



Advancing patient care  
and reducing neural risk



NuVasive Clinical Services (NCS) is committed to advancing patient care and reducing risks to help prevent neural injuries in surgery. As one of the largest intraoperative neuromonitoring (IOM) providers in the country, we support surgeons with best-in-class technology and a highly trained clinical team that help enable improved patient outcomes.

## The value of IOM

### Helping protect you and your patients

IOM offers insight into the nervous system during spine, peripheral nerve, vascular, and brain-related surgeries. Use of IOM facilitates the surgical process and can reduce surgical risk by providing critical information and alerts to surgeons of potential harm or compromise to the spinal cord or neural structures.

**22.8%**

of spine surgeries have a complication. Of those, the third most common complication is nerve injury.<sup>1</sup>

### The harsh reality of nerve and spinal cord injury

Injury to the nervous system can be profound for both the patient and healthcare provider.

For the healthcare provider, it can mean:

- Poor clinical outcomes
- A damaged reputation
- Increased medicolegal risk
- Increased length of patient stay by several days<sup>2</sup>
- Unnecessary added costs<sup>3</sup>
- Reduced patient satisfaction scores, which are increasingly tied to reimbursements

IOM enables less risk, better decision making and ultimately, better patient care.

***In a growing marketplace, the variance in technology and quality of care is vast—finding a partner you can trust is critical.***



## The NCS difference

- Best-in-class technology
- Highly trained practitioners
- Integrity and ethics
- Accountability through reporting
- Customized partnerships to meet your needs
- Coverage you can count on

Our reach spans beyond clinical services and includes a wide range of NuVasive hardware, biologics, and other industry-leading systems to help drive impact in and out of your OR.





# NVM5

## One device, multiple technologies

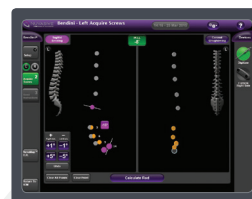
NVM5 combines IOM and other surgical technologies into a single platform, specifically designed to support the unique requirements of spine surgery.

### IOM

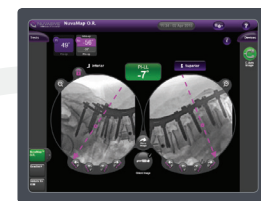
- Free run EMG
- Dynamic EMG/XLIF EMG
- SSEP
- TMAP
- MEP
- Remote monitoring

### Other enabling technologies

- Integrated Global Alignment (iGA)
- Bendini



Rod bending



Intraoperative alignment assessment



TMAP monitoring



Spinal cord monitoring



Screw test and nerve monitoring



XLIF monitoring

## IOM and other enabling technologies

### Expediting surgical workflow

- Small footprint; all-in-one design
- Fast OR setup and quick room turns
- Automation of manual tasks
- Procedurally integrated

### Advancing patient care

- Standardized, clinically supported alerts
- Surgeon-directed information and control
- Proactively identifies potential neural injury
- Preserves spinal alignment, reduces residual screw pullout forces<sup>4</sup>

### Improving surgical economics

- Fewer vendors in the OR
- Efficient maximum access surgery (MAS) procedures with lower OR costs and faster patient recovery<sup>5-7</sup>
- Minimizes scope of surgery, revision, and waste
- Multiple technologies in one platform



# Clinical and economic challenges of spine surgery

## Challenges

## NVM5 solutions

### Revision surgeries

- Malaligned patients: 10x risk of reoperation<sup>8</sup>
- Breached pedicle screws: Top cause of revision<sup>9</sup>
- Poorly bent rods: Up to 47% rate of screw failures<sup>10</sup>

- **Global alignment:** Quantitative intraoperative alignment assessment
- **Dynamic screw testing:** Proactive pedicle breach avoidance
- **Rod bending:** 60% reduction in residual screw forces<sup>11</sup>

### Increased cost

- In-hospital complications increase hospital costs, on average, by 234%<sup>12</sup>
- The average OR cost to a hospital is approximately \$80 to \$133 per minute<sup>13–15</sup>

- **Multi-modality neuromonitoring:** Reduces hospital cost by \$63,387 per neurological deficit averted<sup>13</sup>
- **Efficient IOM and rod bending:** Helps reduce hardware waste and OR time. 30-minute reduction can lead to \$2,400 to \$3,990 in savings<sup>13, 14</sup>

### Infection

- Hospital-acquired infections average 4% to 5% in U.S.<sup>16–18</sup>
- Surgical site infection is the most common (1% to 4%)<sup>17</sup>

- **Surgeon-driven platform:** Multiple technologies, one device, fewer vendors in the OR
- **Augmented intraoperative information:** Supports faster, less disruptive MAS procedures

### Complications and hospital stay

- Neural injury: 3rd most common complication and 2nd leading cause for increased stay<sup>19, 20</sup>
- Open posterior procedures require longer recovery

- **XLIF real-time, directional EMG:** Nearly 3x reduction in neural complications compared to direct dissection<sup>21</sup>
- **MEP/SSEP monitoring:** Highly effective (70-100%) at detecting neural injury<sup>22</sup>
- **Multi-modality neuromonitoring:** Reduces risk of neural complications by 49.4%<sup>23</sup>
- **XLIF hospital stay:** 1-3 days, compared to 3-6 days with open posterior procedures<sup>24, 25</sup>

### Longer OR times

- Variable, delayed neuromonitoring
- Laborious manual rod bending
- Subjective, iterative, alignment assessment

- **Automated nerve testing:** Fewer attempts to place screws; faster XLIF nerve detection
- **Rod bending:** Opportunity to reduce rod bending/ placement time by up to 1 hour in large multi-level cases

# Pulse

## Looking ahead to the future

In addition to the NVM5 platform, NuVasive has developed a single integrated technology platform in Pulse. Pulse integrates multiple enabling technologies to improve workflow, reduce variability, and increase the reproducibility of surgical outcomes.\*



Neuromonitoring



Global alignment



Rod bending



Radiation reduction and imaging



Navigation



Robotics



Smart tools and other applications



Our purpose is to **transform outcomes** through best-in-class surgical technology.

We focus on **advancing global adoption** of less disruptive surgery and improving the standard of care by pairing industry-leading procedures with enabling technologies.





## Multi-modality monitoring

In addition to standard modalities including EMG, MEP, SSEP, etc., NCS employs advanced technology to facilitate the physiological assessment of neural structure integrity and to map neural anatomy during complex procedures.

### Modalities include:

- Cortical and subcortical motor mapping
- Sensory mapping
- Language mapping
- Peripheral nerve monitoring and functional assessment
- Rhizotomy
- Brainstem auditory evoked responses (BAER)
- Visual evoked potentials (VEP)
- Cranial nerve monitoring and mapping
- Intraoperative EEG
- Cortical perfusion monitoring
- Direct (D) wave monitoring
- Dorsal column mapping to locate physiologic midline
- Microelectrode recordings (MER) during DBS

### NCS can monitor the following cases:

- Intracranial/brain
- Neurosurgical spine
- Orthopedic spine
- Orthopedic/joints
- ENT/otolaryngology
- Interventional neuroradiology
- Vascular
- Peripheral neurosurgery
- Functional neurosurgery/neuromodulation

## Highly trained neurophysiologists



Committed to clinical excellence

NCS combines a rigorous training and university-accredited education program for our neurophysiologists (NPs), with accreditations and credentials now recognized as the standard for ensuring competency and quality of care.



More than 500 NPs and dozens of board-certified oversight neurologists



Nationally recognized Certification of Neurophysiologic Intraoperative Monitoring (CNIM), or CNIM eligible



Cross trained on NVM5, Pulse, and traditional systems

  See our NPs in action at **#MeetTheNP**

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## Coverage you can count on

Any time, any day

Covering more than **100,000 cases annually**, NCS is among the largest providers of IOM services in the country. This means we're set up with a robust infrastructure to support your case needs.



**Available 24 hours  
a day, 7 days a week  
across 46 states.**

**+** Comprehensive liability and insurance coverage, and legal support





## Integrity and ethics

### Standing apart from the headlines

Guided by our core values of integrity and transparency, the NCS impact spans beyond the OR—from standardized billing practices to clinical efficacy reporting and more.

We have well-established workflows and professional teams in place to:

- Support third-party billing (including appeals and denials)
- Invoice insurance companies
- Establish in-network and third-party agreements
- Streamline surgeon-patient onboarding and communications

## Accountability through reporting

### The visibility you need

Thanks to our scale, and a commitment to transparency and improvement, NCS leverages detailed reports on case **performance, safety, and outcomes** to help drive change.

#### Annual IOM reports include:

Performance	Staffing
	Utilization
	Procedure types
	Scheduling dynamics
Safety	Needle stick injuries
	Oral injury
	Integument injury
	Technical issues preventing monitoring
Outcome	Reportable data used to influence the procedure
Procedure	CPT codes

## Customized partnerships to meet your needs

NCS understands every healthcare facility is unique, so we offer customized packages to meet your varying needs.

### Comprehensive service

#### Single source provider for IOM and surgical hardware

- Flat case rates for standard modalities—improves cost forecasting
- Value pricing based on case volume with additional savings for long-term and exclusive status
- Diversified platforms available
- Savings on NVM5 platform with NCS service

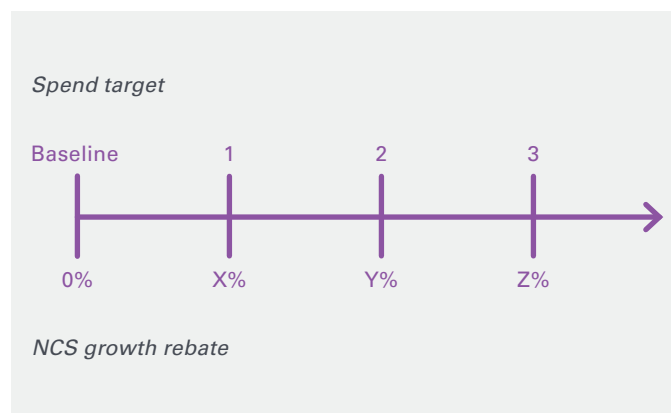
	Annual revenue growth	Rebate on growth
Tier III	\$100,000	X%
Tier II	\$500,000	Y%
Tier I	\$1,000,000	Z%

This chart is for illustrative purposes only. Actual rebate and growth targets may vary.

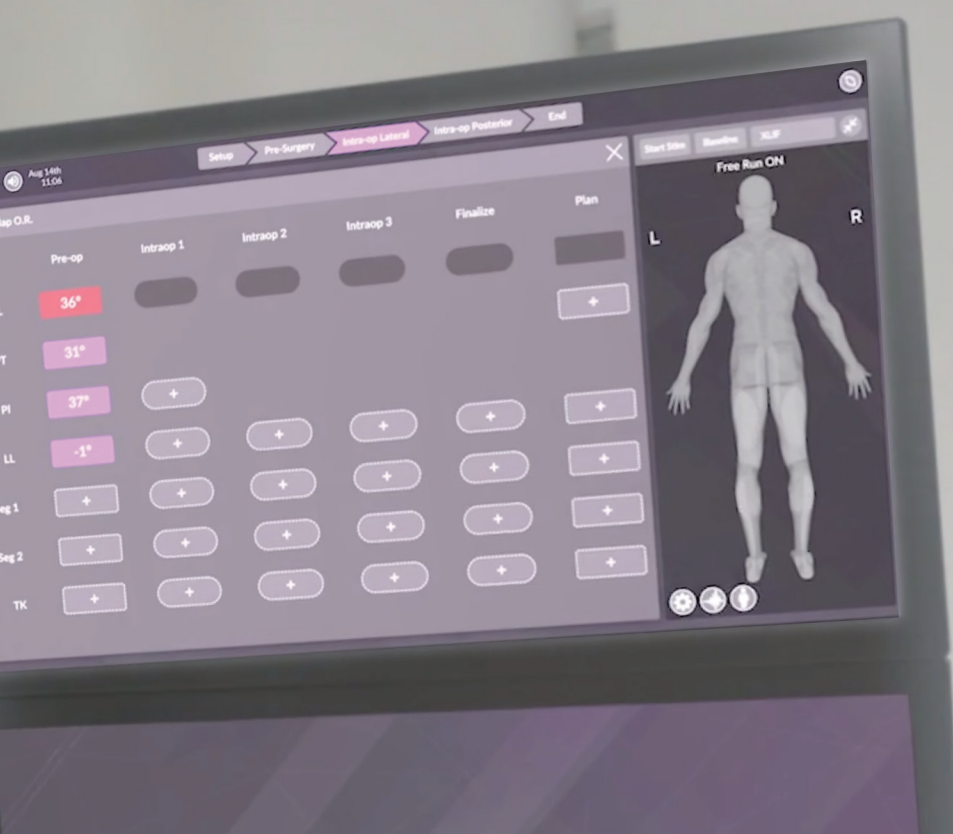
### Preferred service and hardware growth

#### Vendor consolidation and savings through commitment

- Increased savings with commitment
- Tiered growth rebate based on achieving spend target
- Reduces hardware vendors and consolidates IOM provider(s)
- Rebate inclusive of hardware, biologics, and neuromonitoring







## Monthly subscription

### Predictable, reproducible budget forecasting for service

- Monthly subscription for IOM service
- Two-year minimum commitment
- 90% of cases with oversight physician

### The benefits

Increase clinical value and accuracy of IOM

- NPs facilitate more service and technology
- Decrease overall cost to deploy more technology
- Differentiate your service in competitive hospital marketplace


Features	Silver	Gold	Platinum
Traditional technology and one stim device	●	●	●
NVM5 IOM and one stim device	●	●	●
Bendini and iGA	●	●	●
Pulse	●	●	●
Advanced cases	●	●	●
Procedural accessories (I-PAS, XLIF kit, etc.)	●	●	●
● Included    ● Not included    ● Additional cost			


## Partner with us

Contact our team at **+1 800.638.7564** or visit us online at **[nuvasive.com/ncs](https://www.nuvasive.com/ncs)**

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\*Certain applications of the Pulse platform are under development and not available for commercial sale; robotics is not cleared for use by the FDA.

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