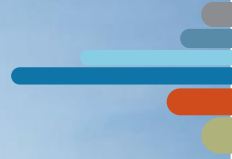




JP Morgan 2026



## Our Mission

To improve outcomes and lower the cost of healthcare for spine surgery and beyond.

## What We Do

Reduce patient reoperation for spine surgery with an integrated pre-operative, intra-operative and post-operative technology platform.<sup>1,2,3,4</sup>

## Business Profile

Rapidly scaling Medtech with high gross margins, early clinical validation, premium reimbursement, and strong customer traction.<sup>5</sup>



1. Sadrameli, et al. Intl. Journal of Spine Surgery. 18(S1)2024

2. Kent R, Ames C, Asghar J, et al. Radiographic Alignment in Deformity Patients Treated with Personalized Interbody Devices: Early Experience from the COMPASS Registry. Intl. Journal of Spine Surgery. 2024

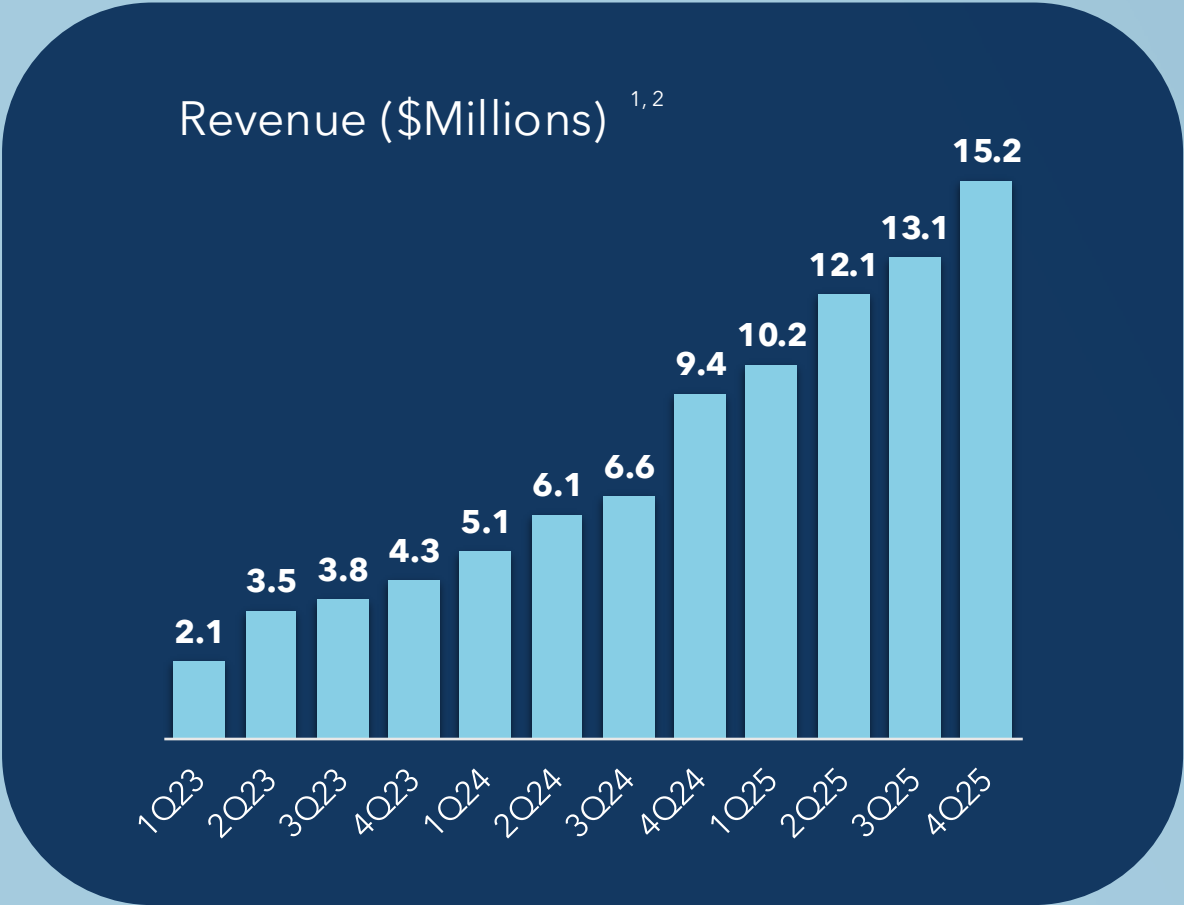
3. Smith JS, Yen CP, Kent R, Berven S, et al. Personalized Spine Surgery in Adult Deformity: Reoperation Rates and Mechanical Complications Following Customized Planning and Interbody Implant Use. Global Spine Journal. 2025;15(2):930-939. doi:10.1177/21925682251409696

4. Peer-reviewed data in Global Spine Journal. 74% reduction in revision rates over 2 years. n=115 patients observed.

5. Gross margins of 75%+: 2021 and 2022 financial statements are not audited under PCAOB standards; 2023 and 2024 financial statements are audited under PCAOB standards; For the nine months ended September 30, 2025, gross margin was 74.8% (unaudited) and full year 2025 gross margins will be reported in the Company's 2025 Annual Report on Form 10-K.

# Rapid Growth

HIGHLY CAPITAL EFFICIENT WITH PERSONALIZED IMPLANTS AND SINGLE-USE INSTRUMENTS



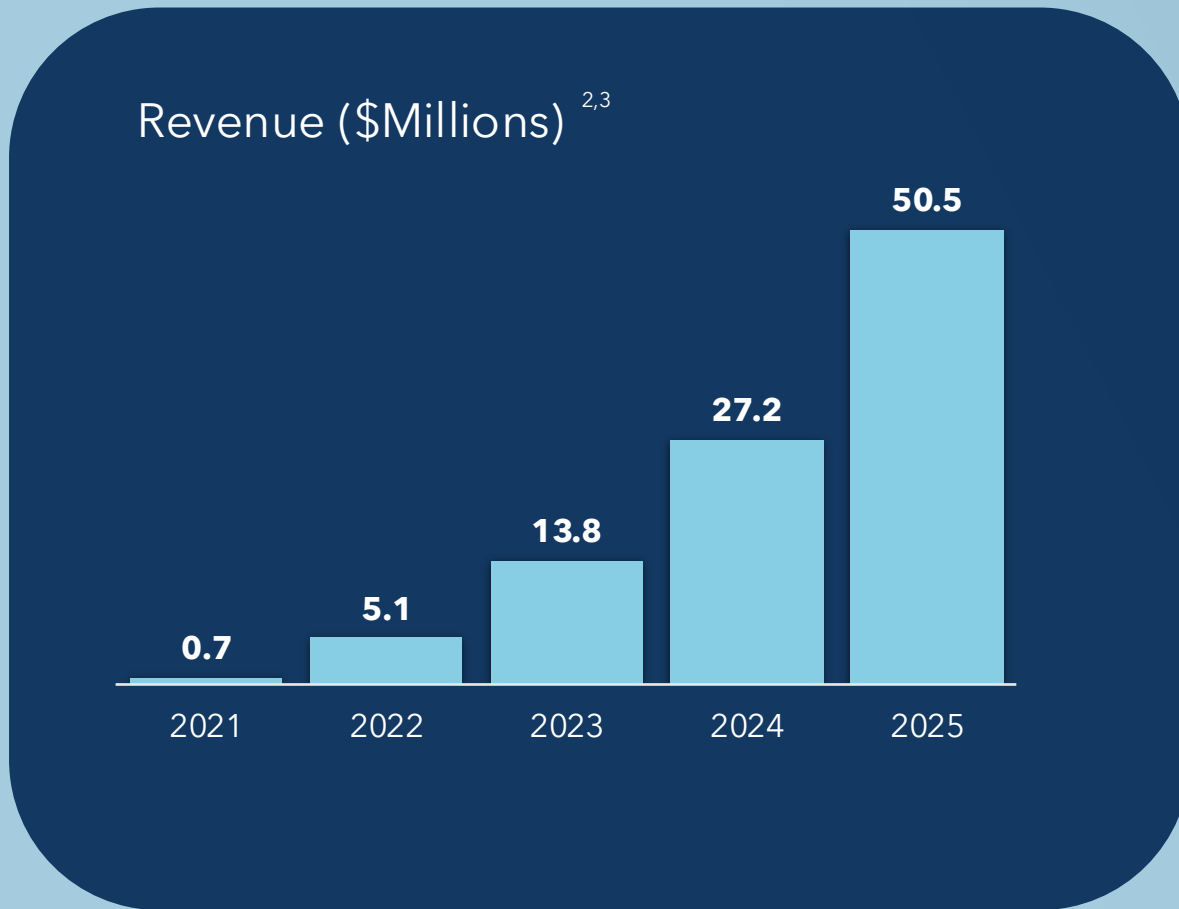
**\$15.2M**  
EST. Q4 '25 REVENUE<sup>2</sup>

**61%**  
EST. Q4 '25 YoY  
GROWTH<sup>2</sup>

1. Presented quarterly revenue is unaudited. Full year 2023 and 2024 revenue of \$13.8 million and \$27.2 million, respectively, is audited under PCAOB standards.

2. Preliminary and unaudited revenue results for Q4 '25 is an estimate only and is subject to revision until the Company reports its full financial results for 2025 in its Annual Report on Form 10K.

# 115% CAGR with 75%+ GM<sup>1</sup>



**\$50.5M**

FY '25  
EST. REVENUE<sup>3</sup>

**86%**

EST. FY '25 YoY  
GROWTH<sup>3</sup>

<sup>1</sup>Gross margins of 75%±: 2021 and 2022 financial statements are not audited under PCAOB standards; 2023 and 2024 financial statements are audited under PCAOB standards; For the nine months ended September 30, 2025, gross margin was 74.8% (unaudited) and full year 2025 gross margins will be reported in the Company's 2025 Annual Report on Form 10-K.

<sup>2</sup>Presented annual revenue for 2021 and 2022 is not audited under PCAOB standards. Presented annual 2023 and 2024 revenue is audited under PCAOB standards.

<sup>3</sup>Presented preliminary and unaudited revenue for 2025 that is an estimate only; subject to revision until the Company reports its audited financial results for 2025 in its Annual Report on Form 10-K.

# Strong Surgeon Adoption



253 **aprevo** surgeon users as of December 31, 2025

APPROXIMATELY 4,000 ACTIVE SPINE SURGEONS IN THE U.S.<sup>1</sup>



<sup>1</sup>. Moore et al. Workforce Trends in Spinal Surgery: Geographic Distribution and Primary Specialty Characteristics from 2012 to 2017. World Neurosurgery. 2021.



**DIRECT SALES TEAM**  
12 US SALES TERRITORIES



**MED ED & TRAINING**  
253 ACTIVE TRAINED USERS



**INDEPENDENT SALES AGENTS**  
100+ CONTRACTED AGENTS

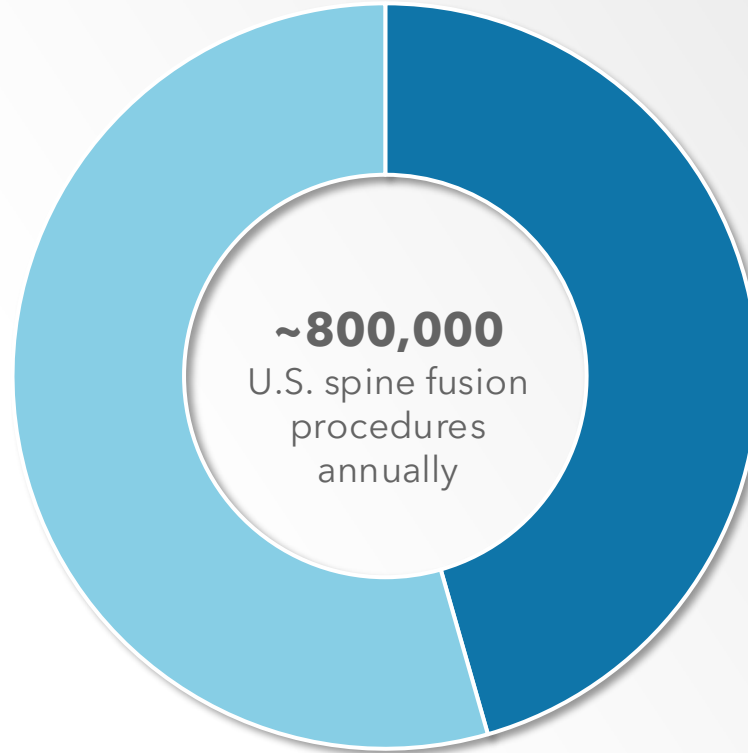
# Large Addressable U.S. Spine Fusion Market



## Lumbar

**~445,000** lumbar spine fusion procedures in the U.S. annually

**~\$13B** total addressable market for **aprevo lumbar**



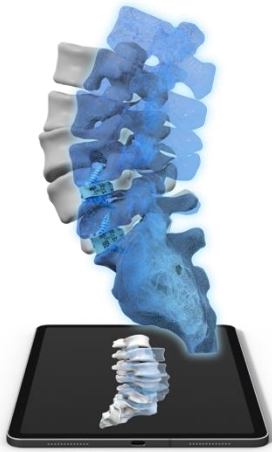
## Cervical

**~373,000** cervical fusion procedures in the U.S. annually

**~\$6B** total addressable market for **aprevo cervical**

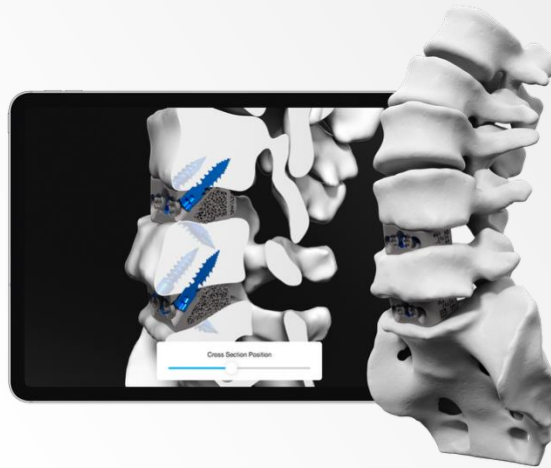
# aprevo<sup>®</sup> Technology Platform

POWERED BY THE **myaprevo<sup>®</sup>** Ecosystem



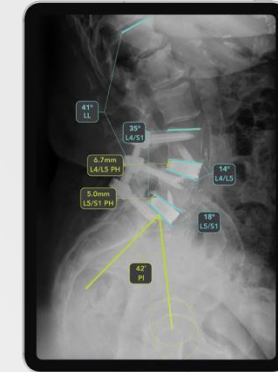
PRE-OP  
**aprevo<sup>®</sup>** digital planning

Advanced 3D Alignment  
Planning & Visualization



INTRA-OP  
**aprevo<sup>®</sup>** personalized devices

Personalized Anatomically  
Designed Devices



POST-OP  
**aprevo<sup>®</sup>** intelligence<sup>™</sup>

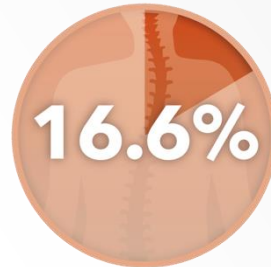
Postoperative Data Insights &  
Precision Analytics

# 74% Reduction in Revision Rates at 2-years vs. Stock Devices

PEER REVIEWED DATA IN *THE GLOBAL SPINE JOURNAL* OF 115 PATIENTS OBSERVED

## stock

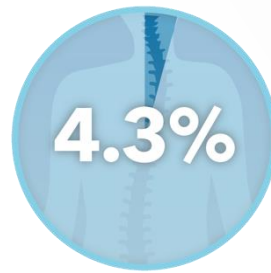
Revision rate with stock devices



2-year revision rate resulting from mechanical complications in ASD patients<sup>1</sup>

## aprevo®

Revision rate with aprevo® devices



2-year revision rate for aprevo® ASD patients<sup>1</sup>

Original Research

Global Spine Journal  
2025, Vol. 09(1) 1-15  
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DOI: 10.1177/193182251409696  
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### Personalized Spine Surgery in Adult Deformity: Reoperation Rates and Mechanical Complications Following Customized Planning and Interbody Implant Use

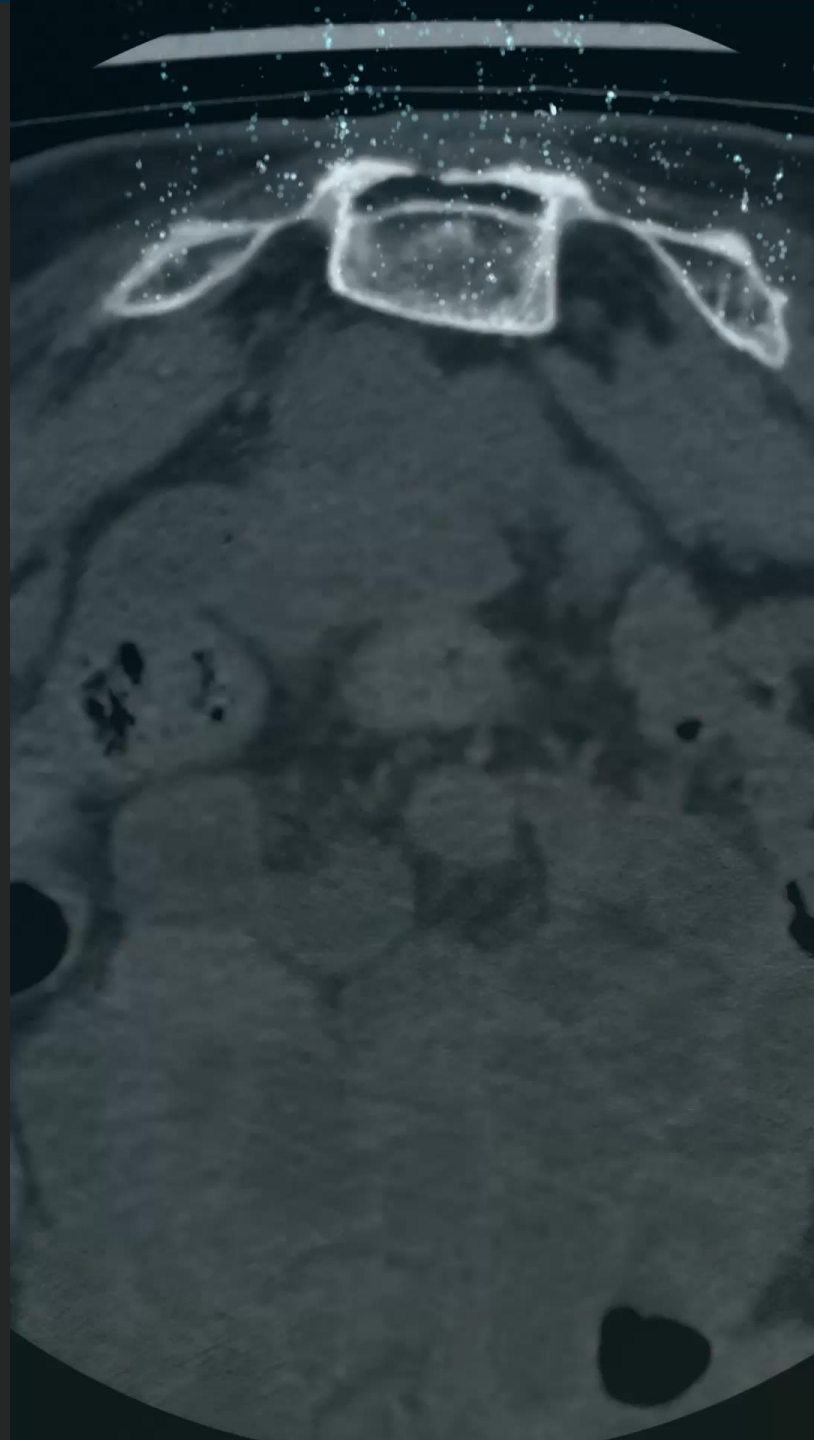
Justin S. Smith, MD, PhD<sup>1</sup>, Chun-Po Yen, MD<sup>1</sup>, Roland Kent, MD<sup>2</sup>, Sigurd Berven, MD<sup>3</sup>, Gregory M. Mundis Jr., MD<sup>4</sup>, Robert Robinson, MD<sup>5</sup>, Rodrigo J. Nicolau, MD<sup>6</sup>, Joseph A. Osorio, MD, PhD<sup>7</sup>, Jahangir Asghar, MD<sup>8</sup>, J. Rush Fisher, MD<sup>9</sup>, Kelli M. Howell, MS<sup>10</sup>, Mark Tantorski, MD<sup>11</sup>, Donald Blaskiewicz, MD<sup>12</sup>, Jeffrey P. Mullin, MD<sup>13</sup>, Joseph Gjolaj, MD<sup>14</sup>, John Small, MD<sup>15</sup>, and Christopher P. Ames, MD<sup>16</sup>

**Abstract**  
**Study Design:** Retrospective cohort study.  
**Objectives:** Prior studies have shown that adult spinal deformity (ASD) patients undergoing revision surgery due to mechanical complications had less radiographic improvement and worsening patient-reported outcomes scores. The combination of customized 3D planning and personalized implants has been shown to contribute to improved achievement of alignment goals. This study aimed to determine whether such improved correction also results in a correspondingly lower revision surgery rate due to mechanical complications.  
**Methods:** Pre- and postoperative radiographic alignment measures, including lumbar lordosis (LL), distal lumbar lordosis (DLL), pelvic incidence (PI) – LL mismatch, and L1 pelvic angle (L1PA), as well as data on mechanical complications leading to reoperation were collected on 115 ASD patients with personalized interbody implants and minimum 2-year follow-up. This

<sup>1</sup>Department of Neurosurgery, University of Virginia, Charlottesville, VA, USA  
<sup>2</sup>Department of Spine Surgery, Axis Spine Center, Coeur d'Alene, ID, USA  
<sup>3</sup>Department of Orthopaedic Surgery, University of California, San Francisco, San Francisco, CA, USA  
<sup>4</sup>Department of Orthopaedic Surgery, Scripps Clinic, San Diego, CA, USA  
<sup>5</sup>Alabama Neurological Surgery & Spine, Birmingham, AL, USA  
<sup>6</sup>Carlsmed, Carlsbad, CA, USA  
<sup>7</sup>Department of Neurological Surgery, University of California, San Diego, San Diego, CA, USA  
<sup>8</sup>Elite Spine Health and Wellness, Plantation, FL, USA  
<sup>9</sup>Department of Orthopaedic Surgery, Penn Medicine, Philadelphia, PA, USA  
<sup>10</sup>KH Consulting, San Diego, CA, USA  
<sup>11</sup>Premier Orthopaedics, West Chester, PA, USA  
<sup>12</sup>St. Luke's Bone Medical Center, Boise, ID, USA  
<sup>13</sup>Department of Neurosurgery, University at Buffalo, Buffalo, NY, USA  
<sup>14</sup>Department of Orthopaedic Surgery, University of Miami Hospital, Miami, FL, USA  
<sup>15</sup>Center for Spinal Disorders at Florida Orthopaedic Institute, Temple Terrace, FL, USA  
<sup>16</sup>Department of Neurological Surgery, University of California, San Francisco, San Francisco, CA, USA

**Corresponding Author:**  
Justin S. Smith, MD, PhD, Department of Neurosurgery, University of Virginia Health Sciences Center, 415 Ray C. Hunt Dr. Floor 3, Charlottesville, VA 22903, USA.  
Email: js7j@virginia.edu

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# Premium MS-DRG Hospital Reimbursement

aprevo® lumbar PROCEDURES HAVE INCREMENTAL HOSPITAL REIMBURSEMENT COMPARED TO STOCK



MS-DRG	Description	Incremental MS-DRG Reimbursement*
426	Multiple level combined anterior and posterior spinal fusion except cervical with MCC or custom-made anatomically designed interbody fusion device	Δ \$39,289
447	Multiple level spinal fusion except cervical with MCC or custom-made anatomically designed interbody fusion device	Δ \$27,671
450	Single level spinal fusion except cervical with MCC or custom-made anatomically designed interbody fusion device	Δ \$15,275

The aprevo® procedure is currently covered by Medicare, Medicare Advantage, and Commercial Payors.

# Challenges in Cervical Fusion Today

HIGH VARIABILITY IN OUTCOMES ACROSS ACDF PROCEDURES, PARTICULARLY IN PATIENTS WITH POOR BONE QUALITY, LONG-CONSTRUCT FUSIONS, AND CERVICAL DEFORMITY.

## POOR BONE QUALITY

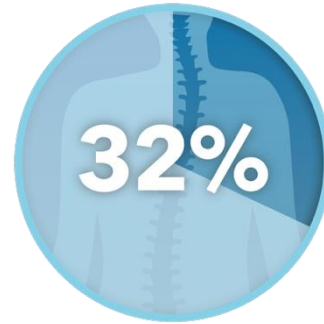


**ACDF patients have high rates of osteopenia/osteoporosis<sup>1</sup>**



5x higher risk of pseudarthrosis<sup>2</sup> and >4x greater rates of revision for adjacent segment disease<sup>3</sup>

## MALALIGNMENT

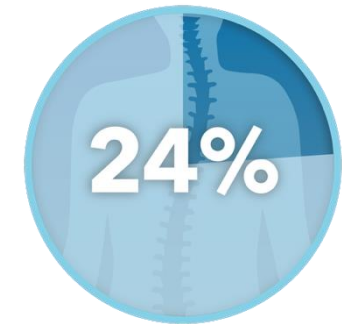


**32.2% of cervical deformity cases exceeded 20° from target T1S-CL<sup>4</sup>**



No difference in segmental sagittal alignment between stock parallel and lordotic graphs<sup>5</sup>

## LONG-CONSTRUCT REVISION



**1 in 3 ACDF patients receive 3-4 level fusions**



~46% pseudarthrosis and ~24% revision within 2 years<sup>6</sup>

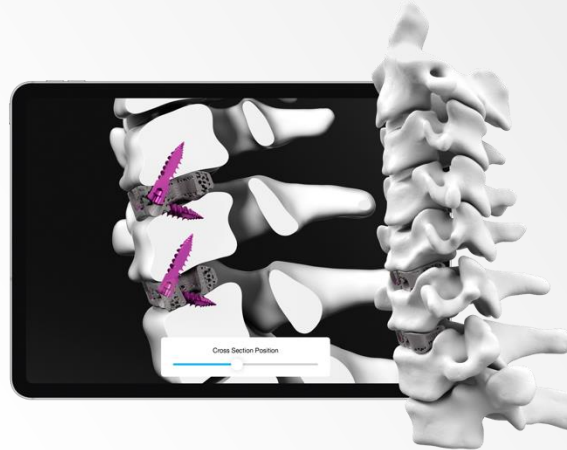
# aprevo<sup>®</sup> Technology Platform

POWERED BY THE **myaprevo<sup>®</sup>** Ecosystem



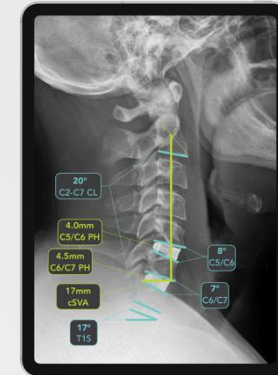
PRE-OP  
**aprevo<sup>®</sup>** digital planning

Advanced 3D Alignment  
Planning & Visualization



INTRA-OP  
**aprevo<sup>®</sup>** personalized devices

Personalized Anatomically  
Designed Devices



POST-OP  
**aprevo<sup>®</sup>** intelligence<sup>™</sup>

Postoperative Data Insights &  
Precision Analytics

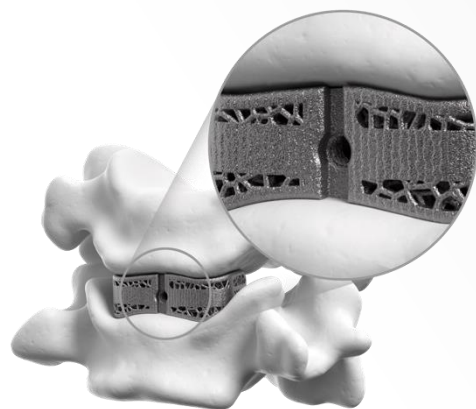
# aprevo<sup>®</sup> cervical Clinical Data



## Stock Device

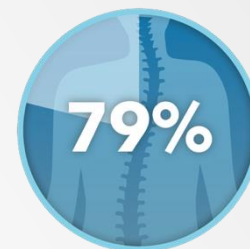


## aprevo<sup>®</sup> cervical

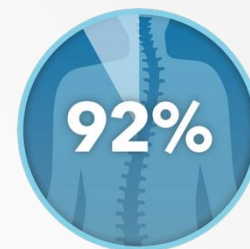


Endplate-matching implant geometry is designed to optimize load distribution<sup>1,2</sup> and preserve bone to mitigate subsidence risk, maintain segmental alignment, and enhance fusion.

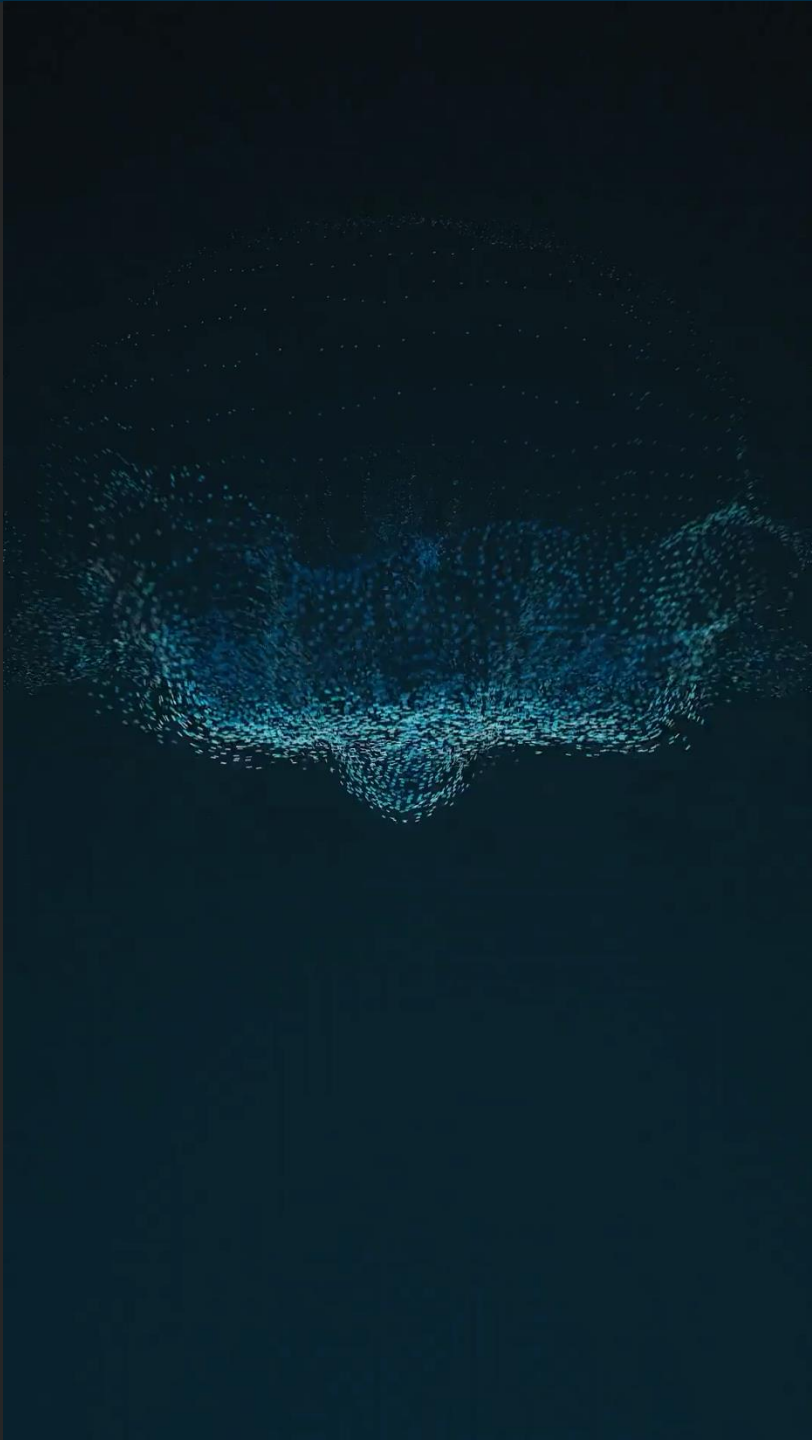
## Initial data demonstrates predictable 3D Intervertebral Alignment



of personalized aprevo<sup>®</sup> interbody levels achieved targeted sagittal alignment within 3°.<sup>3</sup>



of personalized aprevo<sup>®</sup> interbody levels achieved targeted coronal alignment within 3°.<sup>3</sup>



# NTAP Provides Up to \$21,125 Incremental Hospital Payment

aprevo<sup>®</sup> cervical PROCEDURES ARE ELIGIBLE FOR NTAP

## ICD-10-PCS Codes for aprevo<sup>®</sup> Cervical Custom-Made Anatomically Designed Interbody Fusion Devices (CMADIFD)

ICD-10-PCS	Description
<b>XRG10RB</b>	Fusion of cervical vertebral joint using CMADIFD, open approach, new technology group 11
<b>XRG13RB</b>	Fusion of cervical vertebral joint using CMADIFD, percutaneous approach, new technology group 11
<b>XRG14RB</b>	Fusion of cervical vertebral joint using CMADIFD, percutaneous endoscopic approach, new technology group 11
<b>XRG20RB</b>	Fusion of 2 or more cervical vertebral joints using CMADIFD, open approach, new technology group 11
<b>XRG23RB</b>	Fusion of 2 or more cervical vertebral joints using CMADIFD, percutaneous approach, new technology group 11
<b>XRG24RB</b>	Fusion of 2 or more cervical vertebral joints using CMADIFD, percutaneous endoscopic approach, new technology group 11
<b>XRG40RB</b>	Fusion of cervicothoracic vertebral joint using CMADIFD, open approach, new technology group 11
<b>XRG43RB</b>	Fusion of cervicothoracic vertebral joint using CMADIFD, percutaneous approach, new technology group 11
<b>XRG44RB</b>	Fusion of cervicothoracic vertebral joint using CMADIFD, percutaneous endoscopic approach, new technology group 11

## Applicable Cervical MS-DRGs May Include:

MS-DRG	Description	National Average MS-DRG Payment*
<b>429</b>	Combined Anterior and Posterior Cervical Spinal Fusion with MCC	<b>\$65,561</b>
<b>430</b>	Combined Anterior and Posterior Cervical Spinal Fusion without MCC	<b>\$41,966</b>
<b>471</b>	Cervical Spinal Fusion with MCC	<b>\$35,137</b>
<b>472</b>	Cervical Spinal Fusion with CC	<b>\$21,438</b>
<b>473</b>	Cervical Spinal Fusion without CC/MCC	<b>\$17,765</b>

## FDA Designated Breakthrough Technology with New Technology Add-on Payment (NTAP)



Up to \$21,125 incremental CMS reimbursement to hospitals for qualifying inpatient aprevo<sup>®</sup> procedures mapping to these MS-DRG's



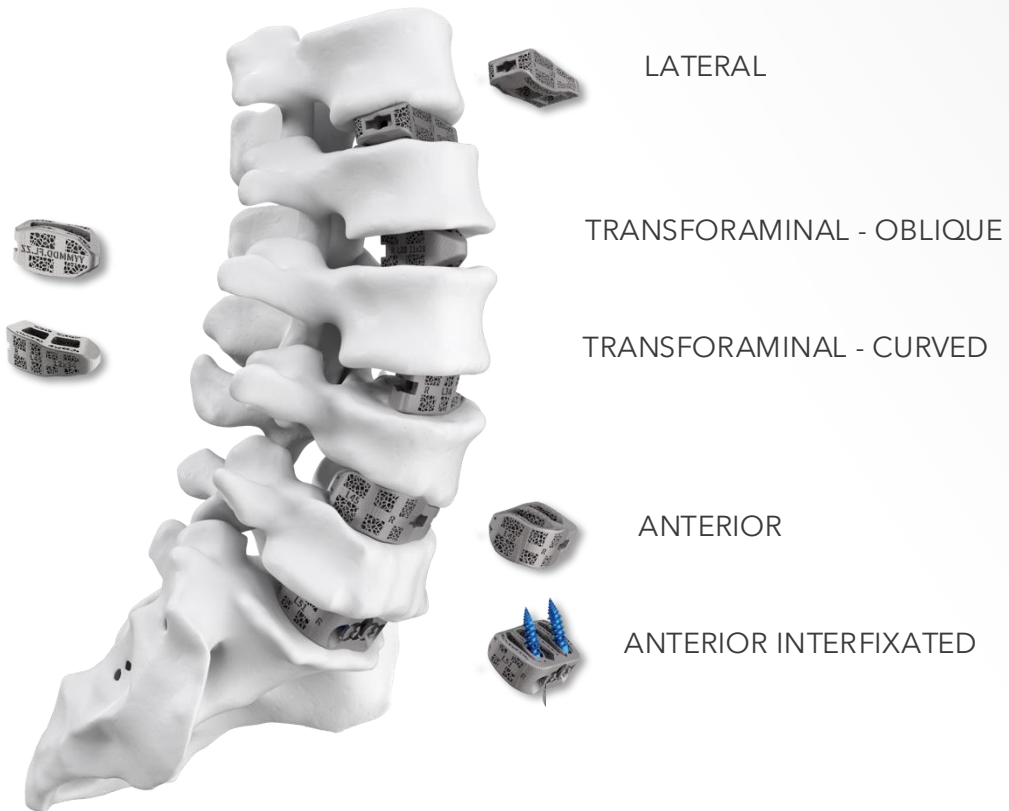
The aprevo<sup>®</sup> procedure is currently covered by Medicare, Medicare Advantage, and Commercial Payors

# Carlsmed's Comprehensive Personalized Spine Surgery Offerings

aprevo® CAN ADDRESS ALL SPINE FUSION PROCEDURES



## aprevo lumbar



## aprevo cervical



# aprevo® Personalized Surgery Enabled by AI-Driven Planning & Analytics



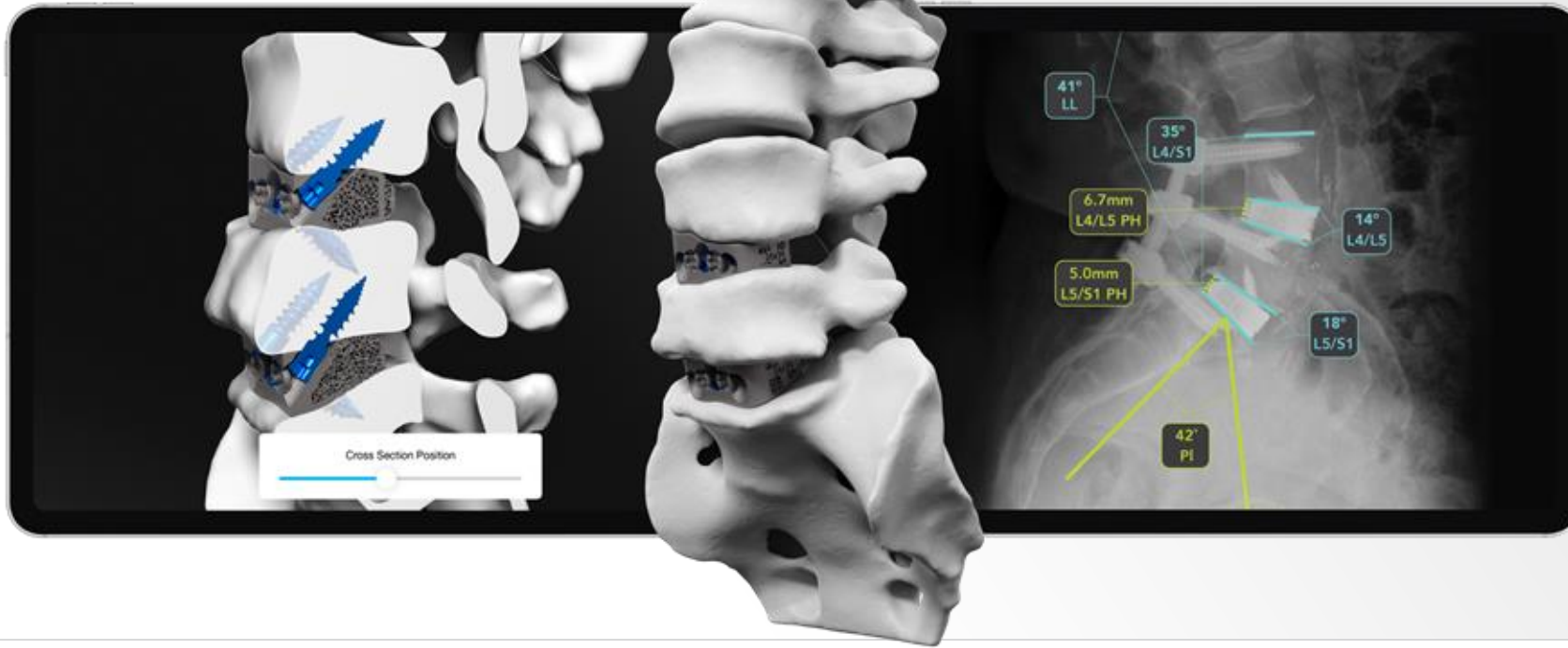
aprevo® digital planning

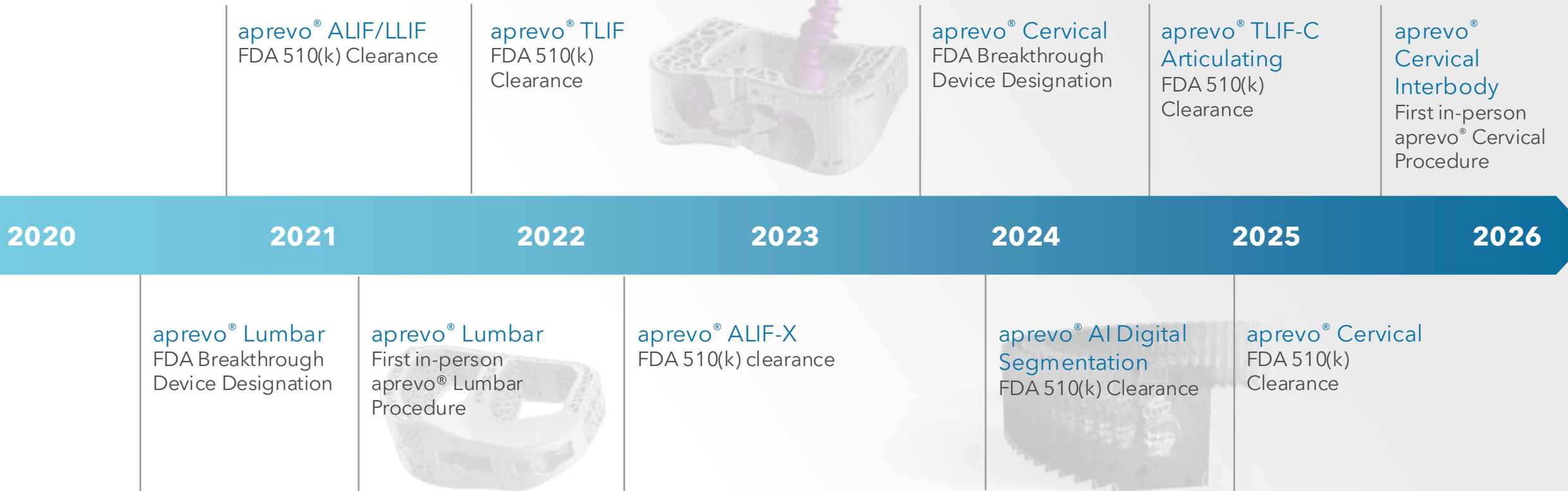


aprevo® intelligence™

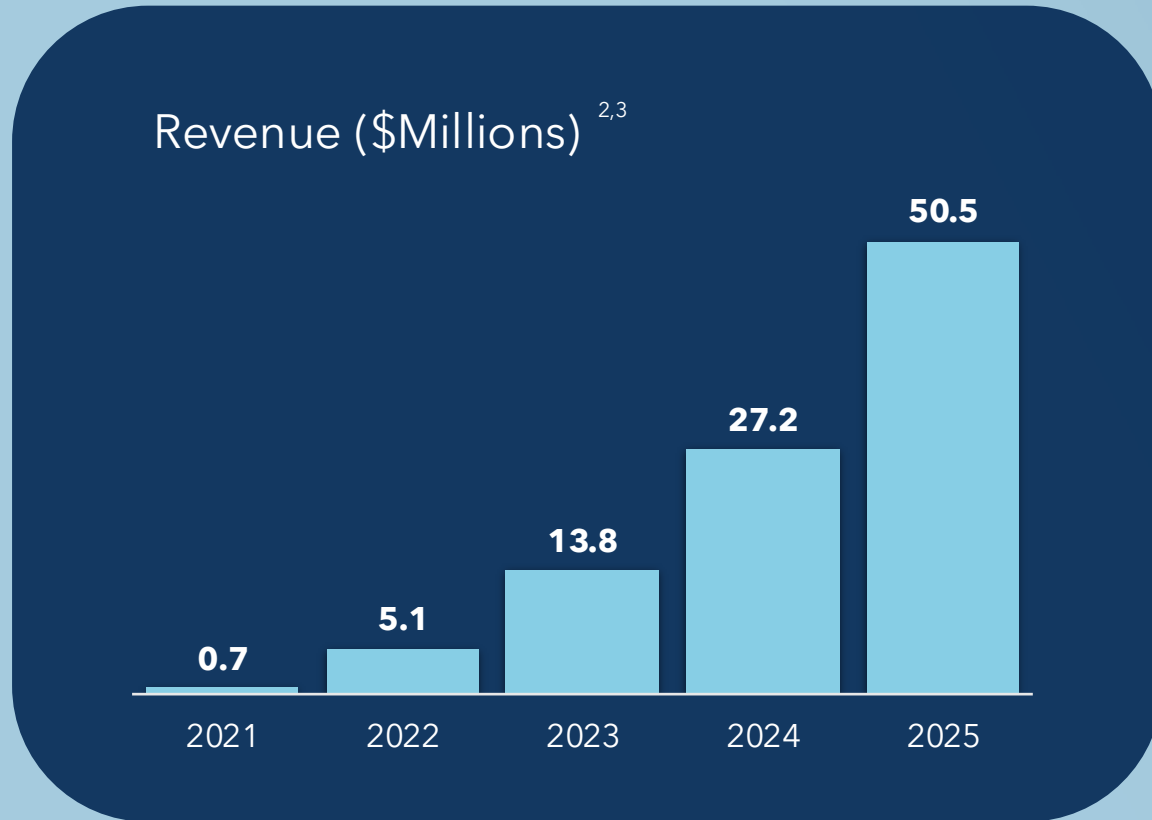
Procedures Enabled  
with AI Segmentation

Post-Op XRs Analyzed  
by AI Technologies





# 115% CAGR with 75%+ GM<sup>1</sup>



**\$50.5M**

EST. FY '25  
REVENUE<sup>3</sup>

**86%**

EST. FY '25 YoY  
GROWTH<sup>2,3</sup>

**RAPIDLY SCALING MEDTECH WITH HIGH GROSS MARGINS, PREMIUM REIMBURSEMENT, AND STRONG CUSTOMER TRACTION.<sup>1</sup>**



# Forward Looking Statements



Any statements in this presentation about future expectations, plans and prospects, including statements about Carlsmed's ability to advance its personalized spine surgery platform to transform patient outcomes and drive long-term growth, Carlsmed's estimates regarding total addressable market, the potential of Carlsmed's products, Carlsmed's preliminary results for the fourth quarter and full year 2025 revenue, Carlsmed's ability to successfully develop and commercialize future products and other statements containing the words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "likely," "will," "would," "could," "should," "continue," and similar expressions, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including such important factors as are set forth under the caption "Risk Factors" in Carlsmed's Registration Statement on Form S-1 on file with the U.S. Securities and Exchange Commission. The forward-looking statements included in this presentation represent Carlsmed's views as of the date of this presentation. Carlsmed anticipates that subsequent events and developments will cause its views to change. However, while Carlsmed may elect to update these forward-looking statements at some point in the future, it specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Carlsmed's views as of any date subsequent to the date of this presentation.

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