

Transforming How the Immune System Targets and Fights Cancer to Promote Survival

Precision Designed Science For Immunotherapy

NASDAQ: PDSB

May 2024

Forward-Looking Statement

This communication contains forward-looking statements (including within the meaning of Section 27E of the United States Securities Exchange Act of 1934, as amended, and Section 27A of the United States Securities Act of 1933, as amended) concerning PDS Biotechnology Corporation (the "Company") and other matters. These statements may discuss goals, intentions and expectations as to future plans, trends, events, results of operations or financial condition, or otherwise, based on current beliefs of the Company's management, as well as assumptions made by, and information currently available to, management. Forward-looking statements generally include statements that are predictive in nature and depend upon or refer to future events or conditions and include words such as "may" "will" "should" "would" "expect" "anticipate" "plan" "likely" "believe" "estimate" "project" "intend," "forecast," "guidance", "outlook" and other similar expressions among others. Forward-looking statements are based on current beliefs and assumptions that are subject to risks and uncertainties and are not guarantees of future performance. Actual results could differ materially from those contained in any forward-looking statement as a result of various factors, including, without limitation: the Company's ability to protect its intellectual property rights; the Company's anticipated capital requirements, including the Company's anticipated cash runway and the Company's current expectations regarding its plans for future equity financings; the Company's dependence on additional financing to fund its operations and complete the development and commercialization of its product candidates, and the risks that raising such additional capital may restrict the Company's operations or require the Company to relinquish rights to the Company's technologies or product candidates; the Company's limited operating history in the Company's current line of business, which makes it difficult to evaluate the Company's prospects, the Company's business plan or the likelihood of the Company's successful implementation of such business plan; the timing for the Company or its partners to initiate the planned clinical trials for PDS01ADC, PDS0101 and other Versamune® and Infectimune® based product candidates; the future success of such trials; the successful implementation of the Company's research and development programs and collaborations, including any collaboration studies concerning PDS01ADC, PDS0101 and other Versamune® and Infectimune® based product candidates and the Company's interpretation of the results and findings of such programs and collaborations and whether such results are sufficient to support the future success of the Company's product candidates; the success, timing and cost of the Company's ongoing clinical trials and anticipated clinical trials for the Company's current product candidates, including statements regarding the timing of initiation, pace of enrollment and completion of the trials (including the Company's ability to fully fund its disclosed clinical trials, which assumes no material changes to the Company's currently projected expenses), futility analyses, presentations at conferences and data reported in an abstract, and receipt of interim or preliminary results (including, without limitation, any preclinical results or data), which are not necessarily indicative of the final results of the Company's ongoing clinical trials; any Company statements about its understanding of product candidates mechanisms of action and interpretation of preclinical and early clinical results from its clinical development programs and any collaboration studies; to aid in the development of the Versamune® platform; and other factors, including legislative, regulatory, political and economic developments not within the Company's control. The foregoing review of important factors that could cause actual events to differ from expectations should not be construed as exhaustive and should be read in conjunction with statements that are included herein and elsewhere, including the risk factors included in the Company's annual, quarterly and periodic reports filed with the SEC. The forward-looking statements are made only as of the date of this press release and, except as required by applicable law, the Company undertakes no obligation to revise or update any forward-looking statement, or to make any other forward-looking statements, whether as a result of new information, future events or otherwise.

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KEYTRUDA® is a registered trademark of Merck Sharp and Dohme LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA.

Late-Stage Head and Neck Cancer Program as Value Catalyst

High-Value Lead Program

- Pivotal trial planned for PDS01ADC + Versamune[®] HPV (PDS0101) + pembrolizumab in first line recurrent/metastatic head and neck cancer in 2024

Novel Investigational “Inside-Outside” MOA

- PDS01ADC + Versamune[®] disrupts tumor’s inside defenses, and generates potent, targeted killer T-cell attack from outside
Compelling Phase 2 survival data

Robust Phase 2 Data in 400+ Patients

- PDS01ADC favorable safety profile demonstrated in >300 patients
Versamune[®] HPV administered to >110 HNSCC patients

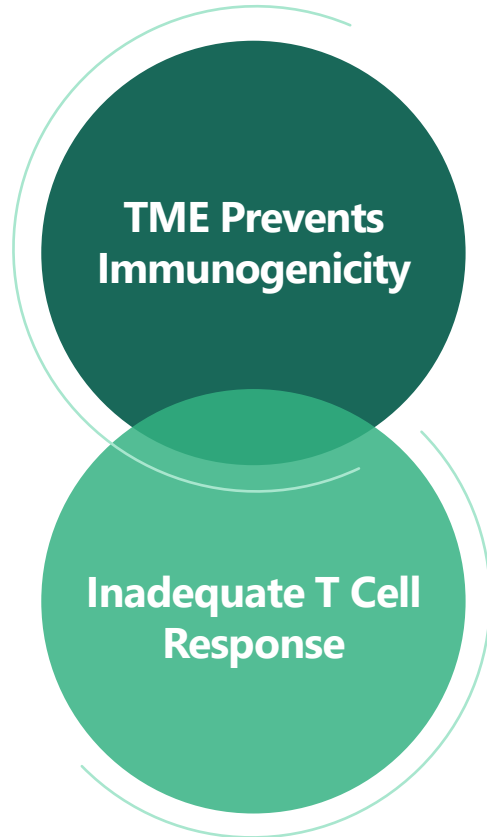
Financials

- Cash runway into Q4 2025 (without pivotal trial)¹

1. Company’s 10-K for year ended 12/31/2023 includes going concern opinion. Cash runway estimate based on currently available cash resources and cash flow projections and assumes no initiation of pivotal trial and Company debt not being called by lenders.

Why Immunotherapies Fail in Solid Tumors

Two Critical Limitations Remain



Immune-Desert Tumors:

Lack T cells because T cells don't get activated or recognize the cancer

Immune-Excluded Tumors:

Contain immune suppressive cytokines and inhibitory factors that prevent T cell infiltration

Inability to generate the right type and quantity of effective tumor-infiltrating and tumor-killing T cells

TME = Tumor Microenvironment

References: Darvin et al. *Experimental & Molecular Medicine* (2018) 50:165.

Chen, D. S. & Mellman, I. *Nature* 541, 321 (2017).

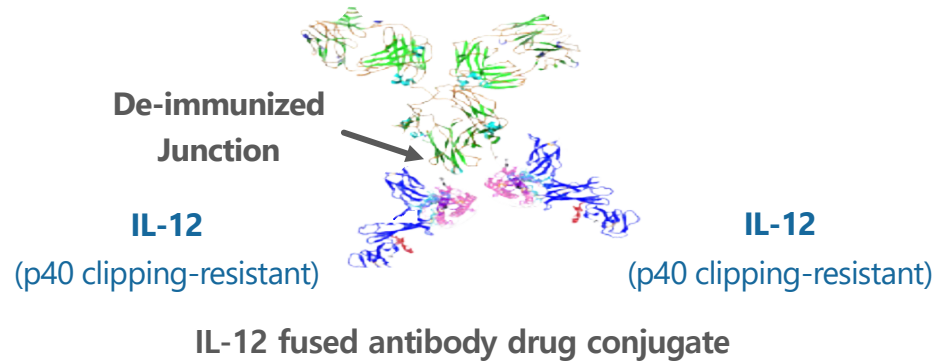
Proprietary Dual Platform Enables *Inside-Outside* Attack on Tumor

Potential to Overcome Suppression of the T Cell Response by the Tumor

PDS01ADC

Most clinically advanced tumor-targeted IL-12

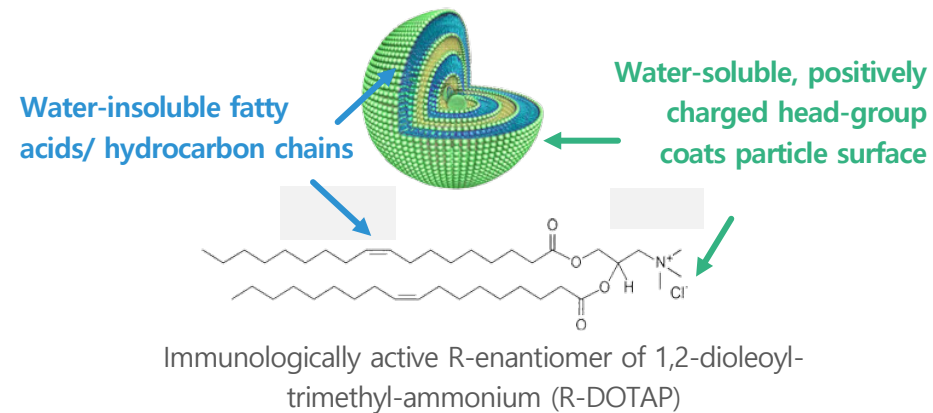
NHS76 (Tumor Necrosis Targeting Ab – Binds to exposed DNA)



Inside

Infiltrates TME to Suppress the Tumor's Defenses & Promotes T Cell Infiltration/Immunogenicity

Versamune®



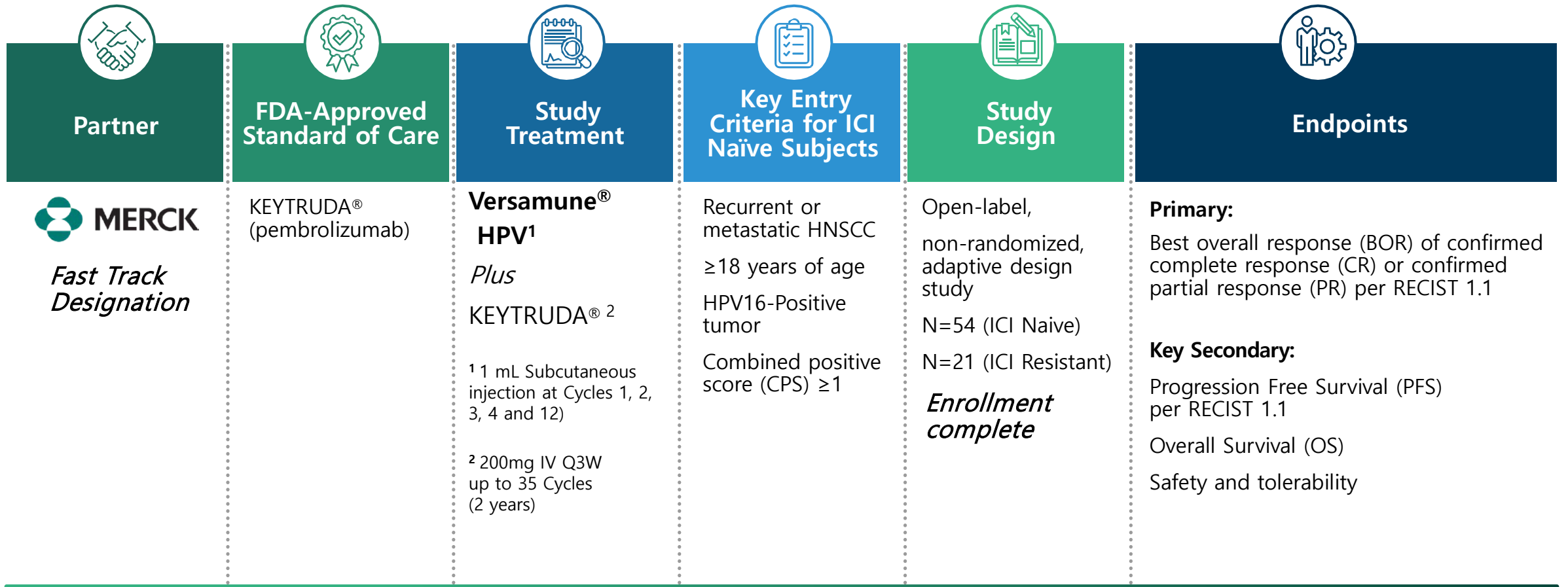
Outside

Induces Right Type & Quantity of Powerful Tumor-Targeting Killer T Cells

TME = Tumor Microenvironment

VERSATILE-002 Phase 2 Clinical Trial (Multi-Site US/EU Trial)

Objective: To Assess the Combination of Versamune® HPV and KEYTRUDA® in Subjects with Recurrent or Metastatic HPV16-positive HNSCC



VERSATILE-002 First Line R/M HNSCC

Key Demographics and Treatment Exposure

Demographic	ITT Population (N=55)
Age, Median (Min, Max)	64.0 (46, 83)
Sex, n (%)	
Male	51 (92.7)
Female	4 (7.3)
Race, n (%)	
American Indian or Alaska Native	0
Asian	1 (1.8)
Black or African American	1 (1.8)
Pacific Islander	0
White	52 (94.5)
Other	1 (1.8)
ECOG, n (%)	
0	32 (58.2)
1	23 (41.8)
CPS, n (%)*	
<1	0
1–19	33 (60.0)
≥20	22 (40.0)

Treatment Exposure (ITT Population)

- Median number of PDS0101 doses: 4 (range 1–5)
 - 76.4% received ≥4 doses
 - 38.2% received 5 doses (5th dose is 6 months after dose 4)
- Median number of KEYTRUDA[®] doses: 8 (range 1–35)
 - 43.6% received ≥10 doses

Summary of VERSATILE-002 Results

First Line Recurrent/Metastatic HNSCC

	VERSATILE-002 (Versamune® HPV + KEYTRUDA®)		KEYNOTE-048 (KEYTRUDA®)	
	CPS ≥ 1	CPS ≥ 20	CPS ≥ 1	CPS ≥ 20
Confirmed BOR (%)	34	48	19	23
Median PFS (months)	6.3	14.1	3.2	3.4
Median Overall Survival (months)* <i>(Future Pivotal Trial Endpoint)</i>	30.0	30.0	12.3	14.9

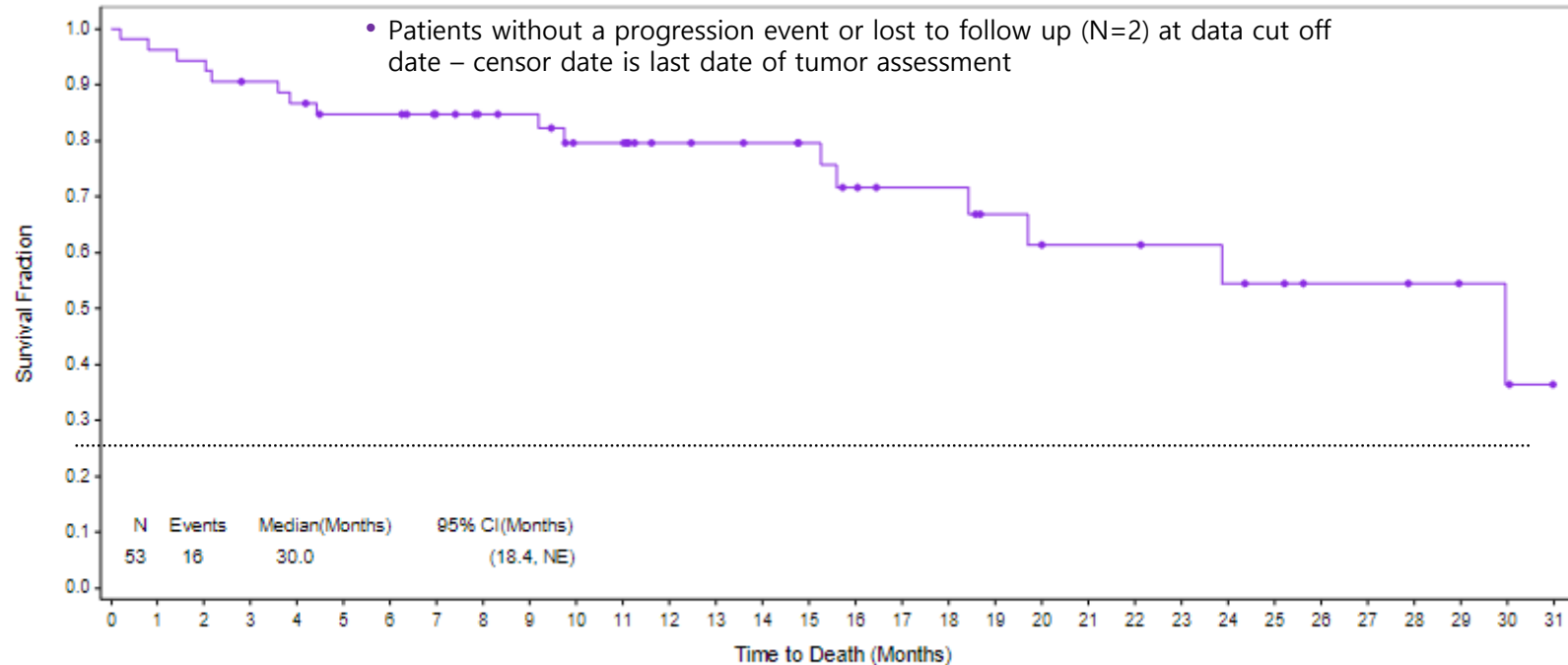
Confirmed Best Overall Response and Disease Control Rate Based on Investigator Assessment Per RECIST v1.1 by PD-L1 Expression Level, mITT Population
 Progression-Free Survival (PFS) Based on Investigator Assessment Per RECIST v1.1 by PD-L1 Expression Level, mITT Population

No controlled or comparative studies have been conducted between checkpoint inhibitors and Versamune® HPV

* FDA-recommended clinical endpoint

Median Overall Survival of 30 Months in mITT and ITT Populations

Kaplan-Meier Estimates of OS in Recurrent/Metastatic HNSCC



Number of Subjects at Risk (Events)

CPI naive 53(0) 51(2) 50(3) 47(5) 45(7) 42(8) 42(8) 38(8) 35(8) 34(8) 29(10) 29(10) 24(10) 23(10) 22(10) 20(10) 17(12) 15(12) 15(12) 12(13) 10(14) 10(14) 10(14) 9(14) 8(15) 7(15) 5(15) 5(15) 4(15) 3(15) 2(16) 0(16)

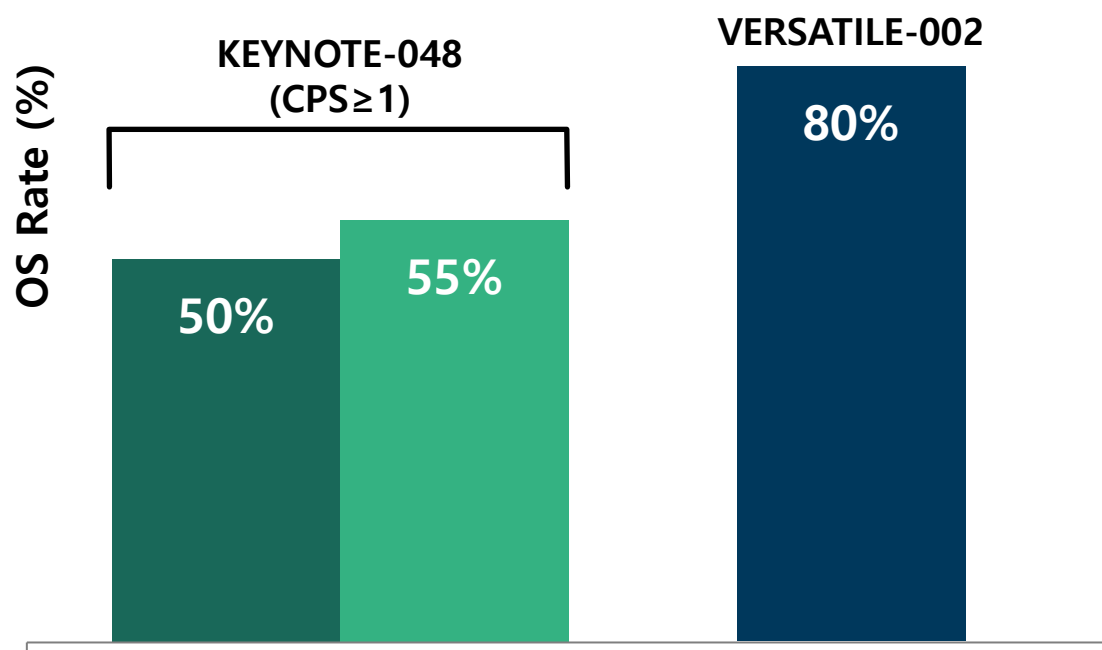
Versamune[®] HPV and KEYTRUDA[®] Combination Demonstrates Promising Survival In First Line R/M HNSCC

■ Keytruda[®]

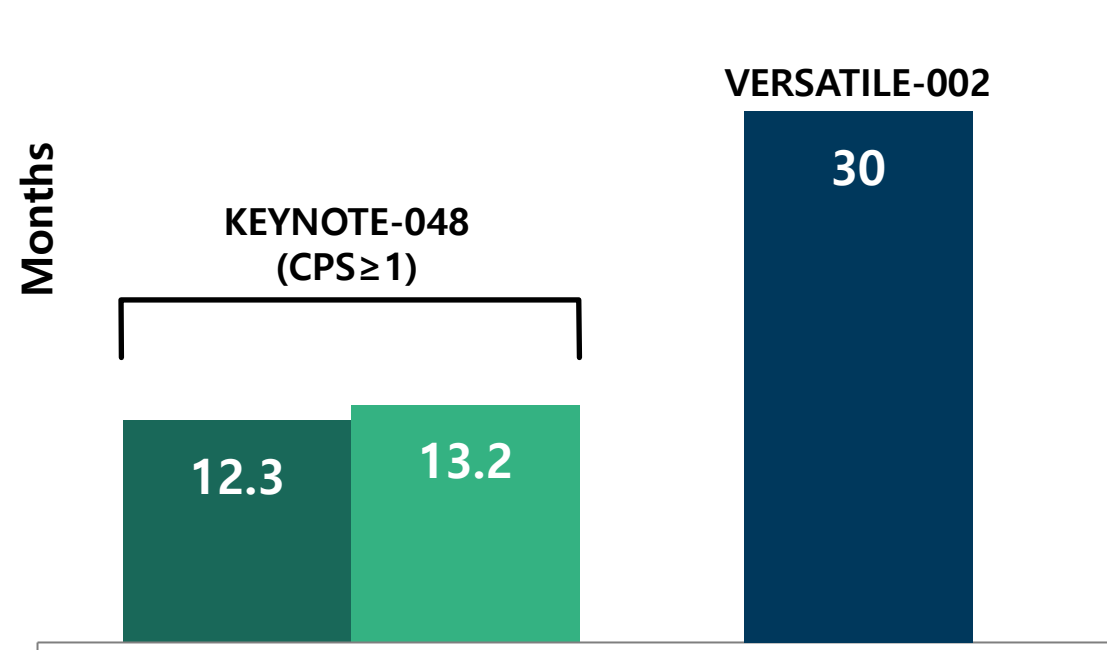
■ Chemotherapy + Keytruda[®]

■ Versamune[®] HPV + Keytruda[®]

12-month OS Rate

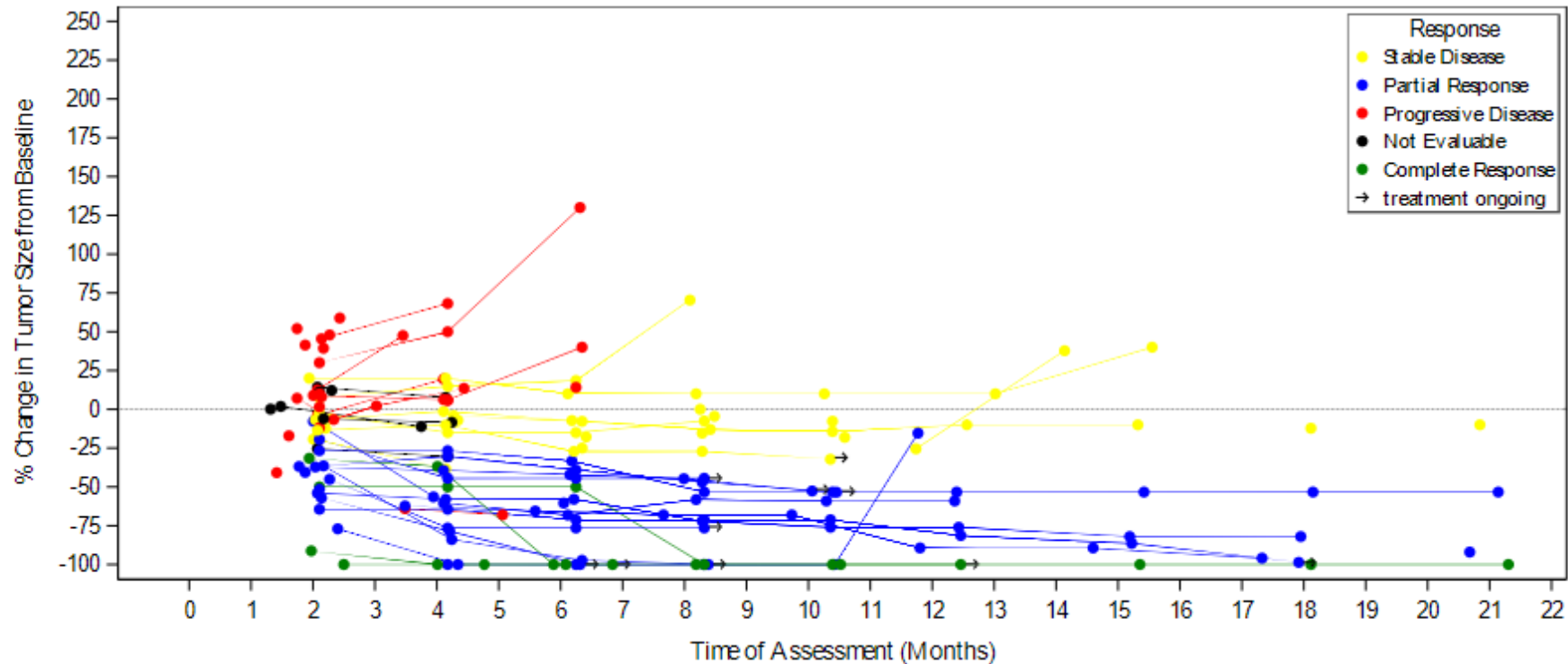


Median Overall Survival (mOS)



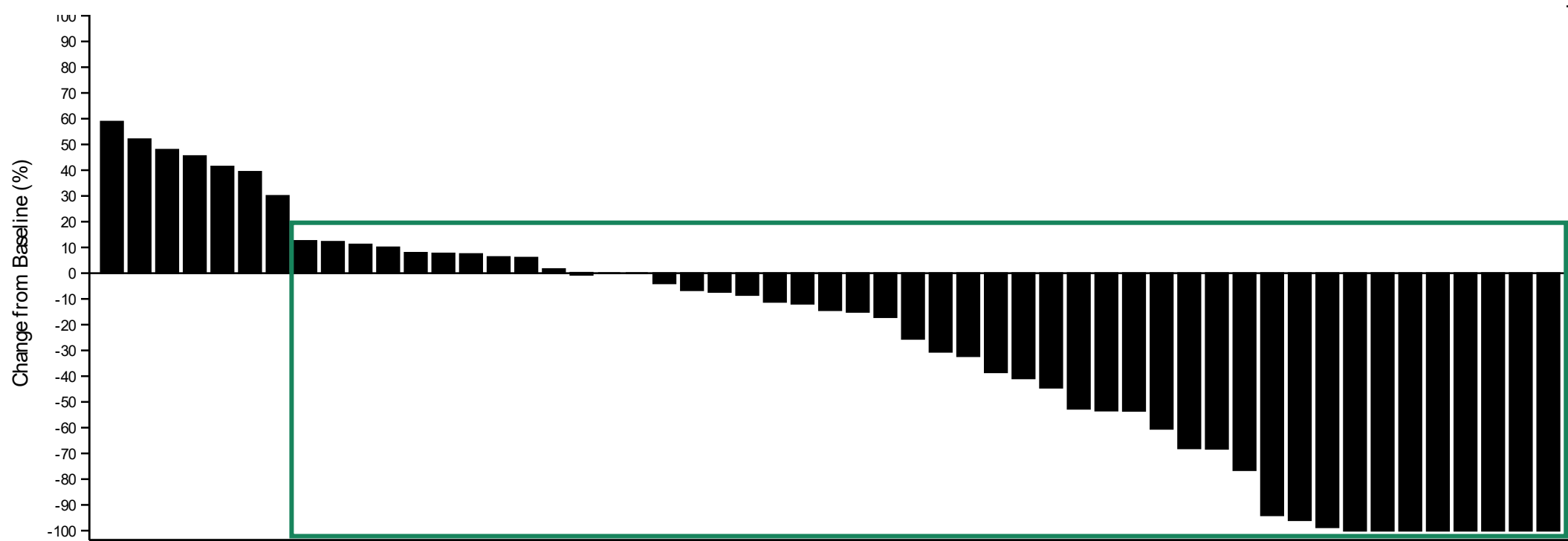
Durable Responses Reported with 75.5% of Patients with CPS ≥ 1 Having CR, PR or SD According to RECIST 1.1

Spider Plot Showing Disease State with Time in Recurrent/Metastatic HNSCC



Disease Stabilization or Tumor Reduction Reported in 87% (46/53) of First Line Recurrent/Metastatic HNSCC Patients

Best Percentage Change from Baseline in Target Lesions (mITT population*)



* Modified Intent-to-Treat: All ITT subjects who had at least 1 imaging assessment

Versamune[®] HPV and KEYTRUDA[®] Combination Well Tolerated in First Line R/M with No Grade 5 TRAE*

Injection Site Related TRAEs	n (%)
Injection site pain	37 (59.7)
Injection site swelling	19 (30.6)
Injection site erythema	13 (21.0)
Injection site warmth	11 (17.7)
Injection site discoloration	9 (14.5)
Injection site reaction	9 (14.5)
Injection site inflammation	8 (12.9)
Injection site pruritus	8 (12.9)
Injection site rash	4 (6.5)

TRAEs by Grade	n (%)
Any Combination TRAE	55 (88.7)
Grade 1	29 (46.8)
Grade 2	18 (29.0)
Grade 3	7 (11.3)
Grade 4	1 (1.6)
Grade 5	0

All Other TRAEs	n (%)
Fatigue	23 (37.1)
Headache	12 (19.4)
Pruritis	9 (14.5)
Diarrhea	7 (11.3)
Rash	6 (9.7)
Pain	5 (8.1)
Alanine aminotransferase increased	4 (6.5)
Aspartate aminotransferase increased	4 (6.5)
Arthralgia	4 (6.5)
Cough	4 (6.5)
Malaise	4 (6.5)

Grade 3 Combination-TRAE were: Fatigue (2), Rash, Alanine aminotransferase increased, Blood alkaline phosphatase increased, Lymphocyte count decreased, Autoimmune colitis, Colitis, Headache, Acute kidney injury, Hyponatremia, Hyperglycemia,
Grade 4 Combination-TRAE: encephalitis

VERSATILE-002 Conclusions

- **VERSATILE-002 has successfully met its primary end point of 14 or more confirmed objective responses by RECIST v1.1 in ICI naïve patients with CPS \geq 1**
- **BOR by Investigator Assessment: 34% (CPS \geq 1) and 48% (CPS \geq 20)**
- **Versamune[®] HPV may significantly impact survival in first line treatment of recurrent and/or metastatic HPV16 positive head and neck cancer**
 - The median OS of 30 months and 12-month OS rate of 80% both exceed the best publicly reported survival results to date with both investigational and approved products in patients with CPS \geq 1
- **The combination appears to be well tolerated**
- **Immunological and clinical data suggests that Versamune[®] HPV induces the right type and quantity of potent tumor targeting T cells that promote patient survival**

PDS01ADC and Versamune® Have Broad Therapeutic Potential

Synergistic Effect With SoC Modalities Across a Spectrum of Solid Tumors

PDS01ADC

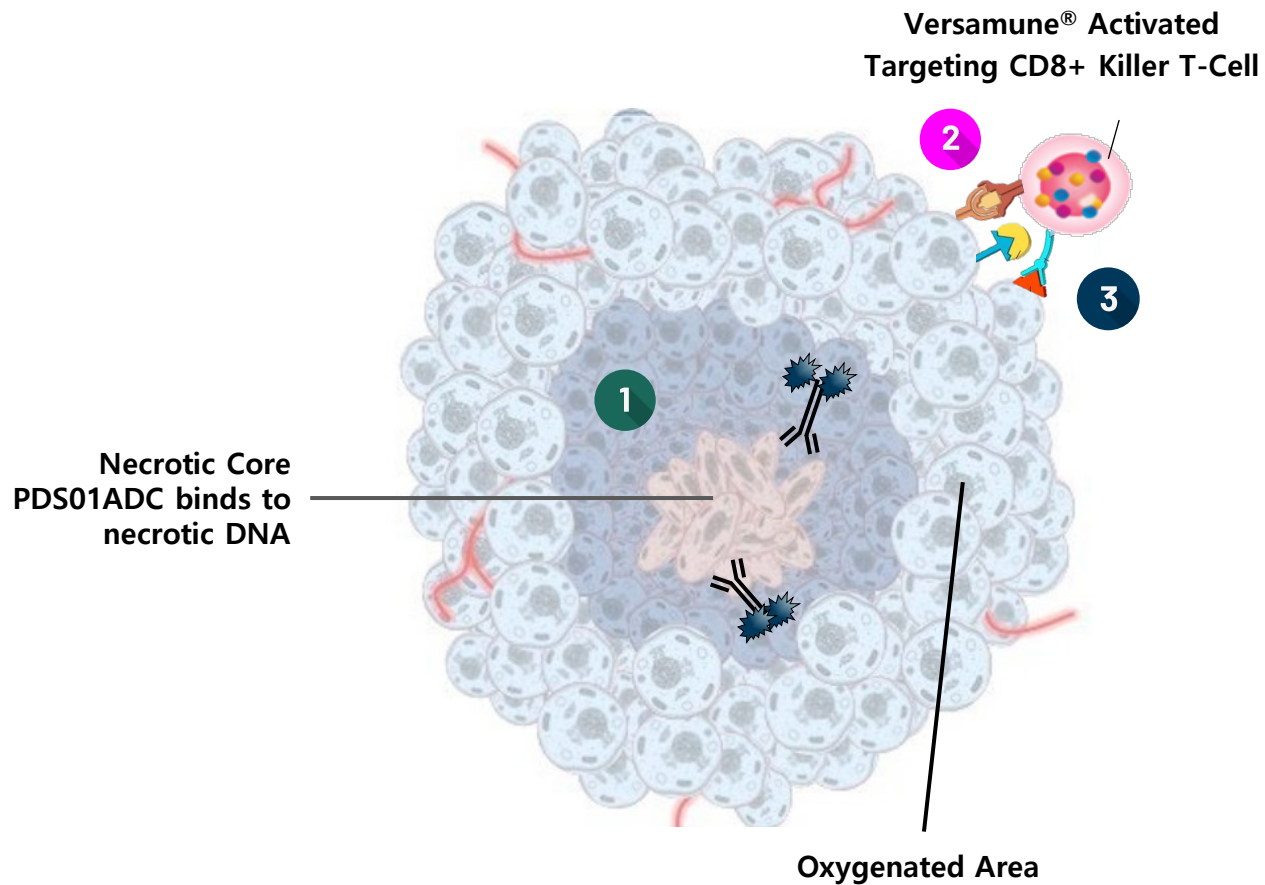
- ✓ Designed to deliver and sustain IL-12 in tumor
- ✓ Fused conjugate limits systemic presence and toxicity of IL-12 and also prevents free IL-12
- ✓ Activates/expands T cells in tumor & limits T cell exhaustion
- ✓ Changes tumor to become more permissive to T cell attack

VERSAMUNE®

- ✓ Designed to train T cells to recognize the cancer
- ✓ Activates the right type of multifunctional CD8 killer T cells
- ✓ Promotes the right quantity and potency of T cells
- ✓ Promotes a long-lasting memory T cell response

PDS01ADC + Versamune® + ICI: Unique Combined Mechanism

Mechanism Attacks the Tumor from Both the Inside (TME) and Outside



Inside

- 1 PDS01ADC**
Infiltrates TME; Weakens Tumor's Protection from Immune System

Stimulates T Cells in TME to Promote Expansion + Prolonged, Effective Killing

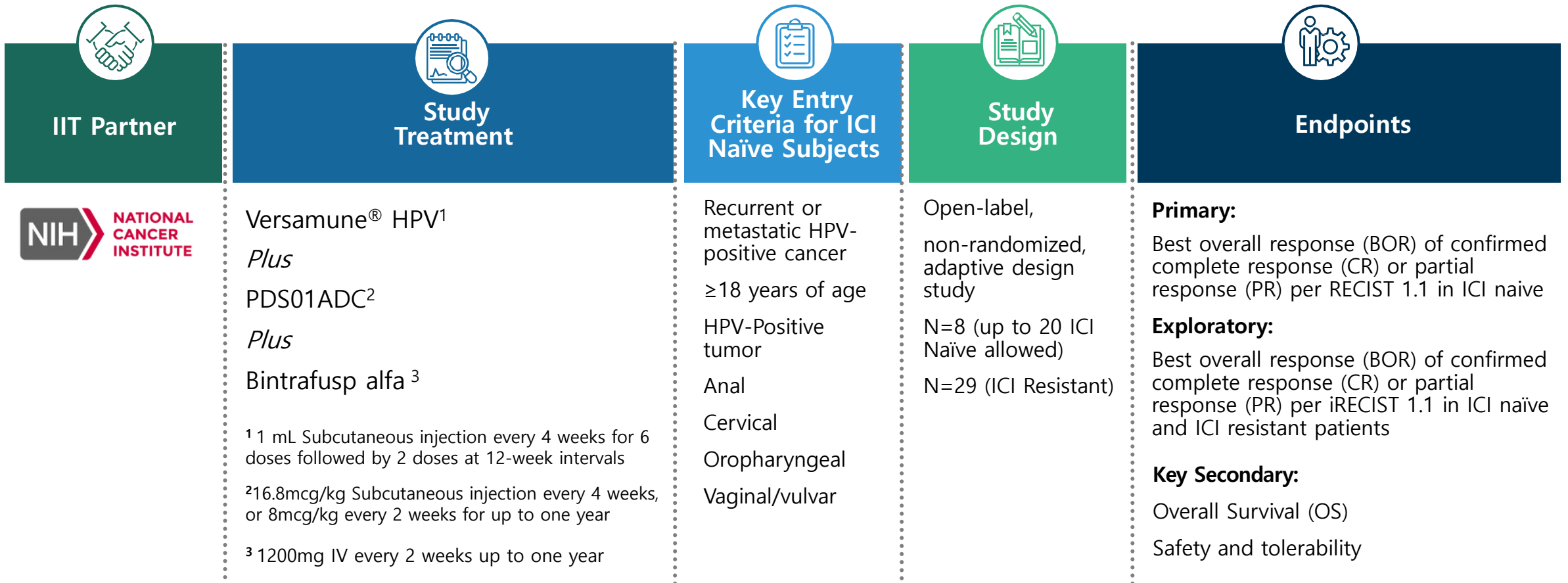
Outside

- 2 Versamune®**
Induces Right Type & Quantity of Potent Killer T Cells that Target and Infiltrate Tumor
- 3 Immune Checkpoint Inhibitor**
Restores Pre-existing T Cell Responses

Potential first tumor-targeting immuno-cytokine antibody drug conjugate

Triple Combination Investigator-Initiated Trial: Phase 2 Clinical Trial

Objective: To Assess the Triple Combination of Versamune® HPV plus PDS01ADC plus the Bi-functional Immune Checkpoint Inhibitor Bintrafusp alfa in Subjects with Recurrent or Metastatic HPV-positive Cancer



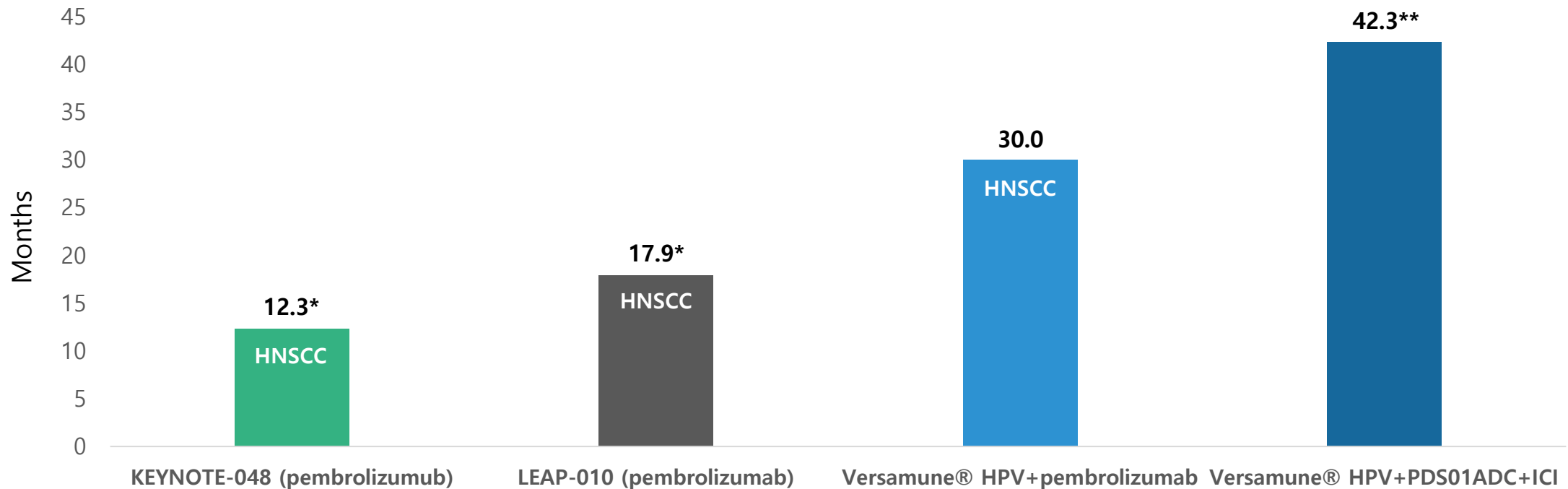
Triple Combination

Key Demographics and Treatment Exposure

Demographic	ITT Population (N=50)
Age, Median (Min, Max)	56.0 (28, 80)
Sex, n (%)	
Male	26 (52%)
Female	24 (48%)
Tumor Type, n (%)	
Anal	10 (20%)
Cervical	14 (28%)
Head and Neck	23 (46%)
Vaginal/Vulvar	3 (6%)
Prior Treatments, n (%)	
Chemotherapy	50 (100%)
Radiotherapy	45 (90%)
Immune Checkpoint Inhibitors	36 (72%)
HPV Status, n (%)	
HPV+	48 (96%)
HPV16+	37 (74%)
Other HPV+	11 (22%)
HPV-/Unknown Status	2 (4%)

First Line Recurrent/Metastatic HPV16+ HNSCC: *Versamune*[®] HPV and PDS01ADC Promoted Strong Survival Benefit

Survival of Patients with Recurrent/Metastatic HPV16+ Cancers



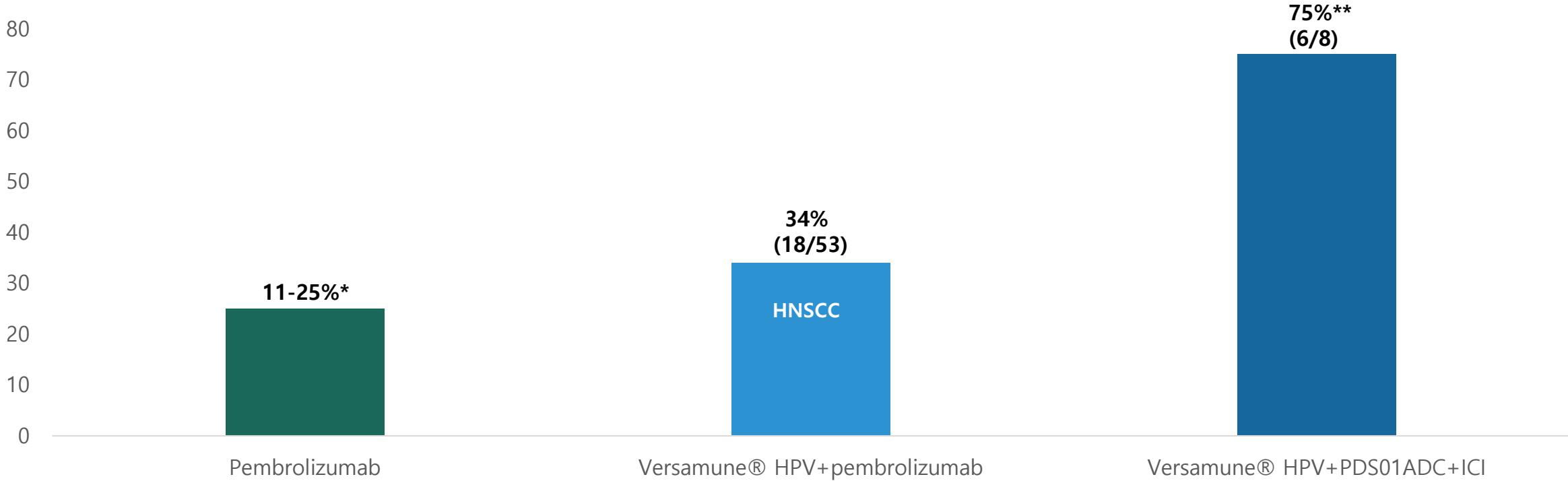
*Pembrolizumab reported median overall survival range in anal, cervical & vulvar cancers = 6-12 Months

**Includes anal, cervical, HNSCC, vulvar cancers

No controlled head-to-head trials have been performed between pembrolizumab and the Versamune[®] HPV combinations

First Line Recurrent/Metastatic HPV16+ Cancer: *Versamune*[®] HPV and PDS01ADC Promoted Objective Responses

Best Objective Response (BOR)



*Pembrolizumab reported ORR range in anal, cervical, HNSCC & vulvar cancers = 11-25%
**Includes anal, cervical, HNSCC, vulvar cancers; BOR assessment using iRECIST

No controlled head-to-head trials have been performed between KEYTRUDA[®] and the Versamune[®] HPV combinations

Phase 2 Triple Combination Results Indicate Favorable Tolerability

48% Had Grade 3 TRAEs, 4% Grade 4

Grade 3/4 Adverse Events (AE)

Preferred Term	n (%)
Myocarditis	1 (2)
Anemia	15 (30)
HLH*	1 (2)
Flu-like Symptoms	1 (2)
Lymphopenia	3 (6)
CPK Elevation	1 (2)

Grade 3/4 Adverse Events (cont.)

Preferred Term	n (%)
Leukopenia	1 (2)
Neutropenia	1 (2)**
Hematuria	5 (10)
GI Bleeding	2 (4)
AST/ALT Elevation	4 (8)***
Mucositis	1 (2)

*HLH, hemophagocytic lymphohistiocytosis

**Grade 4 TRAE

***1 patient had Grade 4 TRAE

Safety Population: All enrolled subjects who received at least 1 dose of any drug. National Cancer Institute. (2023). Combination Immunotherapy in Subjects With Advanced HPV Associated Malignancies. [Data set]

Triple Combination Conclusions

- **Triple Combination has successfully met its primary endpoint of at least a 60% confirmed objective response rate by RECIST v1.1**
 - BOR = 63% (RECIST v1.1)
 - BOR = 75% (iRECIST)
- **Versamune[®] HPV + PDS01ADC + ICI may significantly impact survival in first line and second line treatment of recurrent and/or metastatic HPV16 positive cancer**
 - Median OS of 42 months in first line exceeds the best publicly reported results to date
 - Median OS of 19-20 months in second line exceeds the best publicly reported results to date
- **Triple Combination appears to be well tolerated**
- **Immunological and clinical data suggests that PDS01ADC may be effective in targeting the tumor to overcome immune suppression**

Compelling Survival Data Supports Triple Combination Pivotal Study

Supported by strong results in difficult-to-treat resistant patients with Triple Study

FIRST LINE R/M

VERSATILE-002

(NCT04260126)

HPV16+ HNSCC

Versamune® HPV + pembrolizumab

N=53

mOS = 30 months

NCI Triple Study*

(NCT04287868)

Advanced HPV16+ Cancers

Versamune® HPV + PDS01ADC + ICI

N=8

mOS = 42 months

SECOND LINE R/M

NCI Triple Study**

(NCT04287868)

Advanced HPV16+

Versamune® HPV + PDS01ADC + ICI

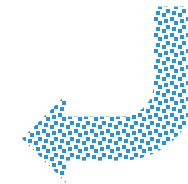
N=29

mOS = 19-20 months



FIRST LINE R/M HNSCC PIVOTAL STUDY

Versamune® HPV + PDS01ADC + pembrolizumab
Primary Endpoint mOS



Lead Program Supported and Validated by Robust Clinical Data

More Than 430 Patients Treated with PDS01ADC and/or Versamune® HPV

HNSCC

Patient Exposure Across Product Portfolio

PDS01ADC + Versamune® HPV + Bintrafusp alfa (triple) and Versamune® HPV + pembrolizumab (double) administered to 110+ head & neck cancer patients to date

PDS01ADC

300+ Patients Treated to Date

Acceptable tolerability and safety profile to date at 12.0 and 16.8 µg/kg every 2 or 4 weeks

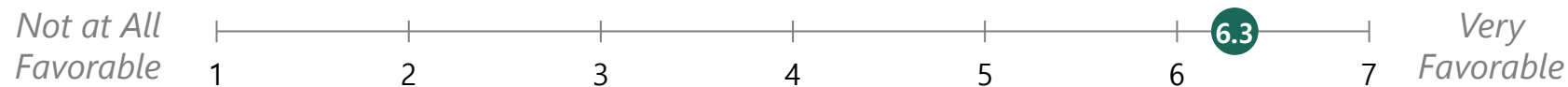
Versamune® HPV

170+ Patients Treated to Date

Versamune® well-tolerated to date at 3.0 and 10.0 mg per dose every 3 weeks

In Interviews, Oncologists Preferred use of Triple Combination in First Line Recurrent/ Metastatic HNSCC

On a scale of 1-7, the triple combination was rated 6.3 by oncologists for use in first line R/M HNSCC



Perceived Concerns

- **Limited Concerns in 1L Use:** Patients typically tolerate treatment better in earlier lines, oncologists were more optimistic about the triple therapy in the first line
 - An improved safety profile may further raise the overall favorability of the product



"No new concerns...the efficacy is so compelling that I would put up with this degree of toxicity; it is no problem"

– Medical Oncologist

Perceived Benefits

- **Preference as 1L Treatment:** It would allow patients to bypass chemo
- **New Standard of Care:** Oncologists were confident that it would likely become new standard of care given the strong responses versus existing treatments

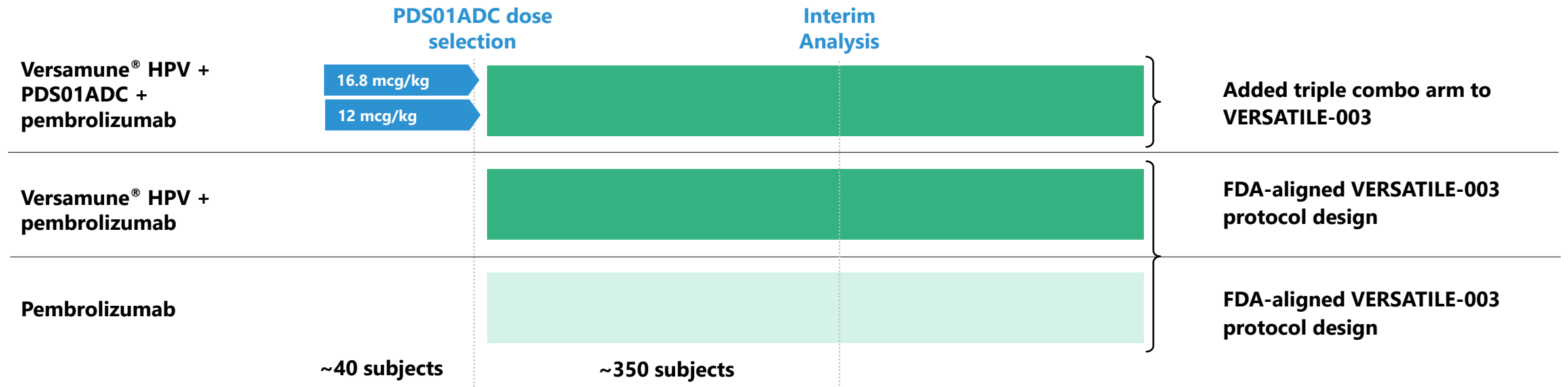


"This is the way to go; a chemo-free way to treat patients. I think they will like it and the response is great."

– Medical Oncologist

Study Design – First Line Recurrent/Metastatic (VERSATILE-003 Plus)

Median Overall Survival (OS) endpoint and Study Size Designed for Potential Success in both Treatment Arms*



Dose Optimization

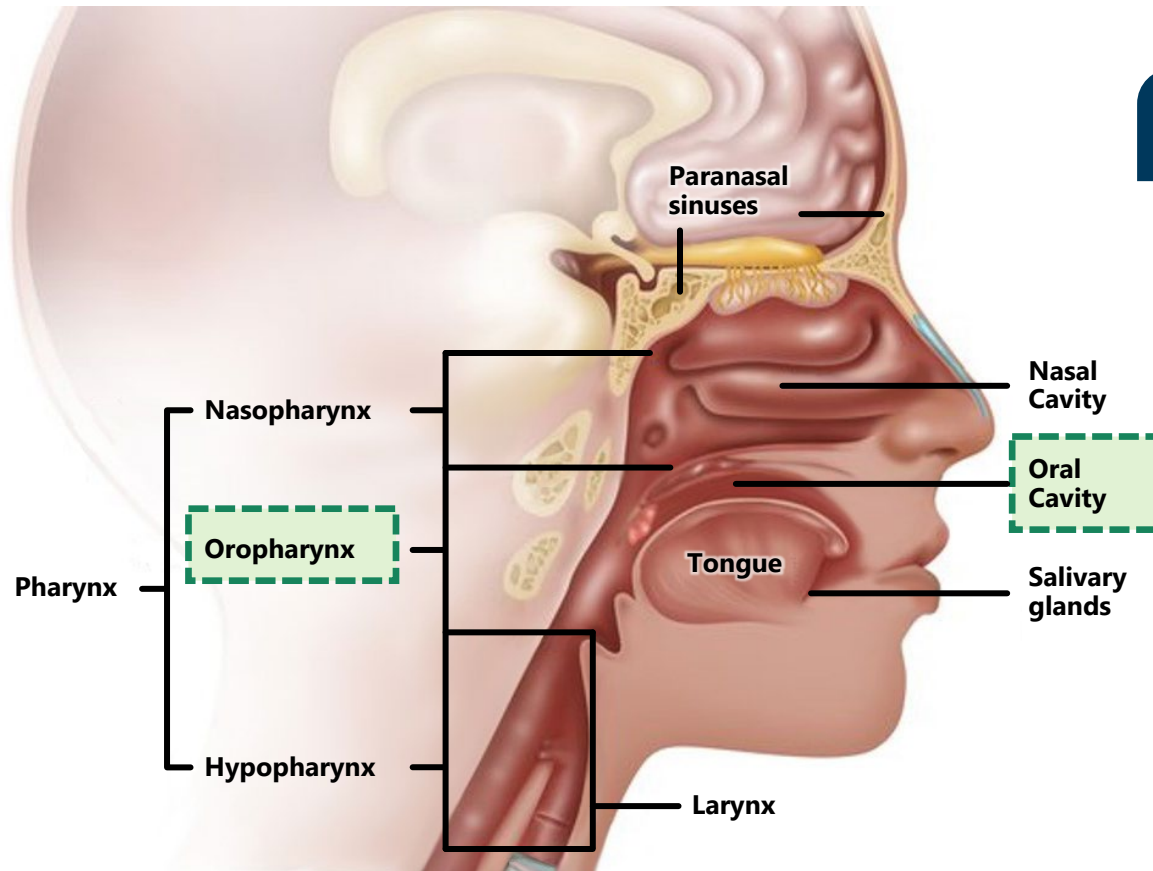
- 1:1 randomization
- Evaluate activity, safety, tolerability

Randomized controlled trial

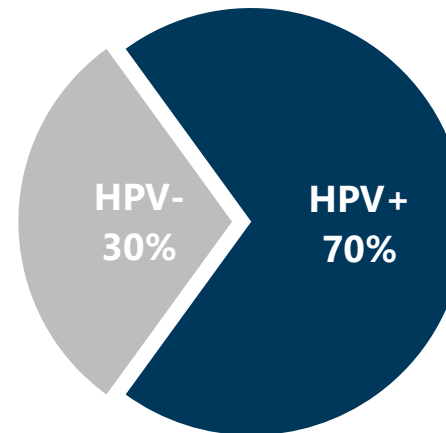
- 1:1:1 randomization
- OS primary endpoint

HNSCC: Devastating Cancers with High Prevalence and Mortality

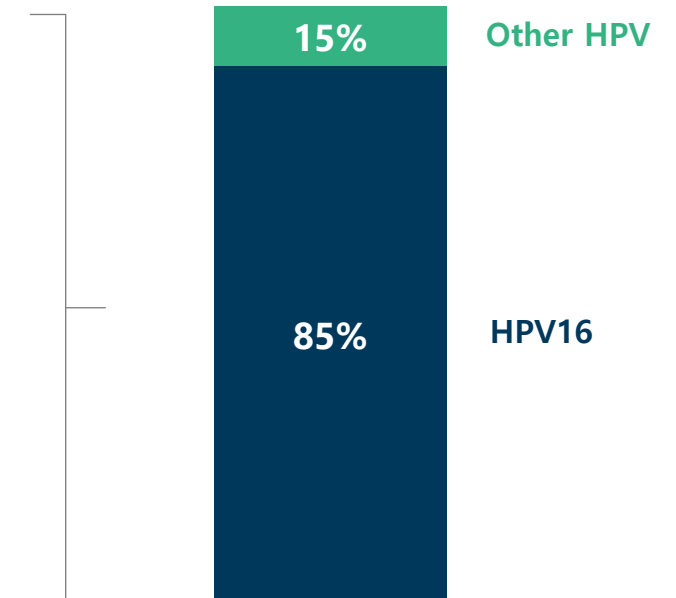
Increasing Incidence Driven Largely by HPV16+



Oral and Pharyngeal Cancers (~40% of HNSCC)



Genotype of HPV-Positive Oral and Pharyngeal Cancer

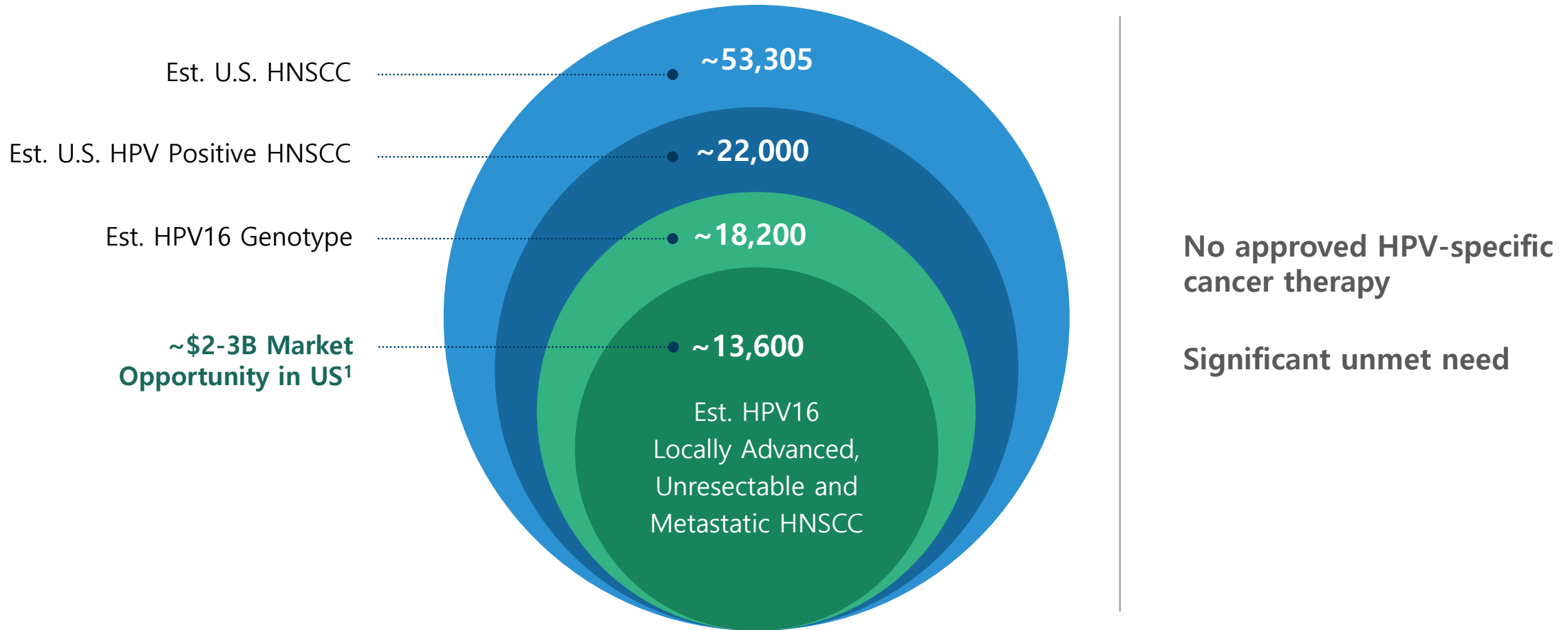


References: https://www.cdc.gov/cancer/hpv/basic_info/hpv_oropharyngeal.htm. Accessed January 30, 2024.




Lechner M. et al. *Nature*. 2022

HPV16-positive HNSCC Presents Significant Initial Market Opportunity

Epidemiology-Based Estimate of Addressable Population: HNSCC



Pipeline Continues to Validate Platforms, Drive Future Opportunities

	Candidate/ Study	Indication	PC	P1	P2	P3	Partner	
PDS01ADC + Versamune®	PDS01ADC + Versamune® HPV + ICI	Recurrent or metastatic HPV16-positive HNSCC	█					
	PDS01ADC + Versamune® MUC1 + ICI (Phase 1/2 anticipated 2024)	Recurrent or metastatic colorectal cancer	█					
Versamune®	Versamune® HPV + ICI (KEYTRUDA®)	Recurrent or metastatic HPV16-positive HNSCC	█					 MERCK
Versamune®	Versamune® HPV + Chemo (IMMUNOCERV)	1st-line treatment of locally advanced (IB3-IVA) cervical cancer	█					 THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Versamune®	Versamune® HPV +/- pembrolizumab	Neo-adjuvant treatment of locally advanced HPV-positive oropharyngeal cancer (OPSCC)	█					 MAYO CLINIC

Upcoming Milestones (2024)

Initiate pivotal study in HNSCC: PDS01ADC + Versamune® HPV + pembrolizumab Triple Combination – 2024
Update on regulatory confirmation of potentially registrational study - Q3-2024

File IND for Versamune® MUC1 Triple Combination Phase 1/2 study in r/m colorectal cancer – Q4-2024
Provide clinical update on IMMUNOCERV trial – Q4-2024

Veteran New Leadership to Execute Strategy

Record of Execution in Development, Commercialization of Leading Pharmaceutical Products



Frank Bedu-Addo, PhD
Chief Executive Officer

Senior executive experience with management of strategy and execution at large pharma and biotechs

Notable drug development:

Abelcet® (Liposome Company/ Elan)

PEG-Intron®
(Schering-Plough/ Merck)



Lars Boesgaard
Chief Financial Officer

20 years of financial leadership roles in healthcare

Former Chief Financial Officer of publicly traded healthcare and biotech companies



Kirk Shepard, M.D.
Chief Medical Officer

US board-certified medical oncologist and hematologist

30+ years of experience in the pharmaceutical industry



Gregory Conn, PhD
Chief Scientific Officer

Co-founder

35 years of drug development experience

In-depth experience with biotech drug discovery, product development and manufacturing



Stephan Toutain
Chief Operating Officer

30 years of experience in the life sciences industry from drug development, general management, operations, commercial development, market access and sales



Thank You

NASDAQ: PDSB

