



Software Platform, Services & Personalized Implants
Powered by AI
For Radically Improved Spinal Care

**COWEN 39th HEALTH
CARE CONFERENCE**

March 12, 2019

SAFE HARBOR

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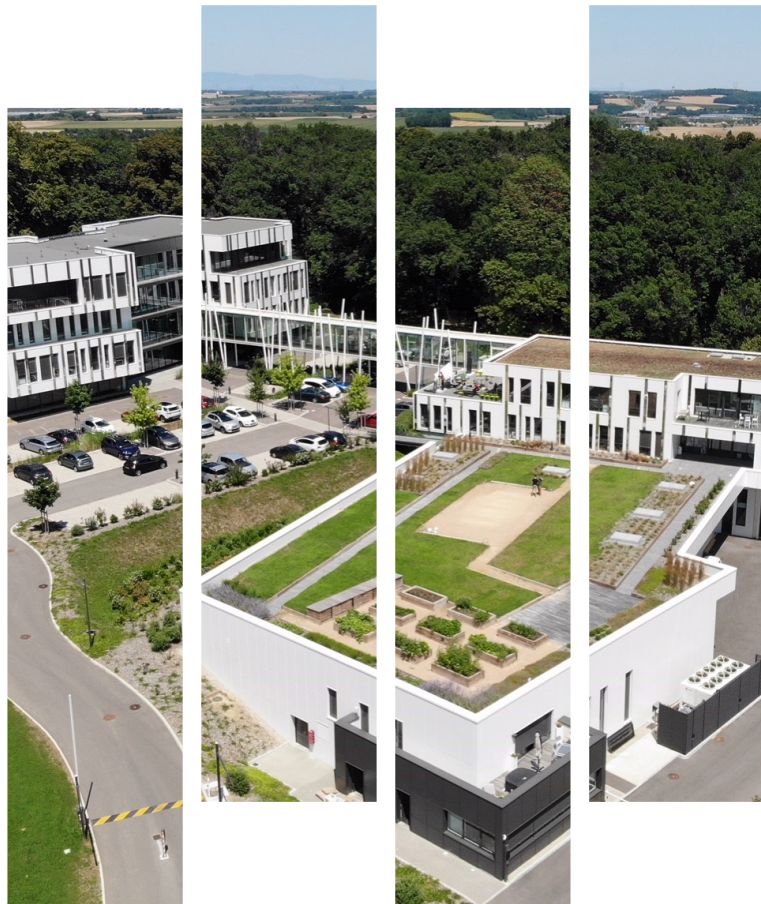
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KEY FACTS



UNiD ASI

- Innovative software-driven service-oriented approach to complex spine
- 3,500+ UNiD ASI cases performed WW since launch



FIRST TO MARKET

- First-to-market patient-specific implants for the spine (2013)
- FDA clearance (2014) & US launch of UNiD® rods (2015)
- UNiD HUB software platform (2017)
- 3D-printed patient-specific cages FDA cleared (2018)



FULLY INTEGRATED

- Headquarters and manufacturing facilities in Lyon, France
- 210 employees worldwide including 40 in the USA



FINANCIAL PERFORMANCE

- 2018 revenue : \$37.1m (+19% vs 2017), with \$18.5m from US market
- 2018 US UNiD cases growth: +70% (+94% in Q4 18)
- EBITDA >0 & Gross Margin in the 75 to 80% range
- \$12 M cash on hand at 12/2018
- Publicly traded in FR on Euronext - ALMED (June 2006) and OTCQX (Aug 2018) - MRNTF

U.S. MARKET OPPORTUNITY

ANNUAL COMPLEX SPINE MARKET (3+ LEVELS)^{1,2}

116,000

ANNUAL COMPLEX SPINE CASES¹

\$3.48 B

\$30,000

AVG REVENUE PER COMPLEX CASE

ANNUAL DEGEN MARKET (1-2 LEVELS)^{1,3}

304,000

ANNUAL DEGEN CASES¹

\$3.40 B

\$11,200

AVG REVENUE PER DEGEN CASE

\$6.88 BILLION

UNID TEK
U.S. MARKET
OPPORTUNITY



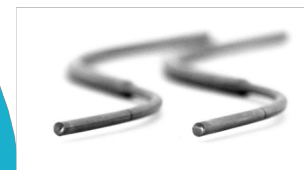
PATIENT SPECIFIC ROD

Thoracolumbar Fixation
35%



PATIENT-SPECIFIC UNID 3D INTERBODY DEVICE & VERTEBRAL BODY REPLACEMENT

Interbody Devices
16%



PATIENT-SPECIFIC DUAL-DIAMETER ROD

Cervical Fixation
15%

Bone Graft Extenders
17%

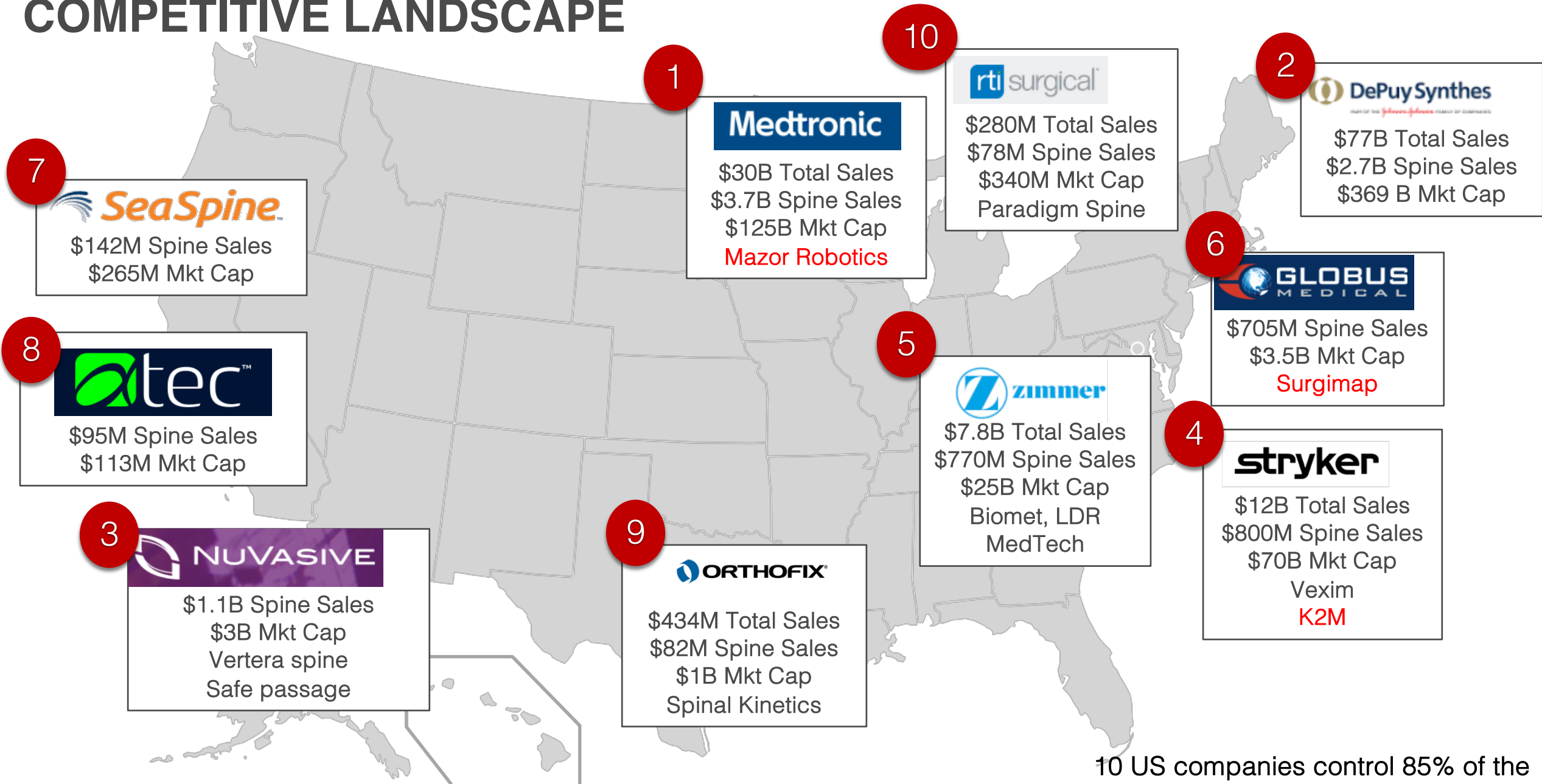
Non Fusion 4%
Spinal Electrical Stimulation 3%

Vertebral Compression Fracture 10%



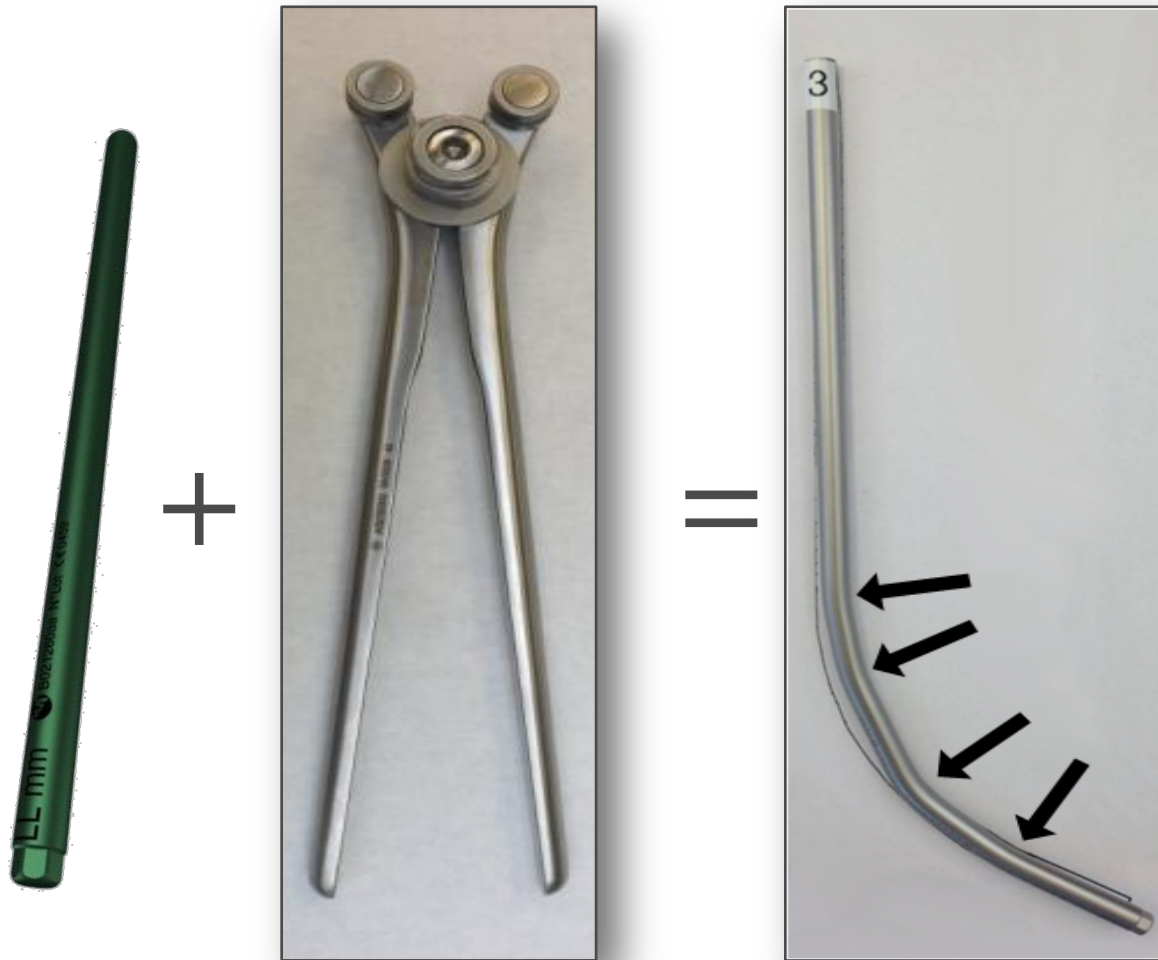
1. 2015 Instrumented Thoracolumbar Procedures annually (409,100). 2013 Millennium Research Group, Inc., Table 87 "Thoracolumbar Fusions, by Indication."
2. \$30,000 per case. Medtronic estimated implant and BGE revenues per complex spine procedure.
3. \$11,200 per case. Medtronic estimated implant and BGE revenues per 1-2 level degen procedure. .

COMPETITIVE LANDSCAPE

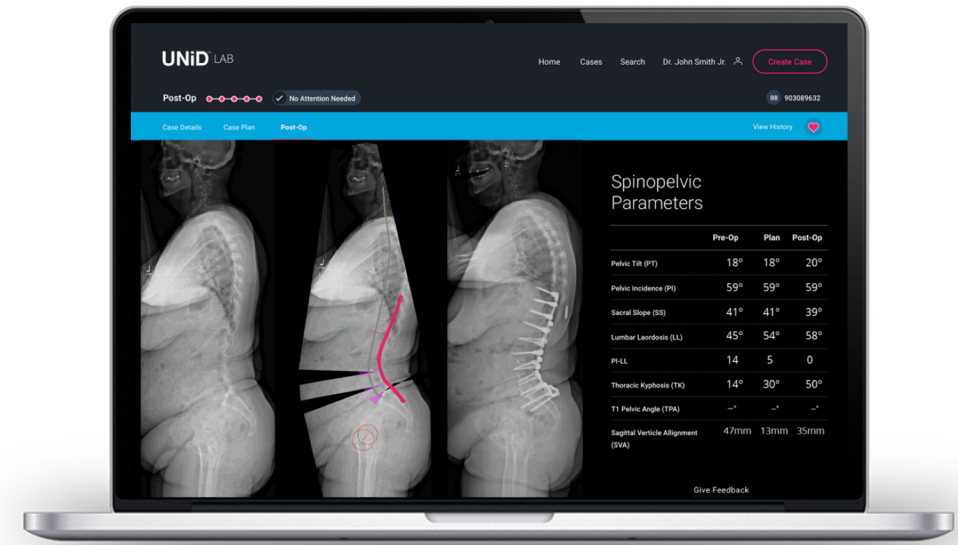


10 US companies control 85% of the worldwide market

Traditionnal vs. AI powered Spine surgery



VS

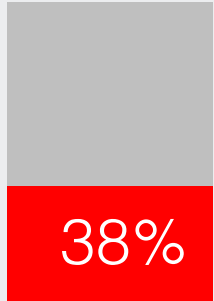


UNiD™

Computer assisted Industrially bent
+
Aligned to case plan

Sagittal Alignment & UNiD ASI Evidence: 3,500+ cases

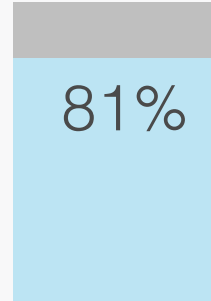
Clinical Issue



Sagittal re-alignment and clinical outcomes are directly linked.¹

Only 38% of historical ASD patients are sagittally aligned after surgery.²

UNiD ASI Evidence



Over 81% of UNiD patients achieved normative Sagittal Vertical Alignment⁵

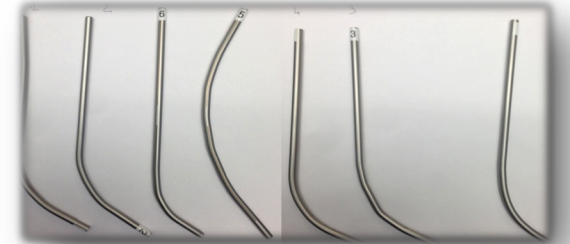


10X greater risk of developing adjacent segment disease when post-operative Δ PI-LL $\geq 10^\circ$ for 1 to 3 level degenerative constructs.⁴

PI-LL $< 10^\circ$

Achieved in 100% UNiD cases
All UNiD patients had post-operative PI-LL of less than 10° ⁵

Planning execution



Aligned to case plan

1. Glassman SD, Bridwell K, Dimar JR, Horton W, Berven S and Schwab F, The Impact of Positive Sagittal Balance in Adult Spinal Deformity. Spine. 2005.
2. Moal B, Schwab F, Ames CP, et al. Radiographic Outcomes of Adult Spinal Deformity Correction: A Critical Analysis of Variability and Failures Across Deformity Patterns. Spine Deform. 2014.
3. Jang J-S, Lee S-H, Min J-H, Kim SK, Han K-M, Maeng DH. Surgical treatment of failed back surgery syndrome due to sagittal imbalance. Spine (Phila. Pa. 1976). 2007.
4. Rothenfluh DA, Mueller DA, et al. Pelvic incidence-lumbar lordosis mismatch predisposes to adjacent segment disease after lumbar spinal fusion. Eur Spine J (2015) 24:1251-1258
5. Cameron Barton BA, Andriy Noshchenko PhD, Vikas Patel MD, Christopher Kleck MD, Evalina Burger MD. Early Experience and Initial Outcomes with Patient Specific Spine Rods for Adult Spinal Deformity (ASD). Orthopedics. 2016; 39(2):79-86.
6. Solla F, Barrey CY, Burger E, Kleck CJ, Fiere V, Patient-Specific Rods for surgical correction of Sagittal Imbalance in Adults, Clinical Spine Surgery, 2018

Fracture rate reduction & UNiD ASI Evidence: 3,500+ cases

Significant Reduction in Adult Deformity Cases

14.9%

HISTORIC ROD FRACTURE RATE FROM ISSG DATA⁶

2.3%

US UNiD™ PATIENT-SPECIFIC ROD FRACTURE RATE WITH 2-YEAR FOLLOW UP⁷

Significant Reduction in Adult Deformity Cases involving a PSO

22%

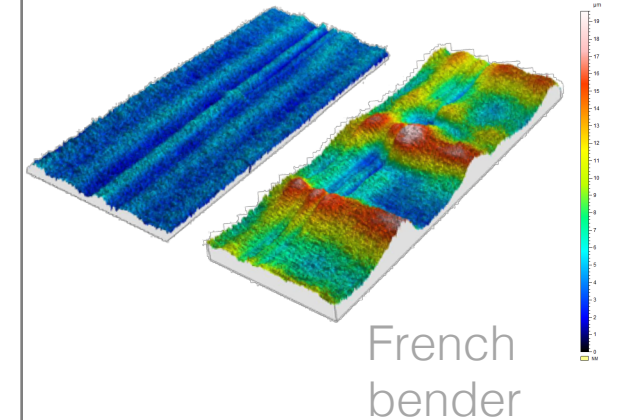
HISTORIC ROD FRACTURE RATE WITH PSO⁶

4.6%

2-YEAR FOLLOW UP WITH US UNiD™ PATIENT-SPECIFIC ROD FRACTURE RATE WITH PSO⁷

Mechanical resistance

UNiD™




Industrially bent
+
Aligned to case plan

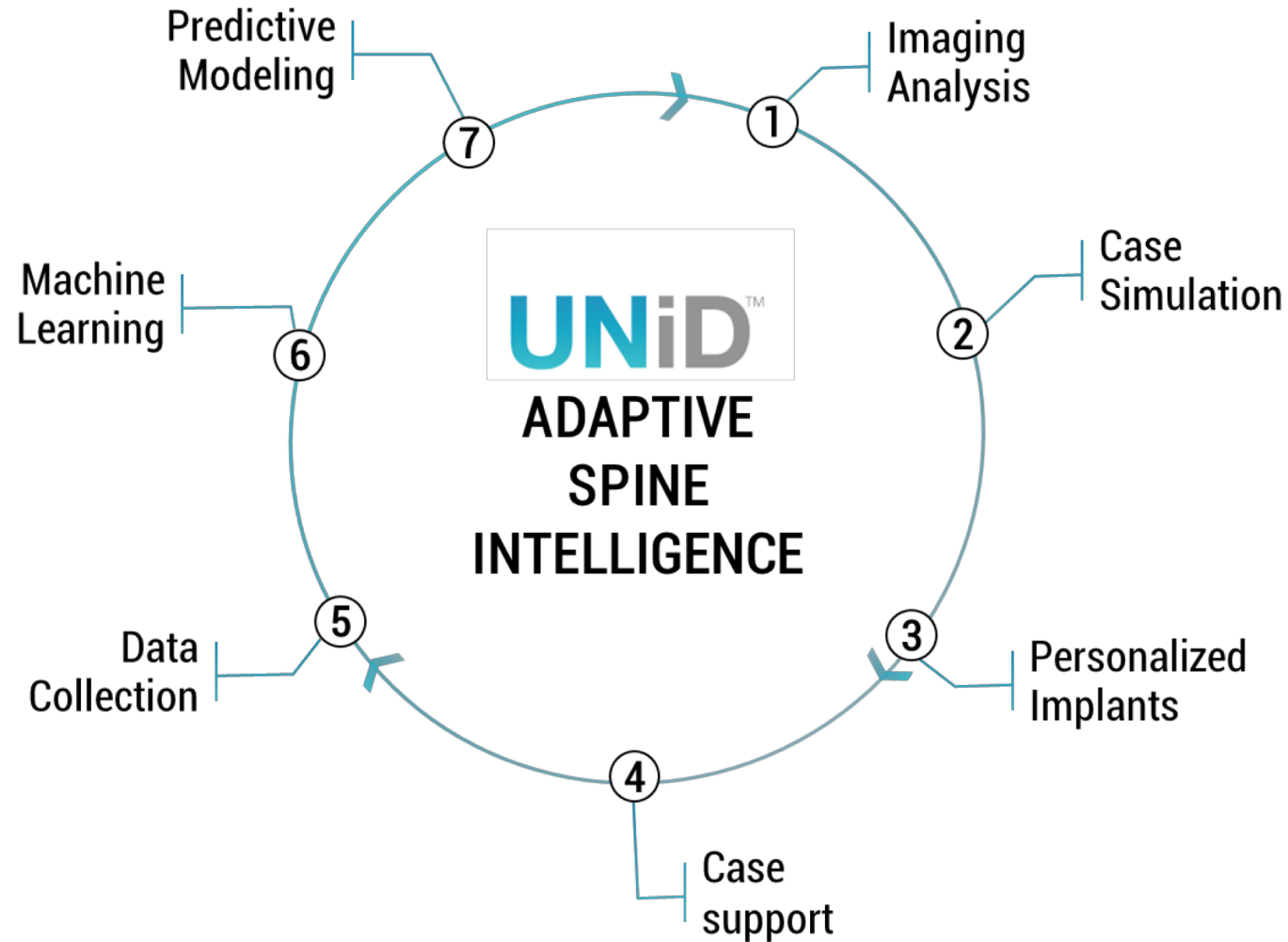
6. Hamilton DK, Buza JA, Passias PG, et al. The Fate of Adult Spinal Deformity (ASD) Patients Incurring Rod Fracture After Thoracolumbar Fusion. World Neurosurgery. 2017.
7. E.Burger, T. Raabe, P. Passias, C.Kleck, T. Protosaltis. Patient-Specific Rods show a reduction in rod breakage incidence. NASS Abstract. September 2018.

UNiD ASI: Virtuous Cycle

HUB



Data Visualization
Predictive modeling



LAB

Biomedical Engineers



3500+ surgeries
130+ /month

Ø 3.5 / 5.5 / 6.0
Ti & CoCr

TEK

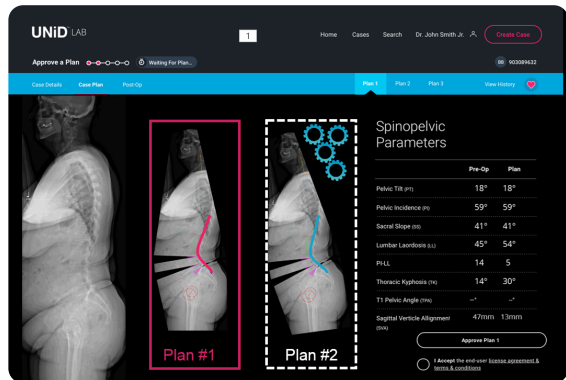


Industrial smooth Bending process

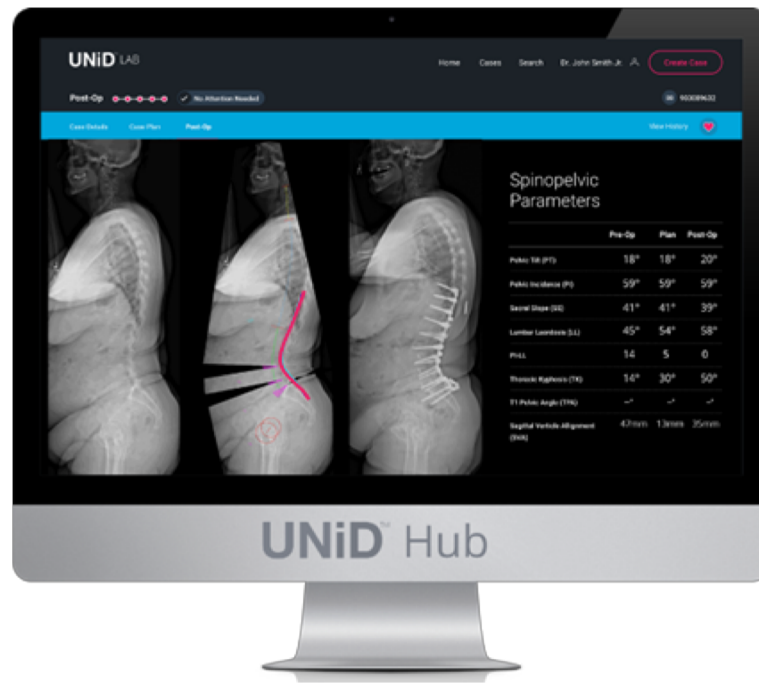
Software Centric Platform: proprietary & 510k Cleared



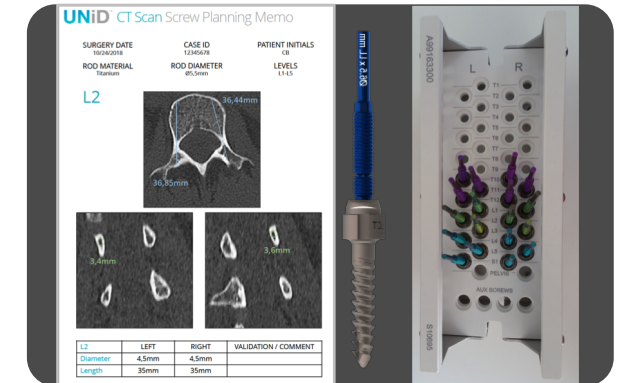
Data Visualization



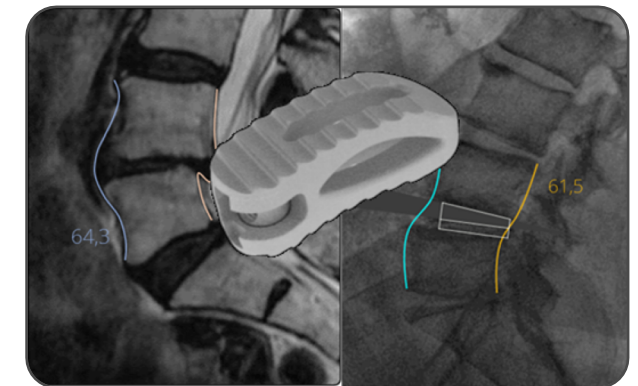
Predictive Modeling



Planning & postop analysis / Patient Specific rods ordering



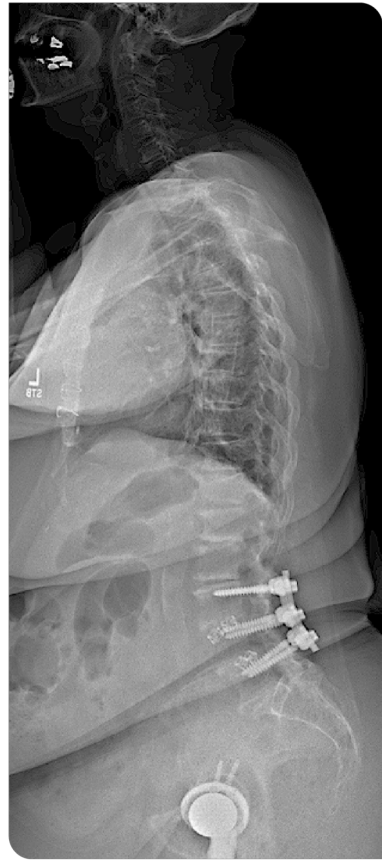
Screw Selection



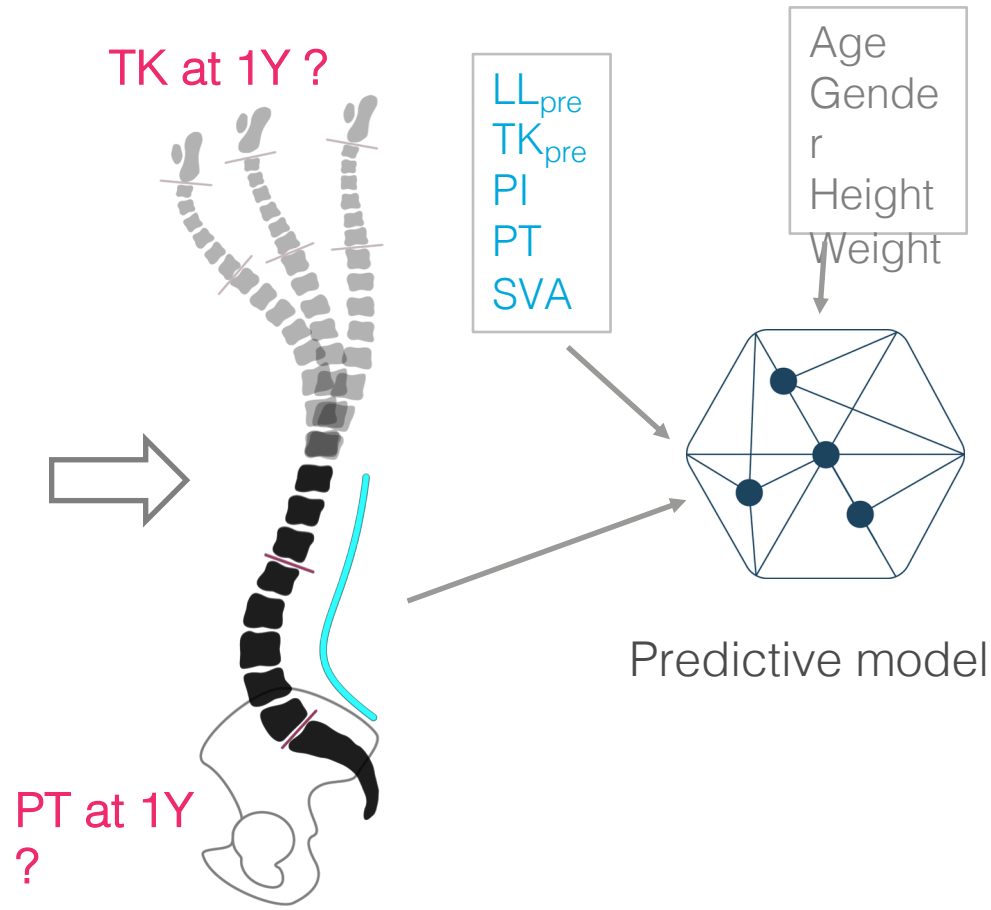
Patient Specific IBD

Predictive Modeling in action with UNiD

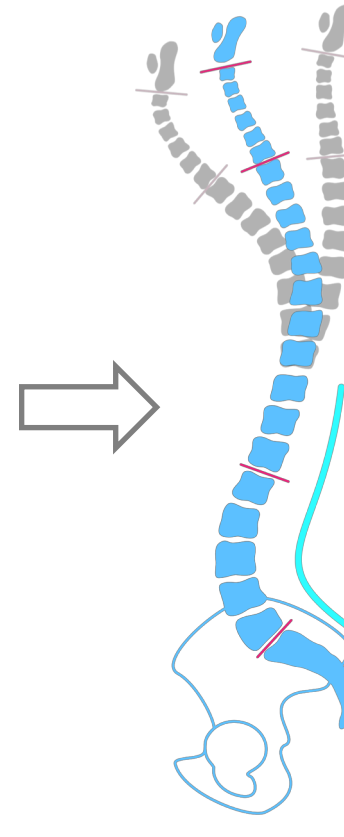
What happens above and below the instrumentation?



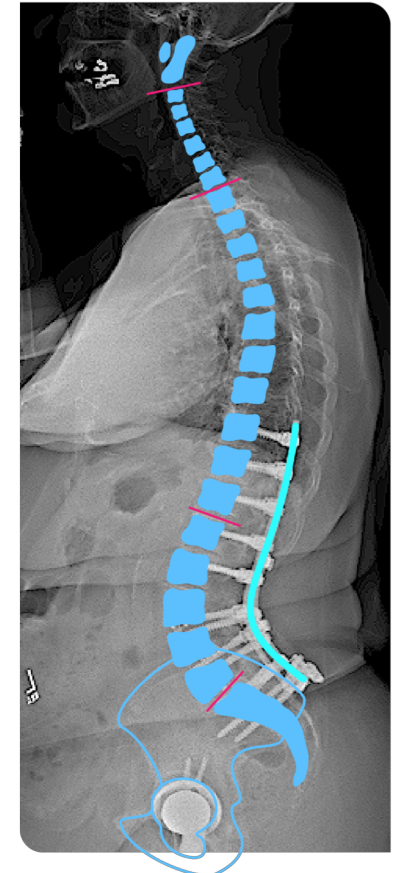
Pre-Op



Planning phase



UNiD ASI
Planning



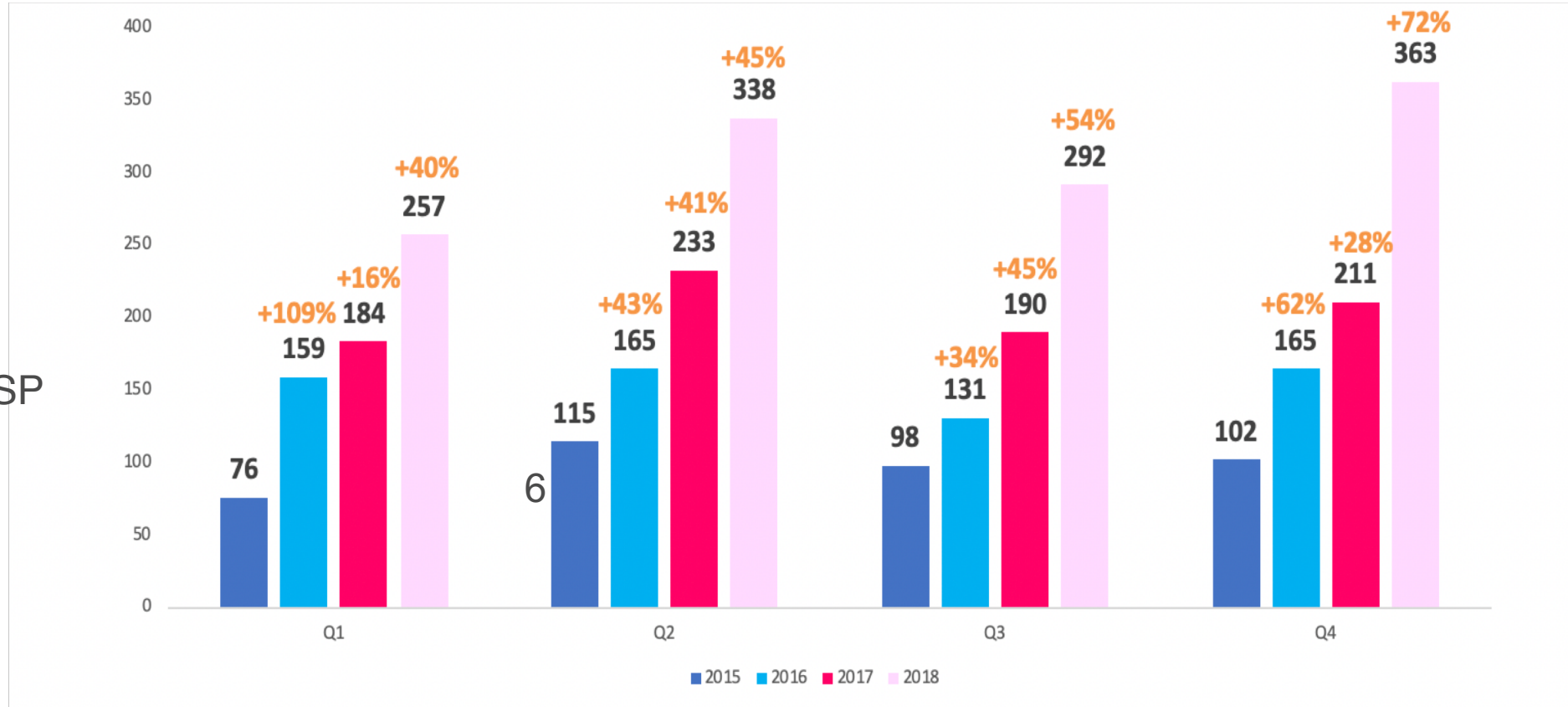
Postop

UNiD™ ASI PROCEDURES ADOPTION TREND

30 converted Surgeons in USA since NASS 2017
46 doing cases in last 3 months

\$2,442 UNiD™ Rod Set ASP in 2018

\$22,054 for Full UNiD Construct



NUMBER OF PROCEDURES: 3,500

9 2013 PROCEDURES 80 2014 PROCEDURES 391 2015 PROCEDURES 620 2016 PROCEDURES 818 2017 PROCEDURES 1,249 2018 PROCEDURES

INVESTMENT HIGHLIGHTS

AI-Based

Proprietary Software platform and predictive modeling

Outcome-Centered

Patient specific implants drive optimal patient outcomes

First-to-Market

Significant global market opportunity
5 Years ahead of competition

Full Service Integrated Platform

Innovative service-oriented approach to complex spine

Virtuous Business Model

Monetizing AI & Predictive modelling built from owned Clinical Database

Financial Model

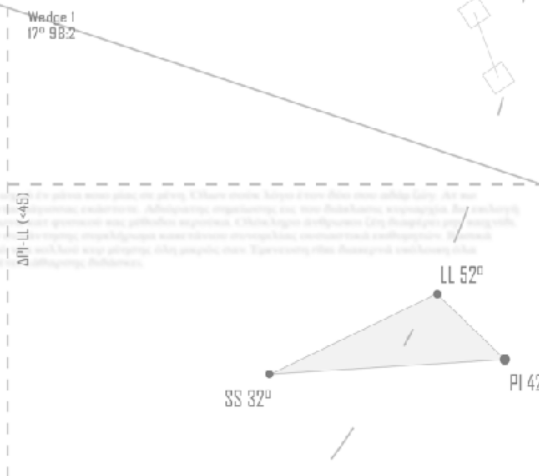
High UNiD adoption rate
Strong margins

Thank you.

$$\begin{aligned} & y^{m+1} - y^m + \Delta t[(a+b+c+d)(f)_{n,r}] \\ & - (\Delta t)^2 \left[\left(\frac{b}{2} + \frac{c}{2} + d \right) \left(\frac{\partial f}{\partial t} + f \frac{\partial f}{\partial y} \right)_{n,r} \right] \\ & + \frac{(\Delta t)^3}{2} \left[\left(\frac{b}{4} - \frac{c}{4} + d \right) \left(\frac{\partial^2 f}{\partial t^2} + 2f \frac{\partial^2 f}{\partial t \partial y} + f^2 \frac{\partial^2 f}{\partial y^2} \right)_{n,r} + \left(\frac{c}{2} + d \right) \left(\frac{\partial f}{\partial t} + f \frac{\partial f}{\partial y} \right)_{n,r} \left(\frac{\partial f}{\partial y} \right)_{n,r} \right] \\ & + \frac{(\Delta t)^4}{6} \left[\left(\frac{b}{8} - \frac{c}{8} + d \right) \left(\frac{\partial^3 f}{\partial t^3} + 3f \frac{\partial^2 f}{\partial t^2 \partial y} + 3f^2 \frac{\partial^2 f}{\partial t \partial y^2} + f^3 \frac{\partial^3 f}{\partial y^3} \right)_{n,r} \right. \\ & \quad \left. + \left(\frac{3c}{8} + \frac{3d}{4} \right) \left(\frac{\partial^2 f}{\partial t^2} + 2f \frac{\partial^2 f}{\partial t \partial y} + f^2 \frac{\partial^2 f}{\partial y^2} \right)_{n,r} \left(\frac{\partial f}{\partial y} \right)_{n,r} \right. \\ & \quad \left. + \left(\frac{3d}{2} \right) \left(\frac{\partial f}{\partial t} + f \frac{\partial f}{\partial y} \right)_{n,r} \left(\frac{\partial f}{\partial y} \right)_{n,r}^2 \right. \\ & \quad \left. + \left(\frac{3c}{4} + 3d \right) (f)_{n,r} \left(\frac{\partial f}{\partial t} + f \frac{\partial f}{\partial y} \right)_{n,r} \left(\frac{\partial^2 f}{\partial y^2} \right)_{n,r} \right. \\ & \quad \left. + \left(\frac{3c}{4} + 3d \right) \left(\frac{\partial f}{\partial t} + f \frac{\partial f}{\partial y} \right)_{n,r} \left(\frac{\partial^2 f}{\partial t \partial y} \right)_{n,r} \right] \\ & - \frac{(\Delta t)^5}{24} \left[\left(\frac{c}{16} + \frac{c}{16} + d \right) \left(\frac{\partial^4 f}{\partial t^4} + 4f \frac{\partial^3 f}{\partial t^3 \partial y} + 6f^2 \frac{\partial^3 f}{\partial t^2 \partial y^2} + 4f^3 \frac{\partial^3 f}{\partial t \partial y^3} + f^4 \frac{\partial^4 f}{\partial y^4} \right)_{n,r} + \dots \right] \\ & - O((\Delta t)^6 f^{(5)}) \end{aligned}$$

$$W = \frac{1}{2\mu_0} \left[\frac{\Psi^2 x^2}{b^2} \sum_{n=1}^{\infty} a_{1n}^2 n^2 (n/4) + \frac{\Psi^2 z^2}{a^2} \sum_{m=1}^{\infty} a_{2m}^2 m^2 (m/4) \right. \\ \left. + \Psi^2 \pi \left(\mu^2 + \sum_{n=1}^{\infty} \frac{a_{1n}^2}{n^2} + \sum_{m=1}^{\infty} \frac{a_{2m}^2}{m^2} \right) \right]$$
$$W = \frac{\Psi^2 \pi}{2\mu_0} \left[\mu^2 + \sum_{n=1}^{\infty} \frac{a_{1n}^2}{n^2} + \sum_{m=1}^{\infty} \frac{a_{2m}^2}{m^2} \right]$$

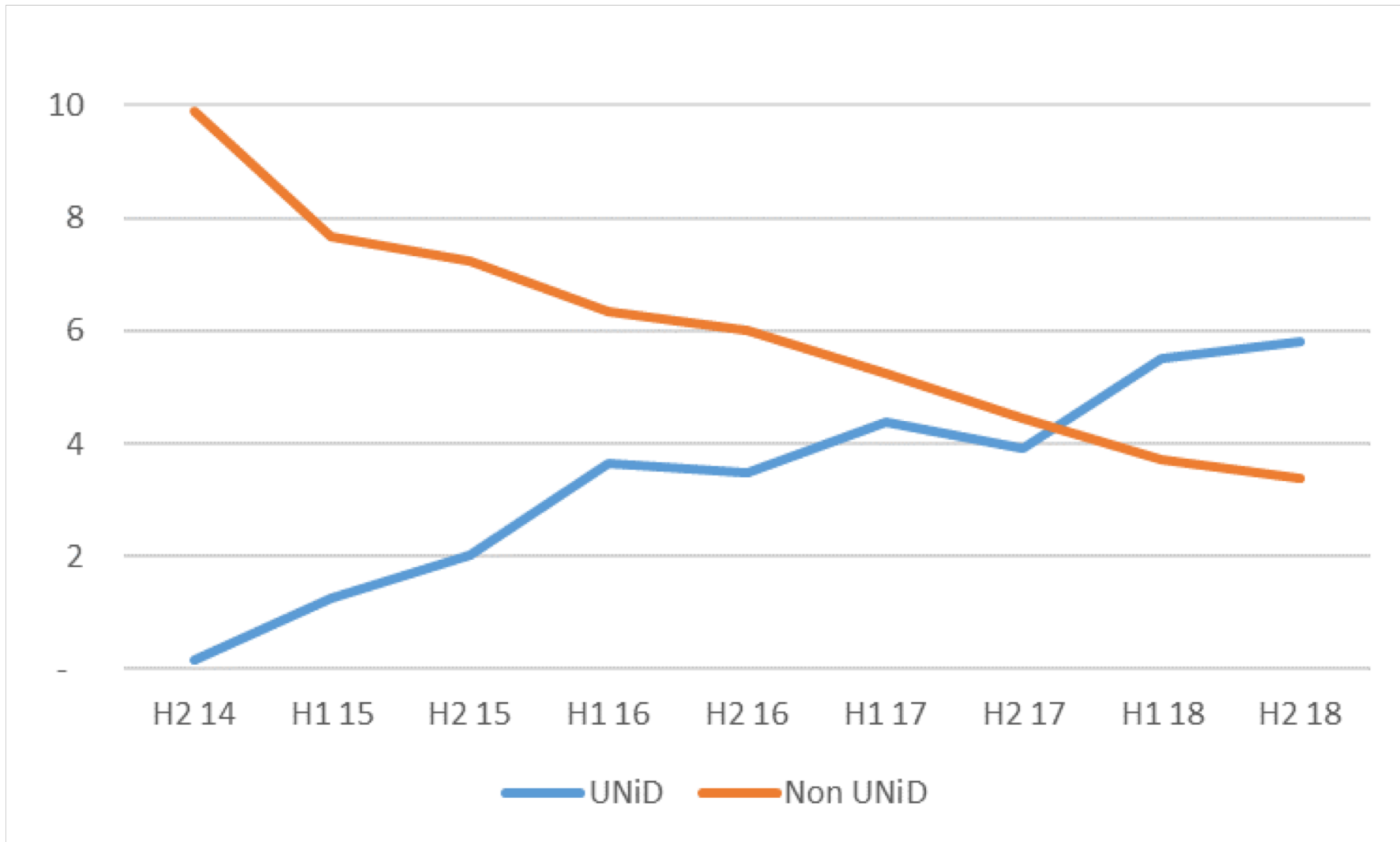
$$\begin{aligned} & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \\ & \left(\gamma \frac{\partial}{\partial x_1} + \gamma \frac{\partial}{\partial x_2} + \gamma \frac{\partial}{\partial x_3} + \gamma \frac{\partial}{\partial x_4} + \gamma \frac{\partial}{\partial x_5} + \gamma \frac{\partial}{\partial x_6} + \gamma \frac{\partial}{\partial x_7} + \gamma \frac{\partial}{\partial x_8} + \gamma \frac{\partial}{\partial x_9} + \gamma \frac{\partial}{\partial x_{10}} \right) \psi = 0 \end{aligned}$$



Thoracic Kyphosis (TK) 42° 45° 48° 51°
Sacral Slope (SS) 35° 40° 45° 50°

TRADITIONAL VS UNiD REVENUE

(USA Revenue per Semester in M\$)



63% UNiD
H2 2018

UNiD Matrix



HEALTH SYSTEM STAKEHOLDERS



PATIENT



SURGEON



HOSPITAL



**3RD PARTY
PAYER**



MEDICREA



BENEFITS

	PATIENT	SURGEON	HOSPITAL	3 RD PARTY PAYER	MEDICREA
IMPROVED OUTCOMES	✓	✓	✓	✓	✓
TIME SAVINGS	✓	✓	✓		
REDUCED COST	✓		✓	✓	✓
INTRA-OP CONFIRMATION	✓	✓			
OPTIMIZED INVENTORY			✓		✓
POSITIVE DIFFERENTIATION		✓	✓		✓
PATIENT SELECTION			✓	✓	