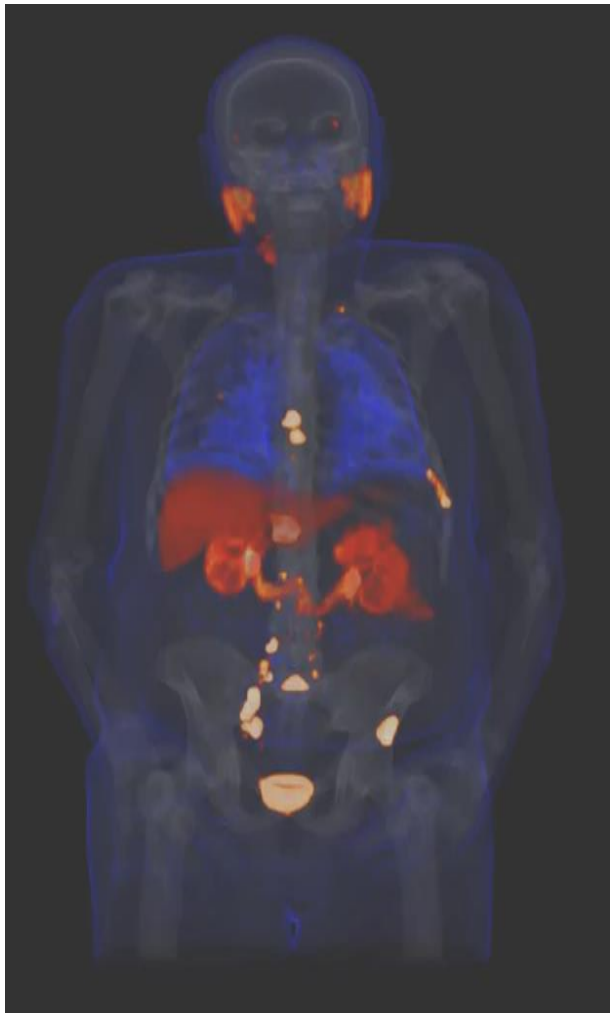
PSA Recurrence Population (~720K)



PSA Recurrence: Includes patients who have had rising PSA following definitive treatment or hormonal therapy
CRPC: Includes patients who are castrate resistant and do not have rising PSA
Sources: NCCN Guidelines; USPSTF Guidelines; Cancer.org; CDC.gov; Seer.com; New England Journal of Medicine, Volume 377, July 2017, Pages 352-360; New England Journal of Medicine, Volume 373, August 2015, Pages 737-746; PLOS One, Volume 10, Issue 10, October 2015; European Urology, Volume 71, Issue 2, February 2017, Pages 151-154; Therapeutic Advances in Urology, Volume 7, Issue 2, August 2015, Pages 194–202; Primary Market Research.
*-Prostate Specific Membrane Antigen; **-Management estimate utilizing, among other things, Sher et al: "Prevelance of Prostate Cancer Clinical States and Mortality in the United State: Estimates Using a Dynamic Progression Model"

PyL: PSMA-targeted PET/CT Imaging Agent Product Candidate

- Enables visualization of both bone and soft tissue metastases
- PSMA is highly specific to prostate cancer cells, not confounded by degenerative or inflammatory conditions
- Identified more lesions than conventional imaging
- Administered in ~3,500 patients with prostate cancer globally, including:
  - 2 pivotal studies (OSPREY and CONDOR, N~600)
  - Company- or investigator-sponsored studies (N~900)
  - Clinical use reported in the literature (N~2,000)
- Attractive efficacy and safety profile
  - Primary endpoint achieved with a correct localization rate of 84.8% to 87.0% among the three blinded independent readers (the lower bound of the 95% confidence intervals ranging from 77.8% to 80.4%)
  - Key secondary endpoint showed 63.9% of patients had a change in intended disease management plans due to PyL imaging results
- Lantheus currently targeting PyL NDA submission to the U.S. FDA no later than mid-Q4 2020



The Lantheus Story: Enhancing Growth from a Position of Strength

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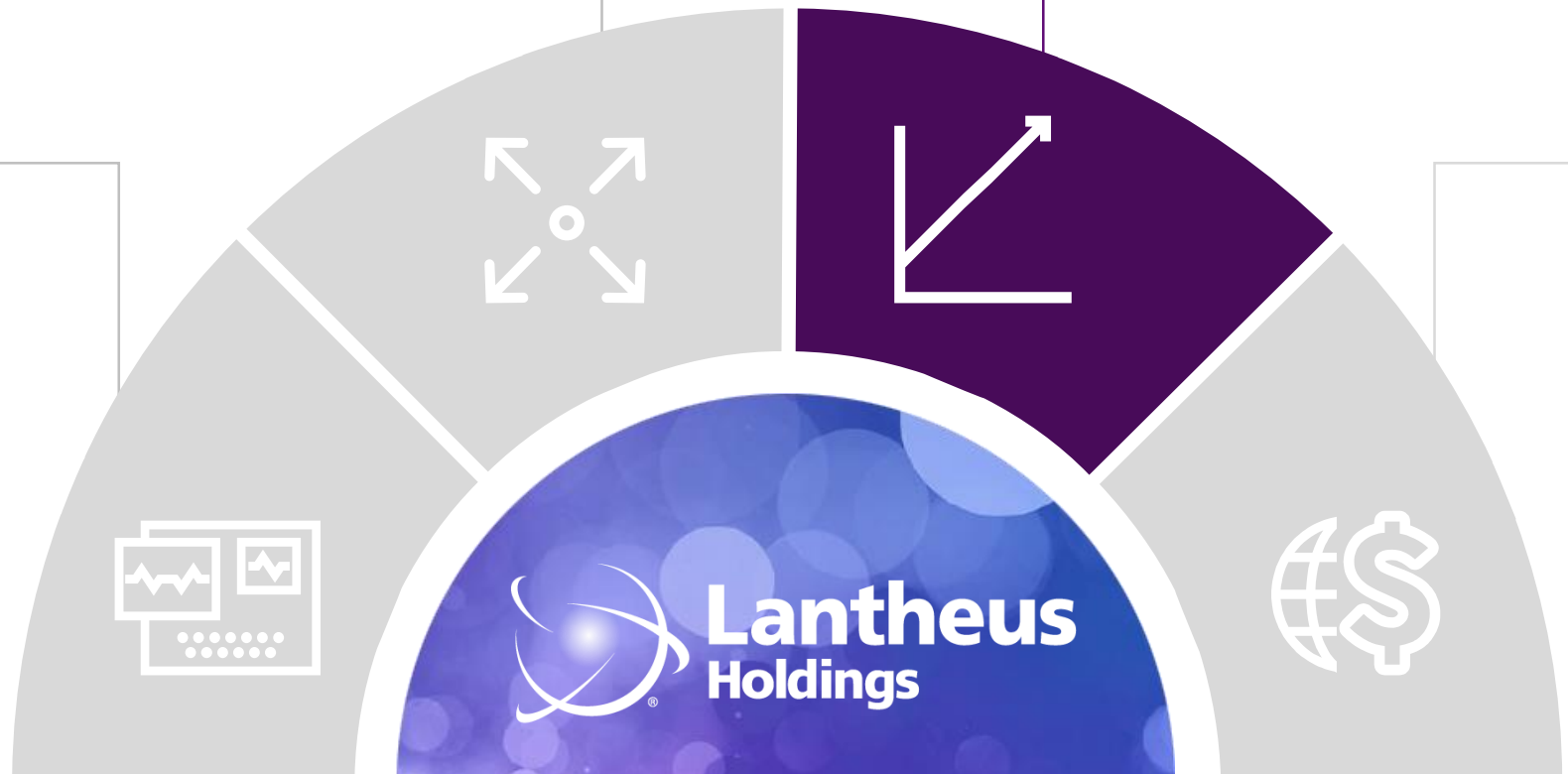
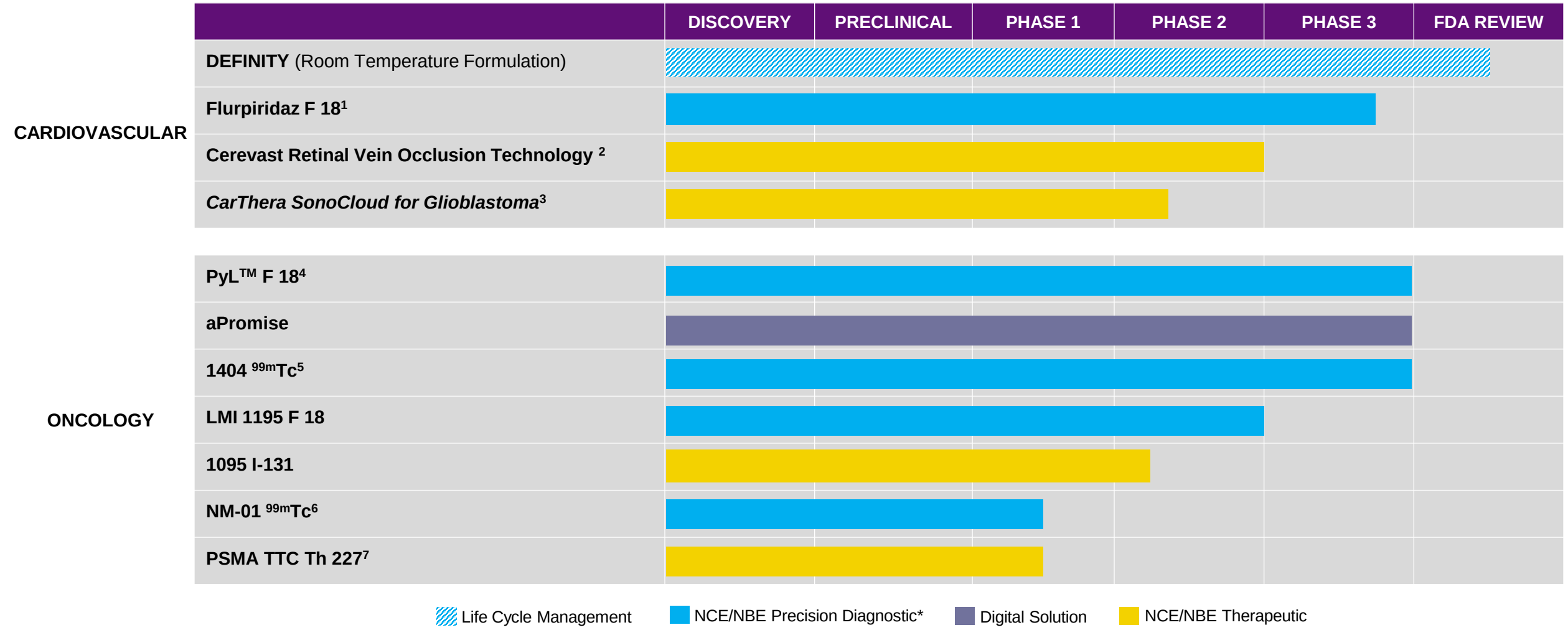
Position To Fund
Our Future



Robust Pipeline with Clear Value Drivers



NCE: New Chemical Entity; NBE New Biologic Entity.
[1] GE Healthcare is conducting the second phase 3 study; [2] Clinical development program conducted by Cerevast; [3] Clinical development program conducted by CarThera; [4] Lantheus developing in U.S.; Curium licensed in Europe; [5] Licensed in Europe by ROTOP; [6] Ongoing Phase 1 clinical development conducted by NanoMab; [7] Clinical development program conducted by Bayer.

The Lantheus Story: Strong Capital Position To Fund Our Future

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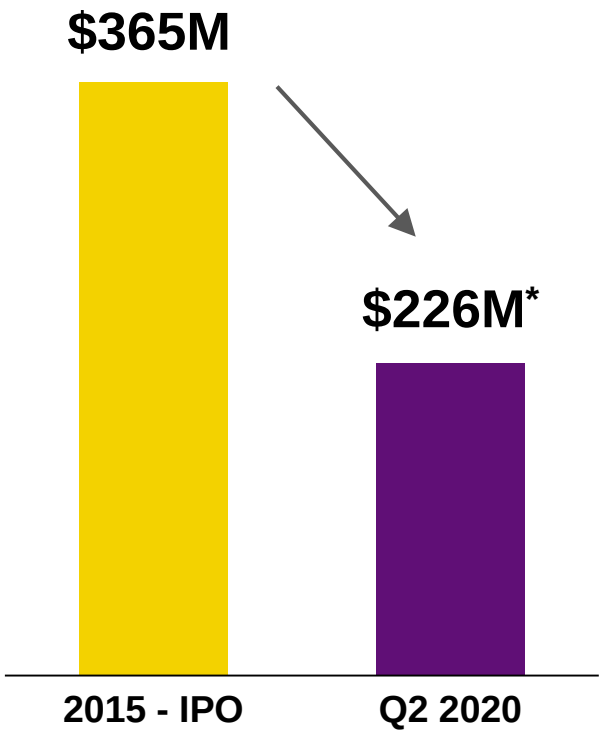
Strong Balance Sheet and Financial Flexibility

Decline in Debt



Strong Balance Sheet
(Q2 2020)

3.1x
Net Leverage

Resources
(Q2 2020)

Cash on hand	**$90M**
Available revolving credit	**$200M**

* Includes non-recourse RELSITOR loan.

Integration Milestones On-Track

92

Employees onboarded

90

Strategic & tactical goals by year end 2020

$4.6M

Synergies captured in first 6 months

In Summary: Accelerating Growth From a Position of Strength

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Appendix

CONDOR: Safety of 18F-DCFPyL in All Subjects

Preferred Term	All Subjects N=208 n (%)	Events
Any treatment-emergent Adverse Event	14 (6.7)	21
Headache	4 (1.9)	4
Hypertension	2 (1.0)	2
Fatigue	2 (1.0)	2
Injection site pruritus	1 (0.5)	1
Malaise	1 (0.5)	1
Paraesthesia	1 (0.5)	1
Pruritus	1 (0.5)	1
Rash	1 (0.5)	1
Sinus bradycardia	1 (0.5)	1
Abdominal pain	1 (0.5)	1
Hypersensitivity	1 (0.5)	1
Urinary tract infection	1 (0.5)	1
Back pain	1 (0.5)	1
Urinary incontinence	1 (0.5)	1
Erectile dysfunction	1 (0.5)	1
Oropharyngeal pain	1 (0.5)	1

- 14 (6.7%) patients experienced at least one TEAE
- The most frequent AE was headache (1.9%), experienced by 4 patients
- Hypersensitivity was the single drug-related Grade 3 AE in a patient with significant allergic hx