2022

Inspire Patient Experience Report

Market Surveillance & Quality Update

Inspire
Sleep Apnea Innovation

Overview:

Every obstructive sleep apnea (OSA) patient experience is different, but one aspect rings true for all—it's excruciating to live with. When it comes to OSA treatment, CPAP is the standard of care. While it works for many, it doesn't always work for everyone. When this happens, patients feel like they're out of options and out of luck.

Inspire is a solution for these people. It is placed surgically by an ENT and tailored to the patient by a sleep medicine professional. The patient controls therapy with a small remote. Thousands of patients have come to count on Inspire for relief from OSA.

From its original founding in 2007, successful patient outcomes and care experiences have been the guiding tenants for Inspire. Dr. Glen Nelson, Inspire's first chairman of the board, established the motto, "if we put the patient first, we will never lose our way." This spirit guides us and has led to significant investment in the Inspire patient experience reporting (PER) system. Putting the patient first requires a deep understanding of the experience today and a continuous focus on identifying ways to make the experience better all the time.

For a full bibliography of over 200 peer reviewed publications covering Inspire, visit professionals.inspiresleep.com/publications.

Commitment to Quality

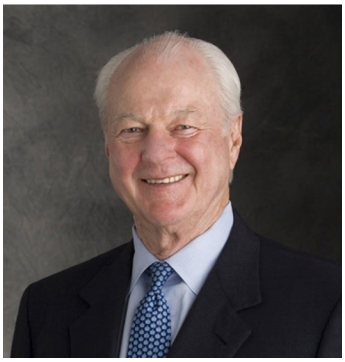
At Inspire Medical Systems, our focus on successful patient outcomes is paramount in everything we do each day. Our Quality Policy is our formal commitment to you that we will never waver in that regard.

Inspire Quality Policy:

- **Relentlessly** pursue safe, effective, and reliable treatment of obstructive sleep apnea.
- **Strive** to consistently improve the quality of life of our patients and exceed customer expectations.
- **Maintain** rigorous processes that ensure compliance with applicable global laws and regulations.

There are two primary data sources for the Inspire PER system.

1. Post-Market surveillance Data
2. ADHERE, real world global registry

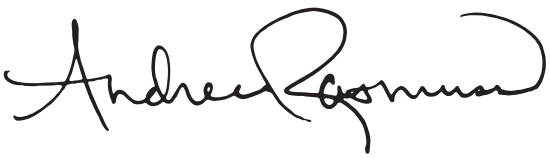


Dr. Glen D Nelson
Inspire Chairman of the Board
2006–2017

"Put the patient first and you will never lose your way."

Contact Information

Feedback plays a vital role in our effort to continuously improve our products and services. To contact our patient and physician support team, please visit inspiresleep.com/contact for 24x7 support or call 1-844-672-4386 (US) or +49 0800 00 09 78 99 (EU).



Andrea Rasmussen
Vice President, Quality
Inspire Medical Systems, Inc.

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Post Market Surveillance System Overview

Post market surveillance is a systemic process used to collect and analyze experience gained from medical devices that have been commercially approved and placed on the market.

Post market experience data is collected from patients, healthcare professionals, product registries, regulators and Inspire employees.

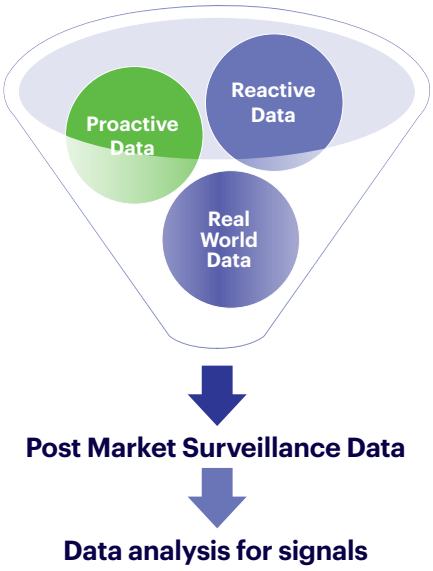
A post market surveillance system has many critical inputs and outputs, as illustrated below.

Post market surveillance system

Proactive Data Sources
- Post Market Clinical Studies
- Literature Searches
- Product Service Data
- Customer Surveys
- Social Media

Reactive Data Sources
- Complaints
- Regulatory Safety Reports
- Non-conformance Reports
- Out-of-Tolerance Reports
- Audits

Data Signals Drive:
- Corrective & Preventive Action
- Training
- Design Improvements
- Product Recalls



Inspire Medical Systems uses both proactive and reactive data to monitor the performance of our products.

Data is collected from all Inspire Medical Systems customers around the globe. Data analysis from these sources may lead to corrective action, regulatory reporting and/or continuous improvement.

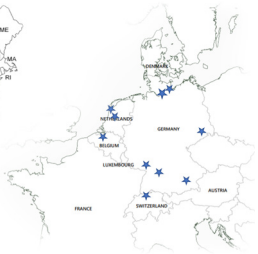
Post market surveillance data is collected from customer and patient-initiated complaints, product returns and Inspire employee reports. Underreporting of events is recognized throughout the medical device industry. Inspire Medical Systems is continuously improving the accuracy of the data through rigorous and regular employee training and customer awareness.

ADHERE Registry Overview

- Goal: Collect **real-world outcomes** data
- International multi-center, standard-of-care registry
- Eligibility – patients receiving Upper Airway Stimulation (UAS) for OSA

>4,000 enrollments at 62 medical centers as of August 2022 Enrollment Goal: 5,000 patients

62 US Centers



11 EU Centers (Belgium, Germany, Netherlands, Switzerland)

Registry Data Collection

Baseline

Medical Record
- Demographics
- OSA History
- AHI
- ESS

Implant
- Implant Time
- Adverse Events

Post-Titration (6mo.)
- AHI
- ESS
- Patient Experience
- Therapy Usage
- Clinical Global Impression

Annual Visit (12mo.)
- AHI
- ESS
- Patient Experience
- Therapy Usage
- Clinical Global Impression

AHI = Apnea Hypopnea Index
ESS = Epworth Sleepiness Scale

Patient Satisfaction

Patient satisfaction is a result of clinical outcomes, patient experience, and quality of life. It is a measure of the timely, efficient, and patient-centered delivery of quality care. Patient satisfaction is thus a very important indicator to measure the success of Inspire.

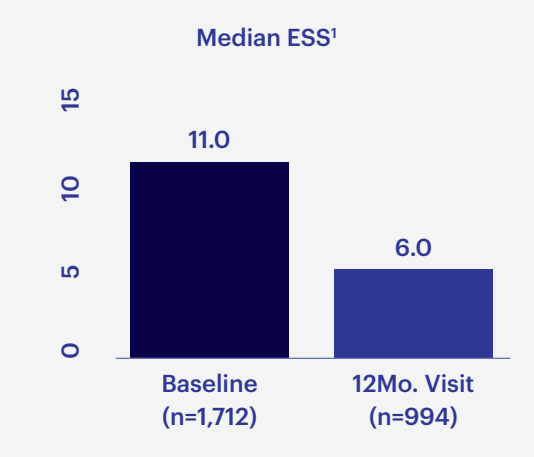
The ADHERE registry asks patients to answer four questions about their satisfaction with Inspire.

How does Inspire compare against your previous experience with CPAP?	**91%**[1]	**Say Inspire is better**
I would recommend Inspire to a friend or family member.	**93%**[1]	**Agree or strongly agree**
Given the chance, I would choose to receive Inspire again.	**92%**[1]	**Agree or strongly agree**
Overall, how satisfied are you with Inspire?	**90%**[1]	**Satisfied or very satisfied**

Quality of Life & Compliance

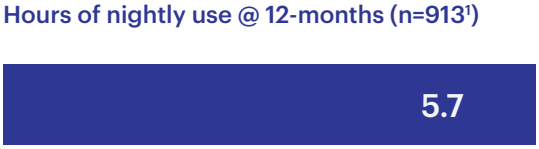
The Epworth Sleepiness Scale (ESS) is currently the most used subjective test of daytime sleepiness in clinical practice. It is a simple, self-administered, eight-item questionnaire that measures the risk of falling asleep in eight specific situations that are commonly met. A score of less than 10 is considered as normal. The higher the score (from 10 to 24) the greater the reported subjective daytime sleepiness (Johns, 1991).

The ADHERE registry asks patients to complete an ESS survey at baseline and at 6 and 12 month follow-ups. ESS is the measure Inspire uses to quantify subjective benefit of therapy. Prior to Inspire, patients were sleepy, and sleepiness is reduced to normal levels after treatment.



Compliance to therapy is a key factor required to gain the health benefits associated with treating obstructive sleep apnea. Longer CPAP usage has been shown to improve survival, cardiovascular events, blood pressure, excessive daytime sleepiness, cognitive function, and quality of life. However, average compliance to CPAP is often reported at less than 5 hours[2-3].

The ADHERE registry tracks average nightly compliance of Inspire patients.



UAS usage of 5.7 hours/night at 12-months exceeds average CPAP usage levels from major clinical studies. [2-3]

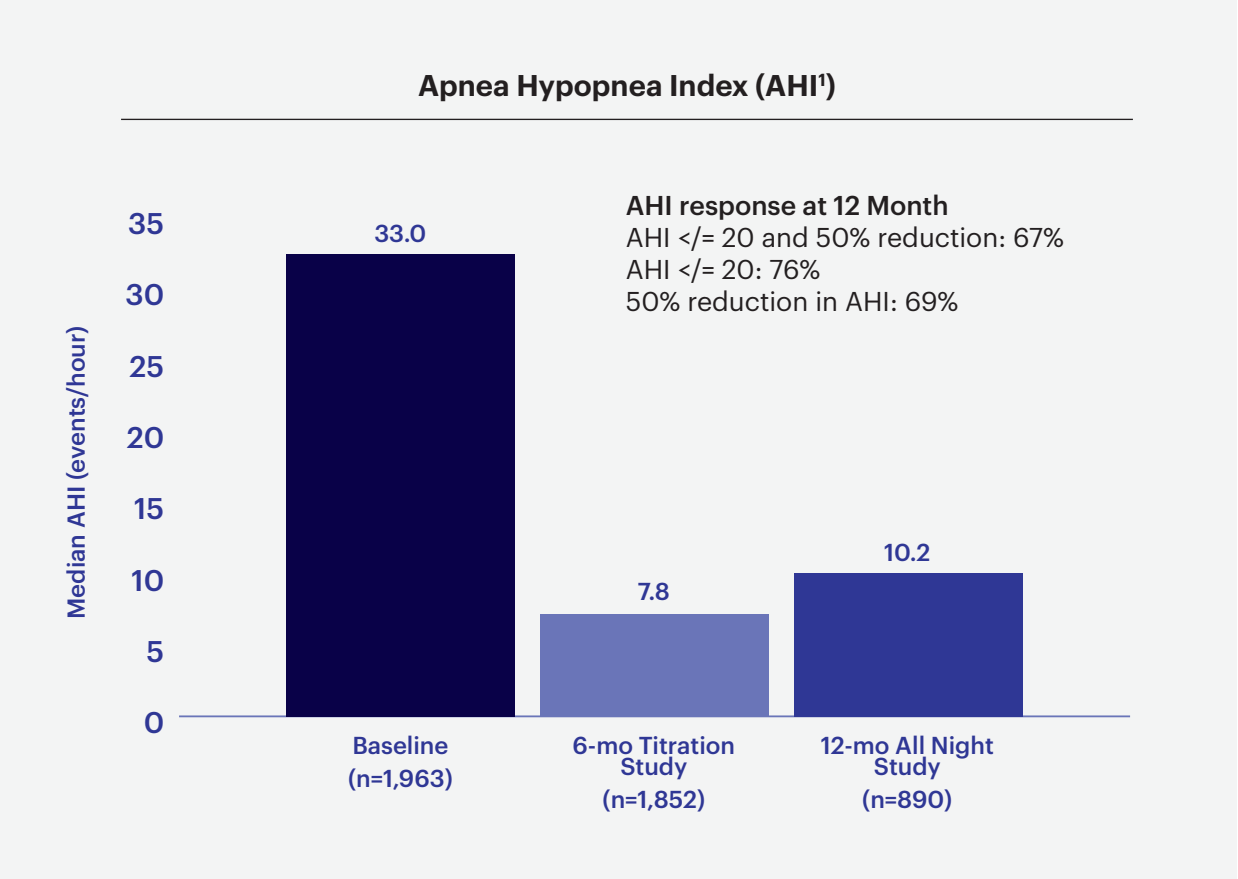
1 Bosschieter et al. Similar effect of hypoglossal nerve stimulation for OSA in five disease categories. J Clin Sleep Med. 2022 Jun 1;18(6):1657-166.
2 Apnea Positive Pressure Long-term Efficacy 1: Study—Kushida et al, SLEEP, Vol. 35, No. 12, 2012
3 The HOME-PAP Study —Rosen et al, SLEEP, Vol. 35, No. 6, 2012

OSA Burden Reduction

The apnea-hypopnea index (AHI) is well established as the best studied metric of OSA severity. The AASM has identified the following severity grades based on the number of obstructive breathing events per hour:

- Mild: 5 to 15 events per hour
- Moderate: 15 to 30 events per hour
- Severe: greater than 30 events per hour

The ADHERE registry includes a PSG titration study at six months and a follow-up PSG or HSAT at 12 months.

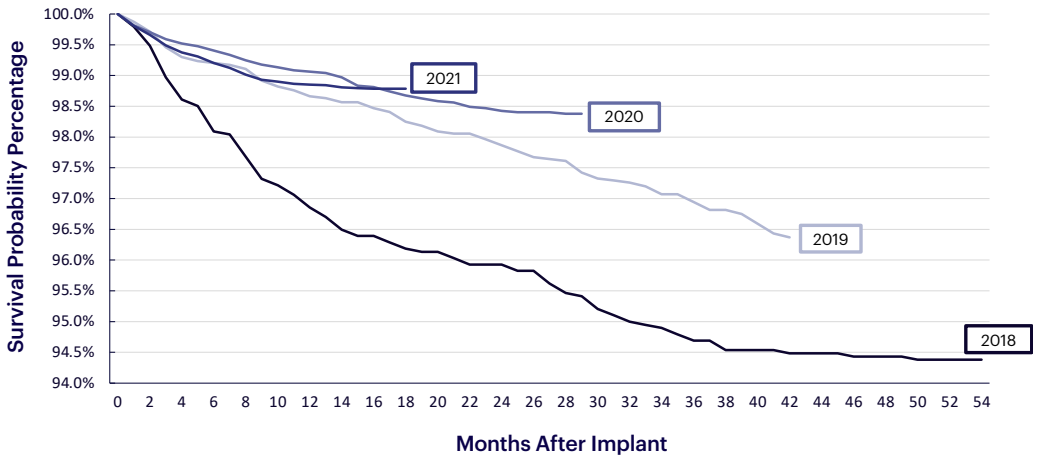


Surgical Revision & Device Explant Results

Inspire monitors and collects post market surveillance data on surgical revisions and device explants. Our historical and go-forward improvements in product and patient outcomes are real and measurable. Year over year improvements are driven by:

- Continuous training and improvement to surgical technique
- Improved Inspire Medical Systems field support training
- Elective explant rates decreasing with improved patient selection
- Published post implant patient care pathways
- Regulatory approval of expanded labeling

Figure 1: **Freedom from Inspire System Revision by Implant Year**



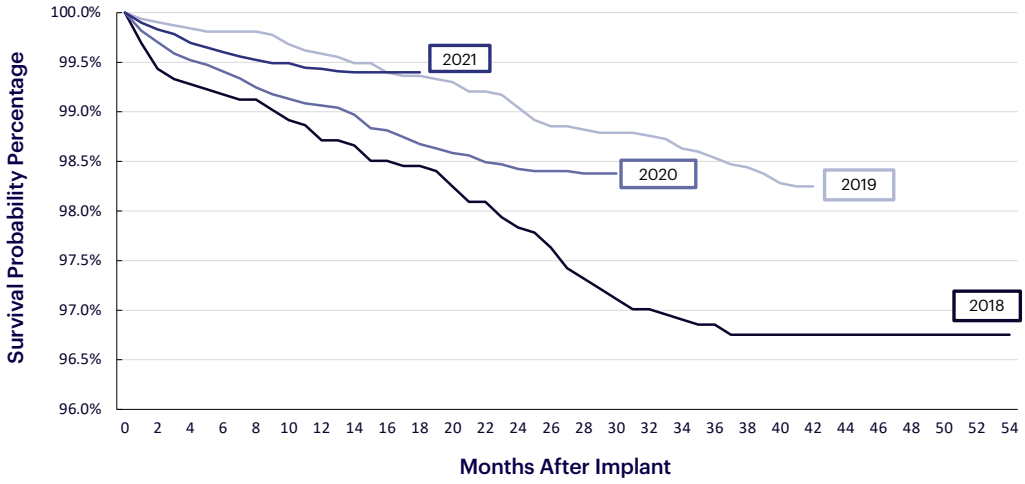
2021 Primary Reasons for Revision:

- **Device Deficiency** (related to the respiratory sensing lead or IPG)
- **Device Movement** (device erosion, migration, tethering)
- **Post-surgical Healing** (device re-suturing, hematoma, incision dehiscence)

Top 3 reasons account for 61% of total revisions

A device revision is a surgical event where a patient requires that an implanted system component be replaced or a surgical intervention is necessary to remedy an adverse event or patient complaint.

Figure 2: **Freedom from Inspire System Explant by Implant Year**



2021 Primary Reasons for Explant:

- Elective Explant
- MRI Compatibility
- Infection

Top 3 reasons account for 96% of total explants

A device explant is a surgical event where a patient requires removal of the entire implanted system or removal of an implanted system component without replacement.

Figures 1 and 2 (on the preceding page) show the percentage of implanted patients that remain free from revision or explant-related events at various time points post implant. These probabilities are estimated using the Kaplan-Meier statistical method. These estimates are intended to illustrate the probability that a patient will be free from a surgical revision or device explant related event for a given number of years. As an example, a probability percentage of 97% indicates that through the stated follow-up time, the patient had a 3% risk of a surgical revision or device explant since the time of initial implant.

These statistical curves are estimates based on internal quality reporting systems. As our experience accumulates, the accuracy of the estimation improves.

In 2020, Inspire's post market surveillance system (illustrated earlier) revealed two (2) specific product quality trends requiring corrective actions.

1. **Implantable Pulse Generator (IPG) - Latent Weld Failure:** This resulted in a revision surgery for a small number of patients because of a lead to IPG header interface issue. Inspire significantly improved the overall system reliability through a weld process change and eliminated this failure mode.

2. **Respiratory Sensing Lead – Tip Failure:** This resulted in a revision surgery for a small number of patients because of the sensing lead tip separating from the primary lead body. Three specific actions items were formally implemented to mitigate this risk:

    - Best practice surgical training on the handling and insertion of the lead
    - An improved surgical technique for implanting the sensing lead; specifically, moving from a 3-incision procedure to a 2-incision procedure
    - Acknowledgement of possible sensing lead interactions with patient anatomy

    Implementation of these mitigations decreased the reported occurrence rate of this issue from approximately 0.6% (or 1 in 170 procedures) to 0.07% (or 1 in 1,400 procedures).

In 2022, Inspire obtained FDA approval to expand Magnetic Resonance Imaging (or MRI) scanning conditions for those patients implanted with an Inspire Model 3028 implantable pulse generator and associated leads. This regulatory labeling update allows patients to safely have MRI procedures and should meaningfully reduce the number of Inspire device explants going forward.

Intraoperative Complications – ADHERE Registry

The ADHERE registry monitors serious adverse events (SAE) during the procedure to place Inspire. Less than a half of a percent of implant procedures result in serious adverse events.

SAE Type[4]	# of Events	% of Patients
Hematoma	2	<0.1%
Infection	1	<0.1%
Failed Implant	1	<0.1%
Pneumothorax	1	<0.1%
Other	3	0.16%
Total	**8**	**0.43%**

Postoperative Complications – ADHERE Registry

The ADHERE registry also monitors serious adverse events (SAE) and other complications during the post-implant follow-up period. The most frequent complication is stimulation related discomfort which is more commonly observed at the 6 month post-titration visit compared to the 12 month final visit.

SAE Type[4]	# of Events	% of Patients
System explant (2 or more components)	1	<0.1%
System revision (2 or more components)	3	0.16%
Sensor lead revision	13	0.7%
Stimulation lead revision	12	0.64%
IPG Pocket revision	2	0.11%
Other	4	0.16%
Total	**35**	**1.9%**

The most frequent complication is therapy-related discomfort which is more commonly observed at the 6 month post-titration visit compared to the 12 month final visit. Of patients with 12 month follow-up data, 19% reported some therapy-related discomfort which most commonly presented as stimulation discomfort, insomnia/arousal or tongue abrasion.

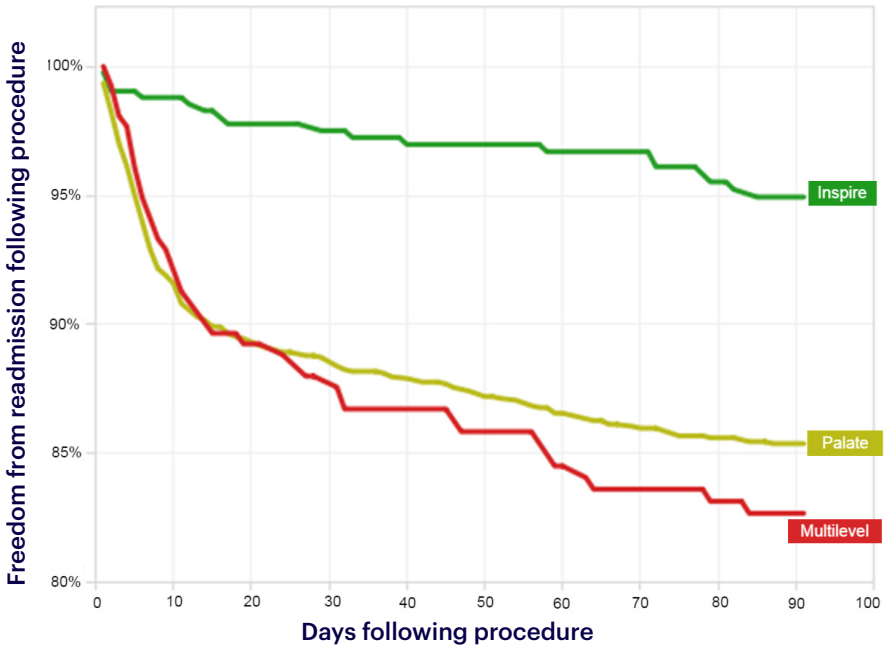
Complication Type[4]	# of Events	% of Patients
Stimulation related discomfort	151	8.2%
Insomnia/Arousal	66	3.6%
Tongue abrasion	63	3.4%
Other non-serious events	69	3.7%
Total	**349**	**18.9%**

4 Suurna et al, ADHERE Registry 2020 Update, Laryngoscope, 00:1=9, 2021

Comparison to Anatomy Altering OSA Surgery – Third Party Data

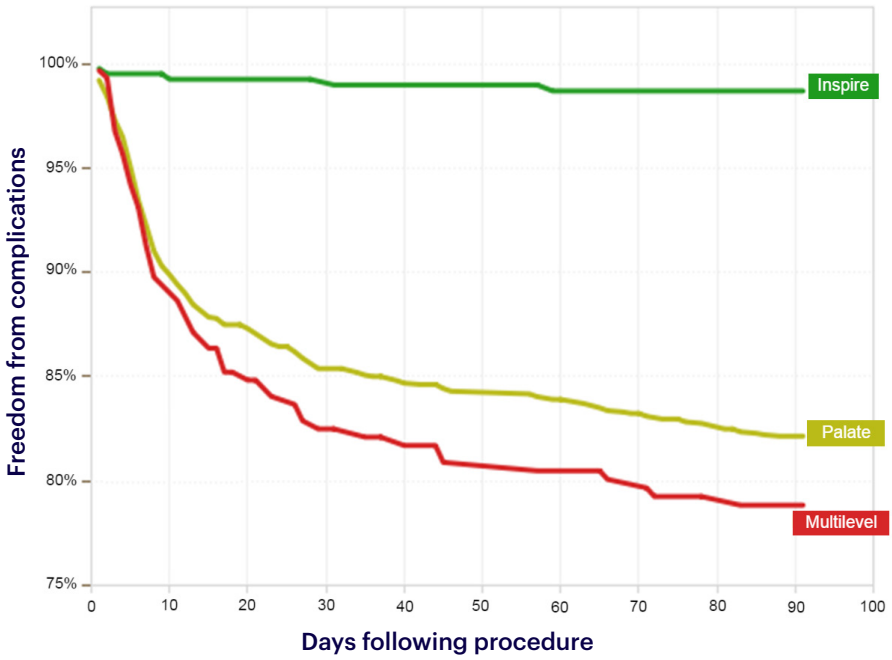
There are other CPAP alternatives available for moderate to severe OSA patients including anatomy altering surgeries. Nord, et. al evaluated readmissions and complications following Inspire upper airway stimulation (UAS) compared to palatal or multilevel sleep surgery. Both hospital readmission and complications following the procedure were significantly lower in the UAS group compared to anatomy altering surgeries. This information is included in the Inspire patient experience report to provide a reference point for the complication rates seen with the Inspire procedure.

Readmission Following Procedure[1]



- Palatal surgery had a higher risk of readmission or return to OR (12%vs 4%, p<0.0001), and a higher complication rate (15% vs 3%, p<0.0001) than Inspire
- Multi-level surgery results had a similarly higher risk of readmission / return to OR (15% vs 4%, p<0.0001, complications: 20% vs 3%, p<0.0001)

Complications Following Procedure



Palate and Multilevel surgery groups have the highest risk of complications in the first 10 days, with ~20% experiencing complications, but the Inspire group had very few complications, measured out to 90 days

1 Nord et al, Comparison of Readmission and Complication Rates Between Traditional Sleep Surgery and Upper Airway Stimulation Using a Novel, National Medical Record Database, COSM 2021 TRIO050