



**Airway Shield™**

**SAFER INTUBATION**

for patients and clinicians





# ENDOTRACHEAL INTUBATION

An Unresolved Medical Challenge



## Endotracheal Intubation (ETI)

The 3<sup>rd</sup> Most Common Medical Procedure in Hospitals around the World  
A High-Risk Life-Saving Procedure

**45%**

of intubations in critically ill patients end up in  
**major complications**  
(hypoxemia, cardiovascular instability or cardiac arrest)

**+100M**

intubations per year **worldwide**  
for all surgical and critically ill patients

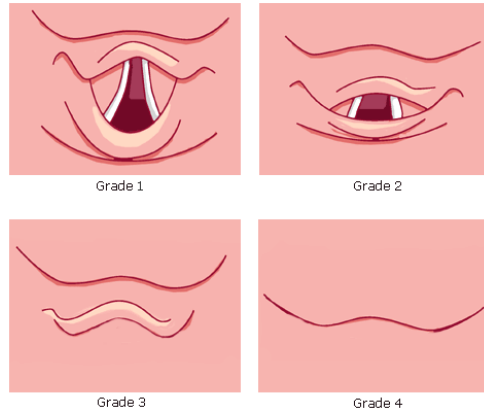
**\$5.94B**

of **annual national cost** of  
peri-intubation morbidity and complications  
in the U.S.

# Normal vs Difficult Airways (DA)

Difficult airway are the ones where those **complications are more probable to happen**. The manage of a **difficult airway** requires advanced planning and alternative tools and techniques, and presents increased risks of complications.

## ANATOMICAL DA



## PHYSIOLOGICAL DA



## SITUATIONAL DA



Most cases of DA in  
**Anaesthesia**



**± 5% of ETI are DA**

Most cases in  
**ICU**



**± 90% of ETI are DA**

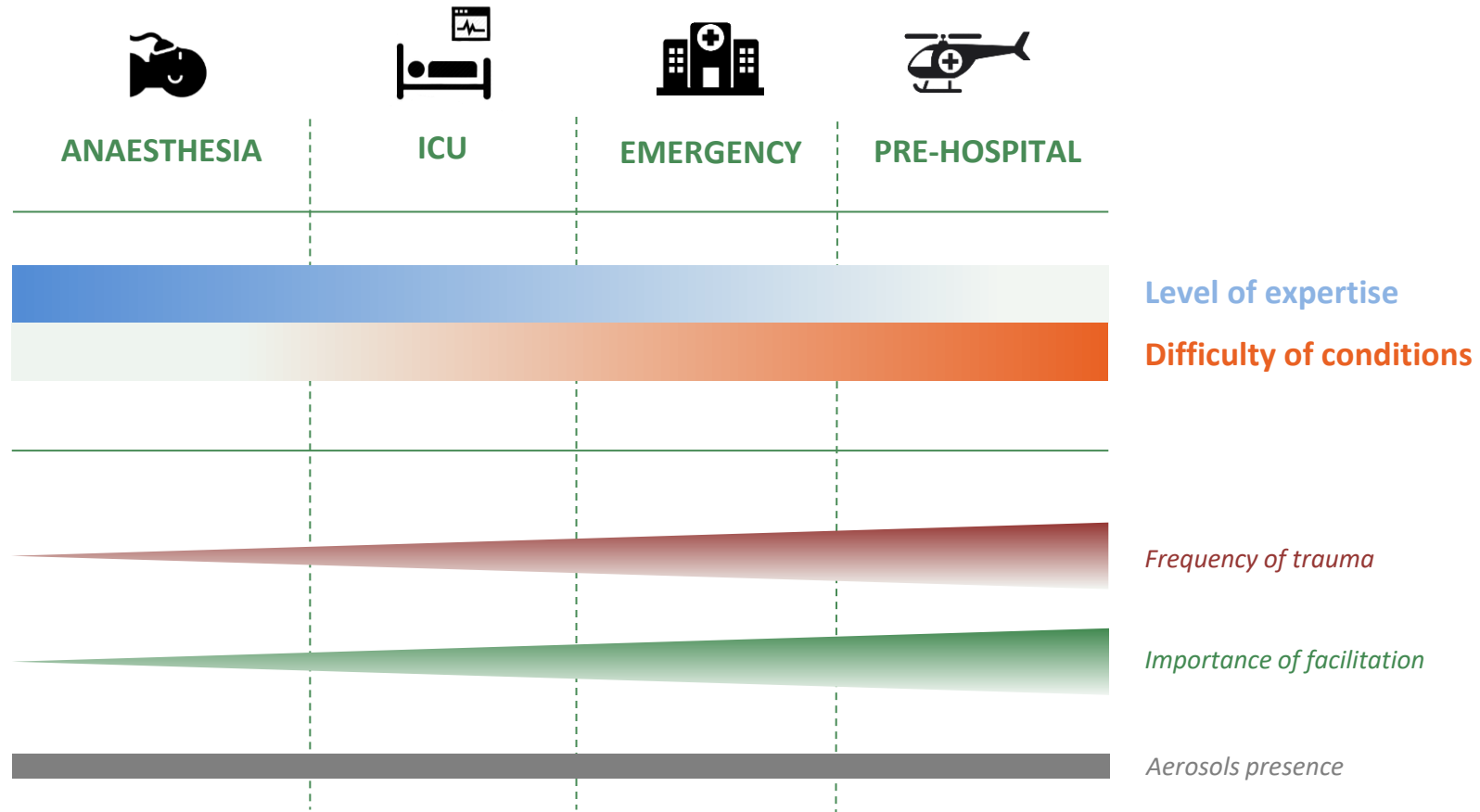
Most cases in  
**Emergency and Pre-Hospital**



**± 100% of ETI are DA**

## ETI – Where is Performed?

Endotracheal Intubation (ETI) is performed during anaesthesia in Operating Rooms (ORs), in Intensive Care Units (ICUs), Emergency Rooms (ERs), and pre-hospital settings. Operators' level of expertise generally decreases outside the ORs, while the difficulty of conditions generally increases, particularly in pre-hospital settings.



**AIRWAY SHIELD™: A novel device to facilitate intubation**



**SOLUTION**



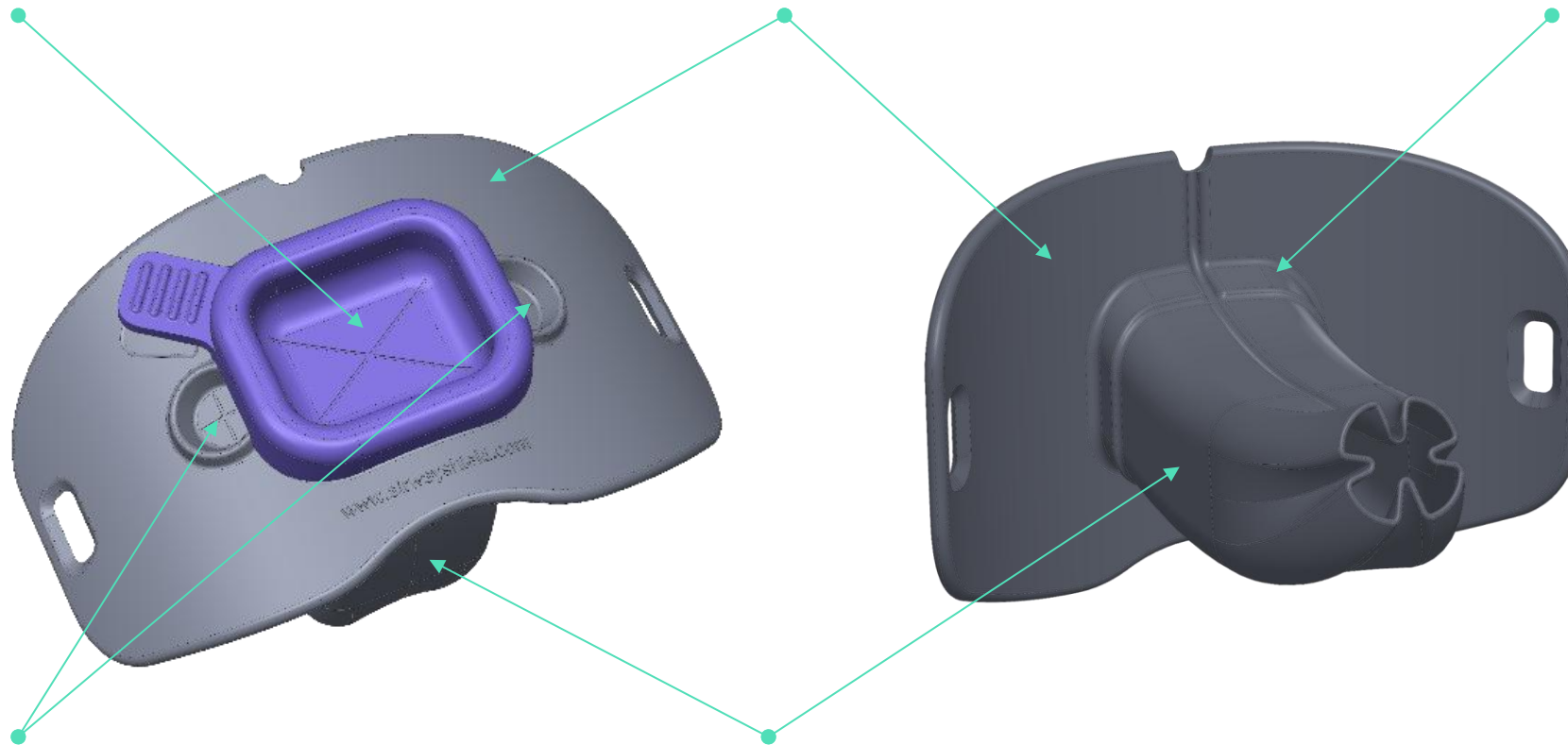
# The SOLUTION for a Safer ETI: Airway Shield™

The world's first device for endotracheal intubation that protects patients from dental and mucosa trauma, clinicians from aerosols, and guides the endotracheal tube easily and simply into the trachea.

Sealed '**Central Opening**' to introduce the laryngoscope blade, followed by the ETT, to perform ETI

The '**Shield**' covers the patient's mouth and protects the operator from infection

A '**Reinforced Area**' also protects the teeth from damage during the ETI procedure



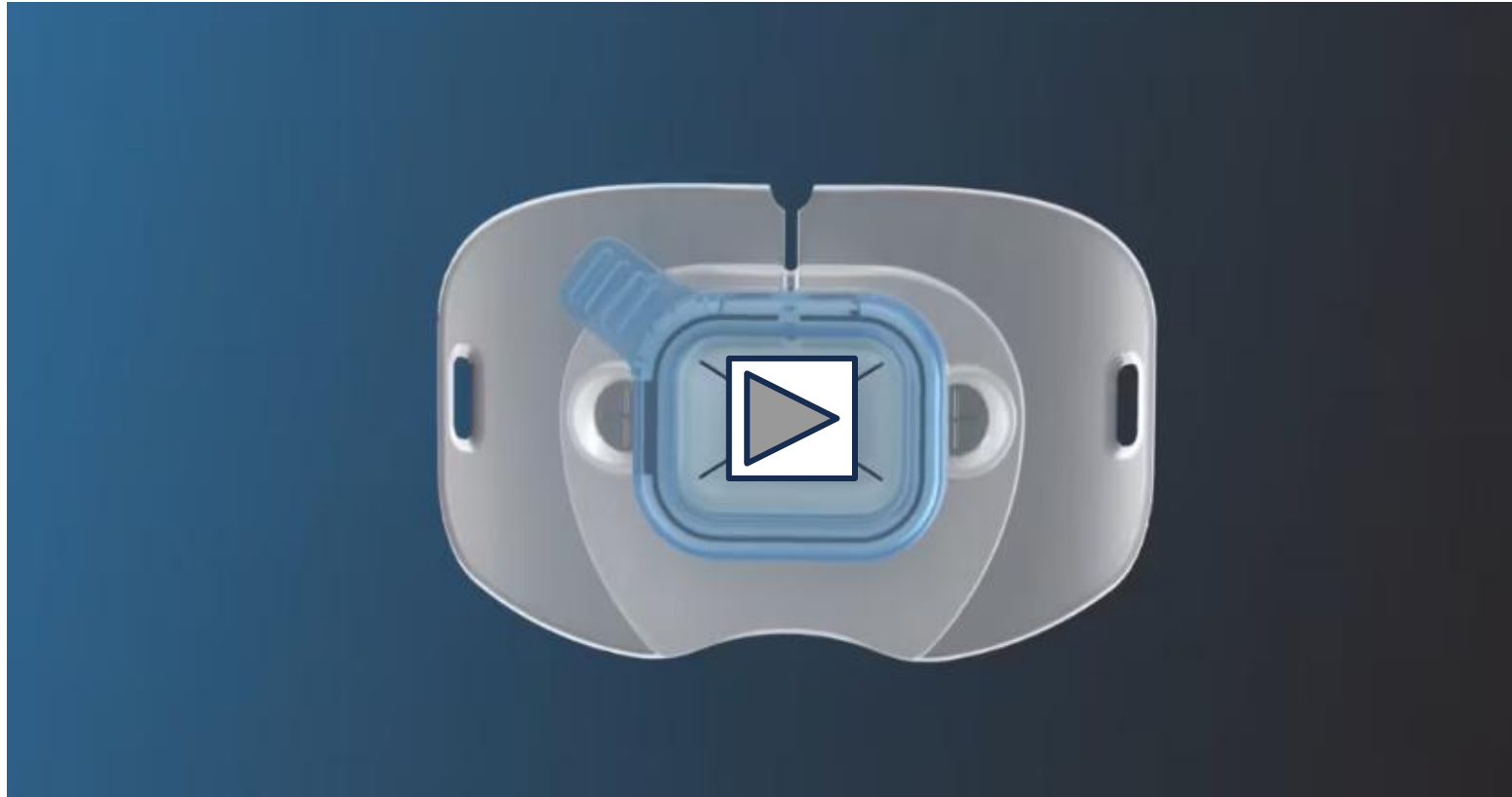
Sealed '**Lateral Openings**' to allow oxygenation and aspiration of secretions and/or aerosols

The '**Guiding-Channel**' facilitates intubation by guiding the endotracheal tube towards the larynx

Shield-Guided Technique™



# The Airway Shield™



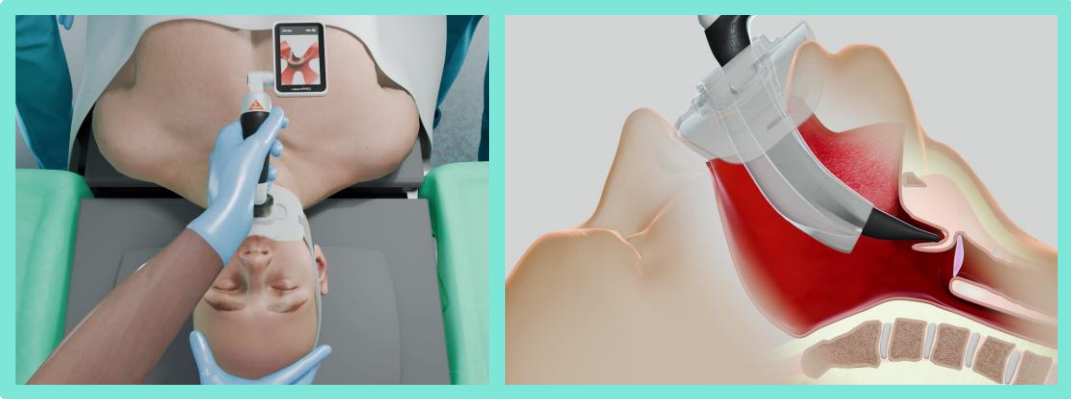
# The Airway Shield™



The simple yet innovative operating mechanism behind the **Airway Shield™** consists in supporting the tongue while creating a pathway for the endotracheal tube (ETT), so it can easily follow the direction set by the laryngoscope blade towards the larynx



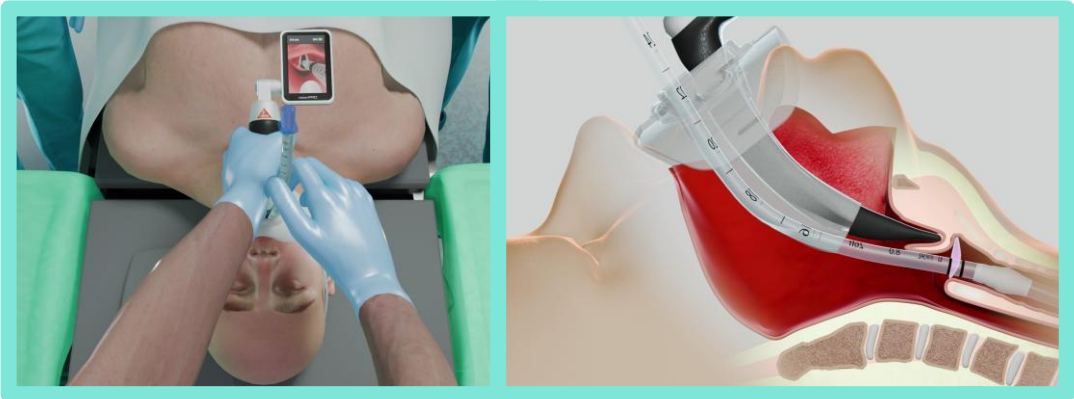
1. Placement of the **Airway Shield™**



2. Introduction of the videolaryngoscope



3. [Ensure correct view of the glottis]



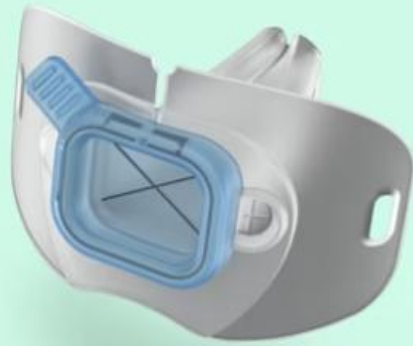
4. Introduction of the Endotracheal Tube



5. Removal of the videolaryngoscope



6. Removal of the **Airway Shield™**



# AIRWAY SHIELD™

INTUBATION MASK



## C-MAC Large Monitor

VIDEOLARYNGOSCOPE

D-BLADE Blade



## Endotracheal Intubation (ETI)

**Airway Shield.** What problem(s) we are solving?

1.

**Complications:  
Adverse Events  
(AE)**

**45% (severe AE)  
in Emergency  
Intubations**

- Death or disability
- Prolonged hospital stays
- Significant patient claims

2.

**Complications:  
Airway Trauma**

**30% of total  
Anaesthetics  
Claims in US**

- Patient pain and discomfort
- Frequent patient claims
- Extra costs for the hospital

3.

**Health Systems:  
High Costs  
Access**

**Prehospital,  
Rural and  
Remote Areas**

- Training costs
- Availability of Highly skilled Specialist
- System access

# The Airway Shield™



Easier, Faster and Safer Intubation



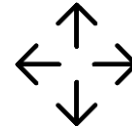
## PATIENT PROTECTION

Protects patient's teeth and mucosa

**Dental injuries** are frequent and much more likely in patients with difficult airway<sup>1</sup>

**Laryngeal injuries** (19-27%), dysphonia (13-60%) and dysphagia (23-33%)<sup>2</sup>.

1. Tan, Y. et al., 2018
2. Kelly, E. et al., 2023



## GUIDED INTUBATION

Reducing intubation time by 50%<sup>3</sup>  
Increases the first pass success

Increasing risk of **bradycardia and desaturation** as time increases<sup>4</sup>

3. Alonso, Jm. et al., 2021
4. Nadler, I. et al., 2016



## CLINICIAN PROTECTION

Protects clinician from infection by decreasing 95% aerosols exposure<sup>5</sup>

**5%** hospitalized patients with COVID-19 were health care providers<sup>6</sup>

Up to **10%** of healthcare workers involved in COVID-19 ETI were infected<sup>7</sup>

5. Alonso, JM. et al., 2022
6. Kambhampati, AK. et al., 2020
7. Weissman, DN. et al., 2020

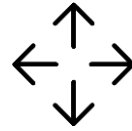
# The Airway Shield™



Easier, Faster and Safer Intubation



**PATIENT  
PROTECTION**



**GUIDED  
INTUBATION**



**CLINICIAN  
PROTECTION**



**Easy to use**

For less experienced operators



**Easy to learn**

Minimal Training required



**Low-cost**

Simple solution to a complex problem.



**Disruptive  
technology**

Revolutionary and innovative desing



**Patented**

Design and method protected by an international patent.

## Additional advantage of the Airway Shield™



**Airway Shield™** reduces Dental Trauma during Endotracheal Intubation, the most common anaesthetic-related medical claim

Dental injuries are the most common anaesthetic-related event reported, accounting for up to 33% of the incidents<sup>1,2</sup>

86% of the injured teeth are the upper incisors, laryngoscopy being the major factor<sup>3</sup>

Dental injuries are much more likely in patients who are difficult to intubate (increasing chances from x3 to x20)<sup>4</sup>

<sup>1</sup> Owen, H. & Waddell-Smith, I. (2000). Dental trauma associated with anaesthesia. *Anaesthesia and intensive care*, 28(2), 133–145. <https://doi.org/10.1177/0310057X0002800202>.

<sup>2</sup> Ranum, D. (2020). Anesthesiology Closed Claims Study. <https://www.thedoctors.com/articles/anesthesiology-closed-claims-study>.

<sup>3</sup> Ansari, S., Rajpurohit, V. & Deo, V. (2016). Dental Trauma due to Intubating during General Anaesthesia: Incidence, Risks Factors, and Prevention. *Oral Health and Dental Management*. 15(6). 377.

<sup>4</sup> Tan, Y., Loganathan, N., Thinn, K. K., Liu, E. H. C., & Loh, N. W. (2018). Dental injury in anaesthesia: a tertiary hospital's experience. *BMC anaesthesiology*, 18(1), 108. <https://doi.org/10.1186/s12871-018-0569-6>

## Changing the intubation paradigm

**Airway Shield™** is a **disruptive technology**. Since the introduction of the laryngoscope in 1943 by Sir Robert Macintosh, there has been no change in the intubation paradigm.

**Sir Robert Macintosh**  
*1943 – Laryngoscope*

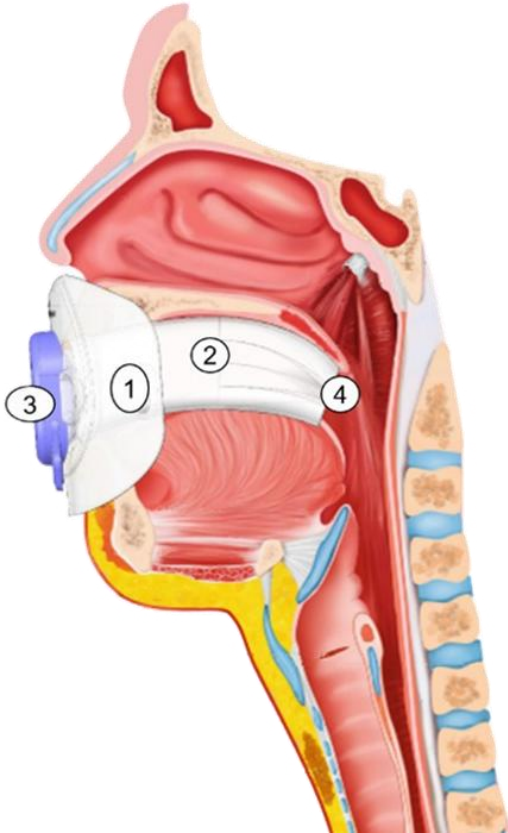


**Macintosh laryngoscope**

For the first time in history, a medical device, **Airway Shield™**, allows successful intubation with the patient's mouth covered.

## The “Ideal” Guide for Intubation

### Airway Shield™



According to Grape & Schoettker, 2017, the “ideal” device as an intubation aid should:

Be inexpensive, readily available, single-use, easy to store and transport, and simple to handle.

Be firm enough to maintain its shape after bending (memory effect), but soft enough not to cause airway trauma.

Allow emergency oxygenation.

Be compatible with videolaryngoscopy.

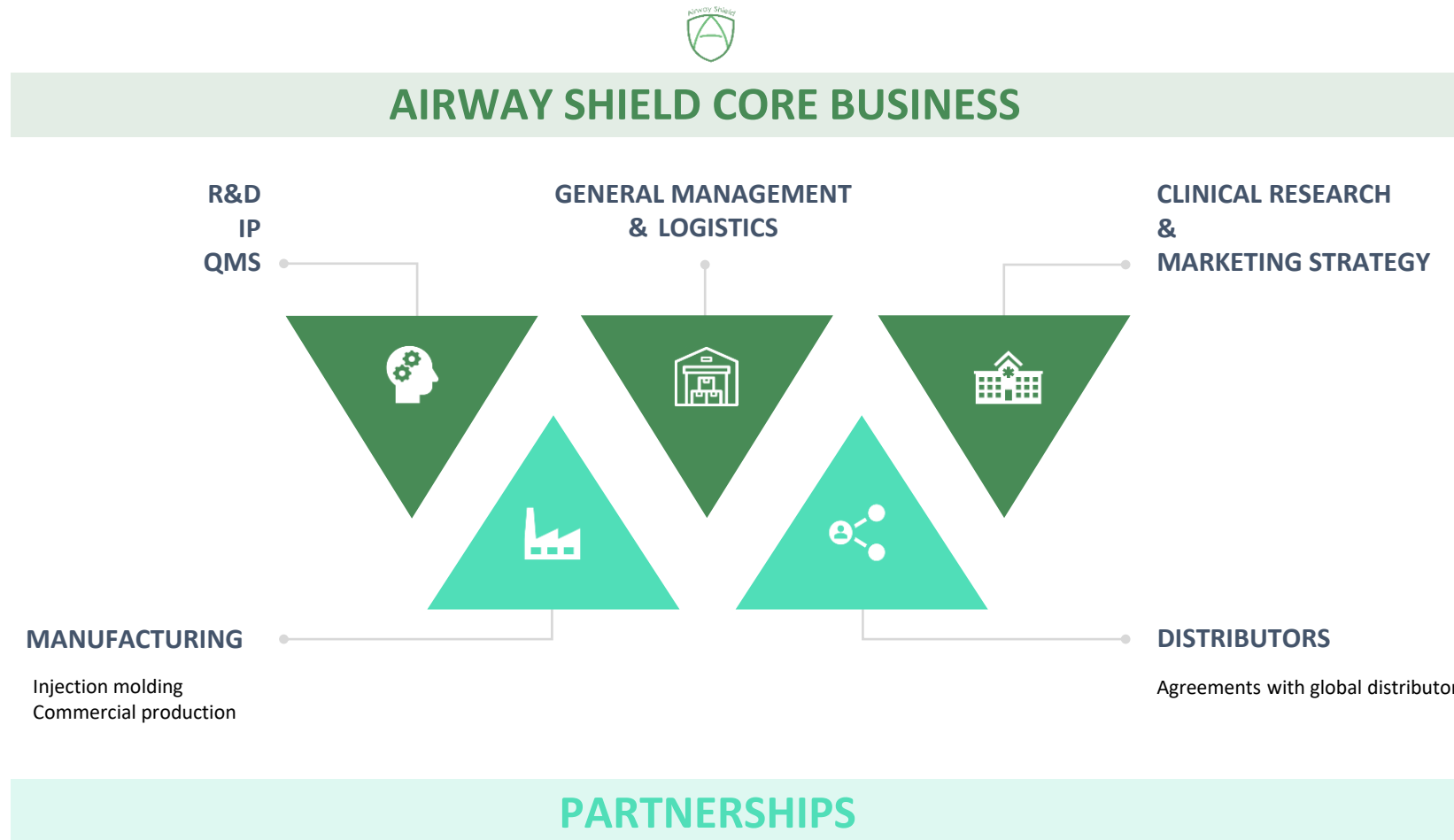
**AIRWAY SHIELD™: A novel device to facilitate intubation**



# BUSINESS MODEL

# Business Model

Airway Shield S.L. follows a B2B model. Our core business is IP management, R&D, Clinical Research and Marketing, and overall management and logistics, while manufacturing and distribution is externalized and tightly controlled by the company under an ISO13485 based QMS.



## DISTRIBUTION AGREEMENTS

INTERNATIONAL TRADE



AWS TEAM



Train the distributor team



DISTRIBUTOR TEAM



Purchasing process  
Marketing and Logistics



## DIRECT SALES

NATIONAL TRADE



AWS TEAM



Train the Sales Delegates  
Clinical sessions  
Marketing and Logistics



Sales Delegates



Purchasing process





# AIRWAY SHIELD™: A novel device to facilitate intubation



IP





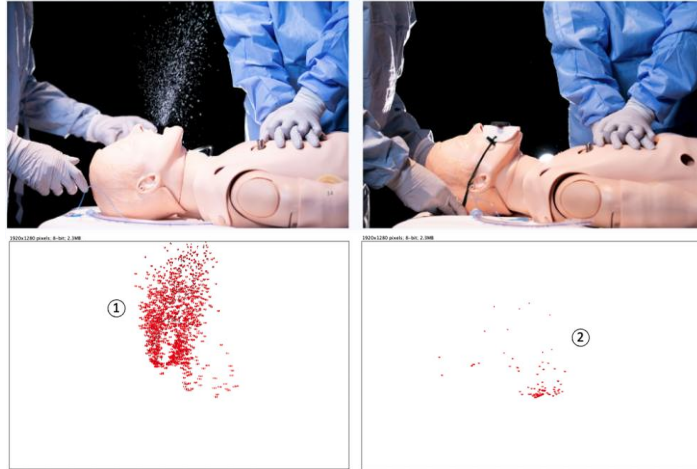
**AIRWAY SHIELD™: A novel device to facilitate intubation**



# CLINICAL STUDIES

# Pre-clinical Studies

## Phase I Aerosol Protection



10168 ± 11600 pixels vs. 509 ± 859 pixels;  $p = 0.014$

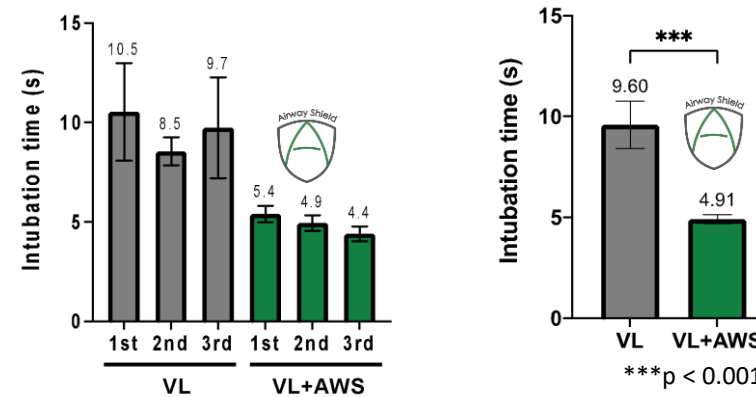
**95%**  
*reduction in exposure  
to aerosols*

Alonso, J. M. et al. (2022). *European Journal of Anaesthesiology*, 39(11), 900-903 <https://doi.org/10.1097/EJA.0000000000001731>

**CLINICIANS PROTECTED**

## Phase II Feasibility of the new technique

Mean duration of each ETI attempt without & with **Airway Shield™**



**50%** *Intubation time reduction*  
**100%** *Intubation success rate*

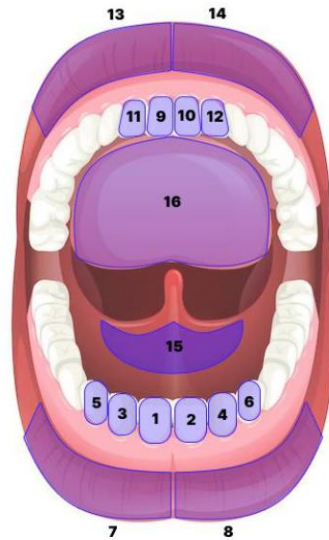
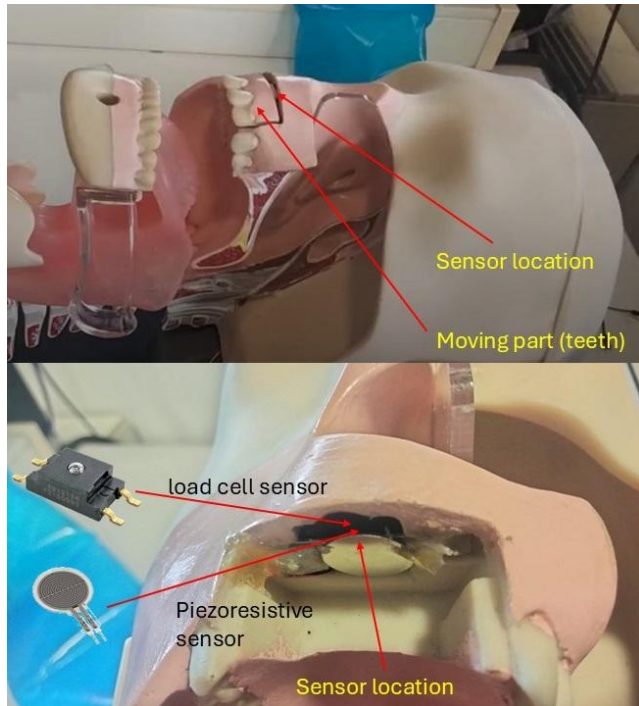
Alonso, J.M. et al. (2021). *Intensive Care Medicine Experimental*, 9(1), 134 (Abstract 000641). <https://doi.org/10.1186/s40635-021-00413-8>

**PATIENTS PROTECTED**

## Pre-clinical Study

### Phase III – Trauma Protection

Sensorized manikin for trauma analysis during ETI: comparison between videolaryngoscopy with and without the Airway Shield™ device.




- **70%** *reduction in the total force applied over the incisors*
- **50%** *Intubation time reduction*
- **100%** *Intubation success rate (versus 80,77% Success rate without the Airway Shield™)*

**PATIENTS PROTECTED**

## Pilot Study in OR

for safety evaluation

**20 Patients**


 Hospital Universitario Marqués de Valdecilla. Santander, Spain



## Comparative Study

vs. Traditional Technique in OR

**102 Patients**

 Hospital Universitario de Araba. Vitoria, Spain



**Airway Shield is Safe and Effective**

for ETI by experience anaesthesiologist in OR

## TESTIMONIALS from Anaesthesiologists involved in the Studies



### Dr Ana Mendiguren

Anaesthesiologist,  
Araba University Hospital, Vitoria

*"Simple, intuitive and easy to use. This device facilitates intubation and protects healthcare professionals against the risk of infection".*



### Dr Mikel Bibanko

Anaesthesiologist,  
Araba University Hospital, Vitoria

*"An innovative device that will be crucial in the protection of healthcare workers".*



### Dr Jon Renteria

2<sup>nd</sup> year resident in Anaesthesia,  
Araba University Hospital, Vitoria

*"A revolutionary idea in the field of safety combined with a technology that is easy to use, even for those with less experience."*



### Dr Fidel de Celis

Anaesthesiologist,  
Araba University Hospital, Vitoria

*"Easy to use, easy to fit and easy to intubate. And at the same time protects against aerosols. Brilliant."*



*Spain, Italy, Sweeden,  
Poland, Brazil and  
Qatar*

## Multicenter Study

## Comparative Study

vs. Bougie and Stylet in OR

**750 Patients**

AIRWAY SHIELD™: A novel device to facilitate intubation



# GLOBAL AIRWAY MARKET

# Global Airway Management Market



## Globally 140,000 Hospitals & health providers

Potential Target Customers and Users of Airway Shield, including Departments of Surgery and Anaesthesia, Emergency Medicine Services, Intensive Care Units, and Pre-hospital Care and Military Services.

*Intubation rate increasing due to aging population, chronic illnesses and increase of emerging respiratory diseases such as COVID-19.*

**3<sup>rd</sup>**

*most common medical procedure  
in hospitals*

**+100 Million**

*Intubations yearly worldwide*

**\$ 2.3 Billion**

*Global Airway Management Market  
value estimation for 2025*

# Airway Management Market

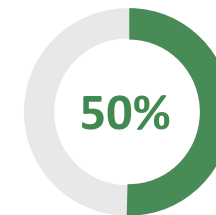
The global airway management devices market is projected to reach USD 2.3 Billion by 2025 from an estimated USD 1.6 Billion in 2018, at a CAGR of 5.6%.

## The airway management devices market segmented by type

AIRWAY MANAGEMENT DEVICES MARKET, BY TYPE	MARKET SHARE, 2018	CAGR (2018-2023)
Infraglottic Devices	32,8%	5,0%
Laryngoscopes	17,2%	10,3%
Supraglottic Devices	25,3%	4,8%
Resuscitators	5,6%	4,0%
Other Airway Management Devices	19,1%	3,2%

**Airway Shield** is the disruptive medical device that will replace all devices used when endotracheal intubation is difficult. This is the case of supraglottic, resuscitation and other devices, which represent 50% of the market share and were born as a response to the difficulty of the endotracheal intubation procedure

The Airway Shield is the ultimate complementary device to be used for all endotracheal intubations





**Competing for 50% of the Global Airway Management Market**



# COMPETITORS

# Direct Competitors



	Airway Shield™	Bougie	Stylet
			
<b>Price</b>	10 €	16 €	4 €
<b>Easy of use</b>	Designed for <b>easy use</b> , even by less experienced practitioners, reducing the skill barrier. <i>(Alonso, JM. et al., 2022).</i>	Simple to handle but <b>requires skills</b> for optimal performance <i>(Jaber et al., 2021).</i>	<b>Requires advanced technique</b> to properly shape and maneuver <i>(Tollman &amp; Ahmed, 2022).</i>
<b>Time efficiency</b>	<b>50% reduction</b> in intubation time <i>(Alonso, JM. et al., 2022)</i>	Increases time	Increases time
<b>Safety</b>	<b>Protects</b> patients' oral mucosa and teeth from trauma and protects clinicians from respiratory aerosols, reducing complications and infection risks. <i>(Alonso, JM. et al., 2021).</i>	<b>Risk of airway trauma</b> , including airway perforation, haemorrhage, and bronchoalveolar injury <i>(Arndt et al., 2008; Grape &amp; Schoettker, 2017).</i>	<b>Risk of trauma</b> , accidental extubation, and other complications like stylet breakage. <i>(Gray et al., 2018; Chalhoub et al., 2013).</i>

**AIRWAY SHIELD™: A novel device to facilitate intubation**



**TEAM**

# Airway Shield Team

Airway Shield Team combines a deep expertise in the medical field with a solid knowledge and experience in quality, commercialization and business development.



**in** **Dr. Julio Alonso, M.D.**  
*Founder and CEO*

Internationally recognised Intensive Care Specialist since 2011, with an extensive expertise in airway management and the development of new medical devices



**Dr. José Medrano, M.D., Ph.D**  
*Director of Clinical Research*

Internist and intensivist trained in Madrid and France, with extensive research experience, publications, and expertise in airway management and critical care.



**in** **Cambell Smith**  
*CPO*

With 20+ years in industrial design, founder of Metric Studio, expert in CAD/CAM/CAE and product development, leading Airway Shield's 3D design.



**Jose Luis Martín, MBA.**  
*CFO*

With extensive experience in biotech, venture capital, and finance. Professor at ICADE and startup mentor.



**in** **Natalia Moracho, Ph.D.**  
*Director of Medical Communication*

PhD in Health Sciences and specialized in Clinical Research. 6 years of extensive scientific background, with several journal publications and MSc in pharmaceutical industry.



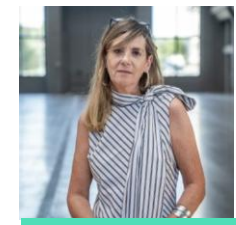
**in** **Joanne Zuo, MBA.**  
*Director of Business Development*

Specialist in transition of innovative MedTech from research to commercialization. Background in go-to-market strategy and global commercialization collaborations since 2018



**in** **Carlota Muñoz, MSc.**  
*Director of Quality and Regulatory Department*

Experienced in Quality Assurance, supplier coordination and scientific research with 4 years experience in Basic Science and quality technician.



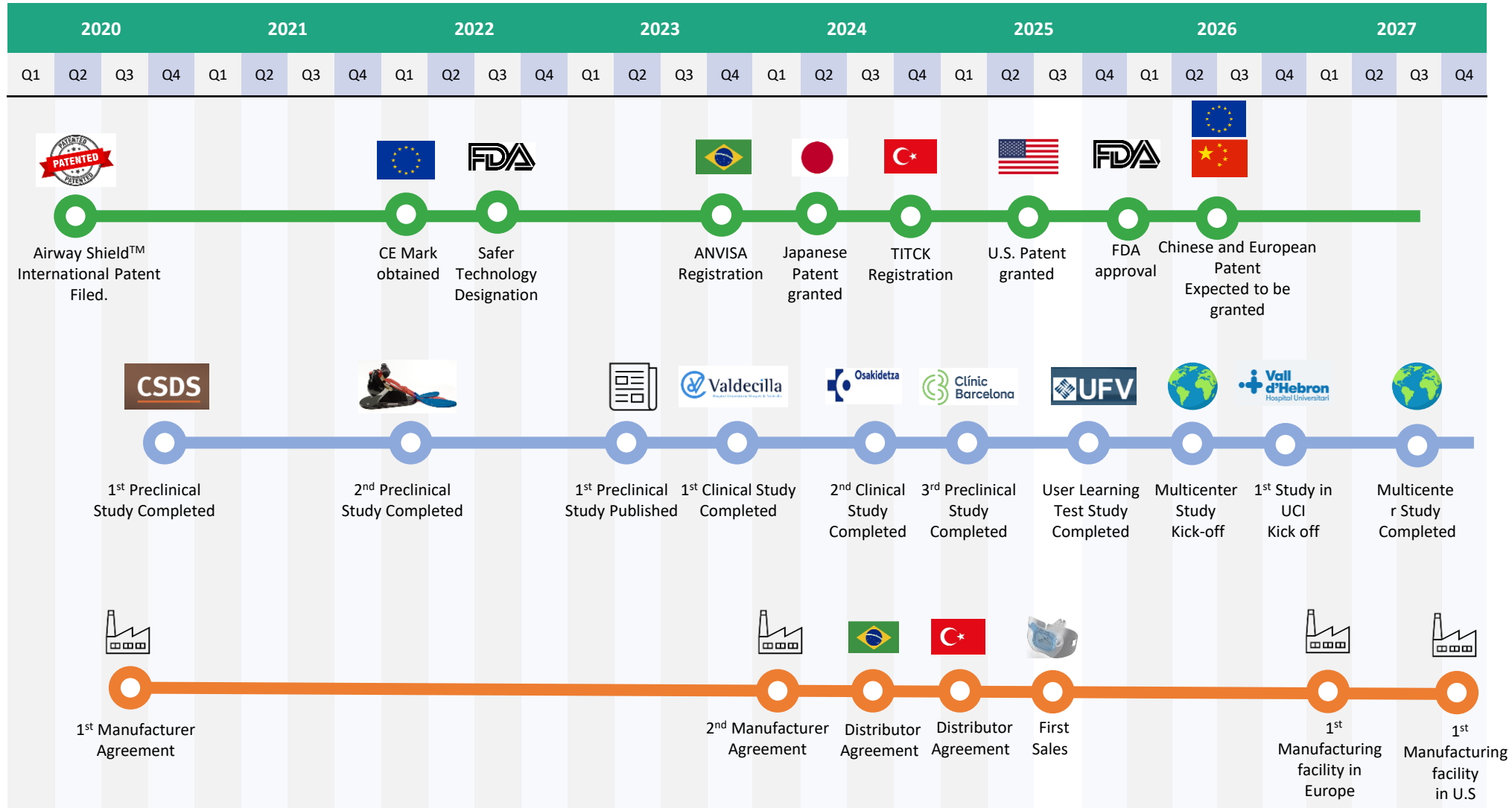
**in** **Nieves Espinosa**  
*Director of Business Management*

Strong background in Corporate Journalism, specialized in communication strategy with hospitals and KOLs



# MILESTONES AND FUNDING

# Achieved and near future milestones



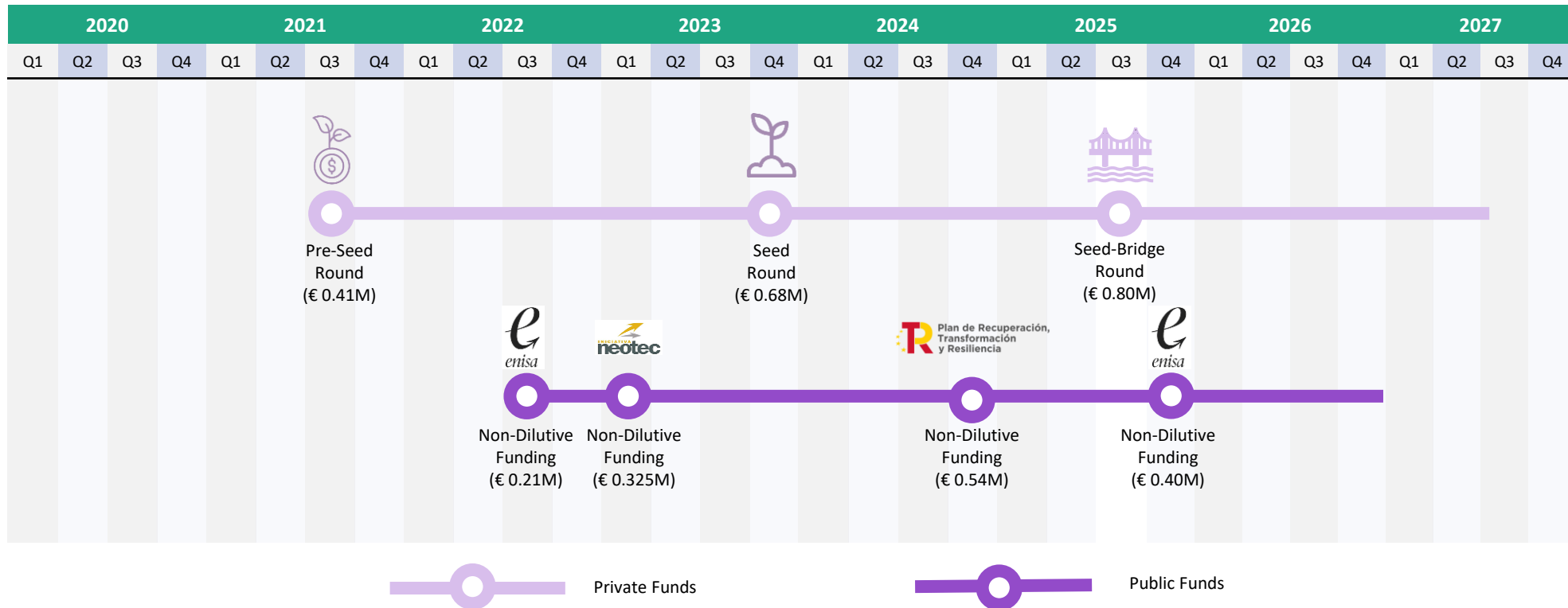
Regulatory and IP Timeline

Clinica Validation Timeline

Manufacture & Distribution Timeline

# Public and Private Funds

June 2020 - December 2027



# Validations



## Public institutions trusted on us



Financiado por  
la Unión Europea  
NextGenerationEU

## Awards

Winners Cantabria 2022



Global Winners 2023



Global Winners 2024





# Validations

## Entrepreneur Events

IV AI-Andalus Innovation Venture Edition (Seville, Spain)

X B-Venture Edition (Bilbao, Spain)

4YFN (Bcn, Spain)



## Acceleration Programs

Healthtech 2023 Program (Boston, US)

AceleraStartup 2024 Program

S2B Health&Care 2024 Program

Lanzadera 2025 Program



## Recognitions

Safer Technology (2023)

BioExpert Network (2023)



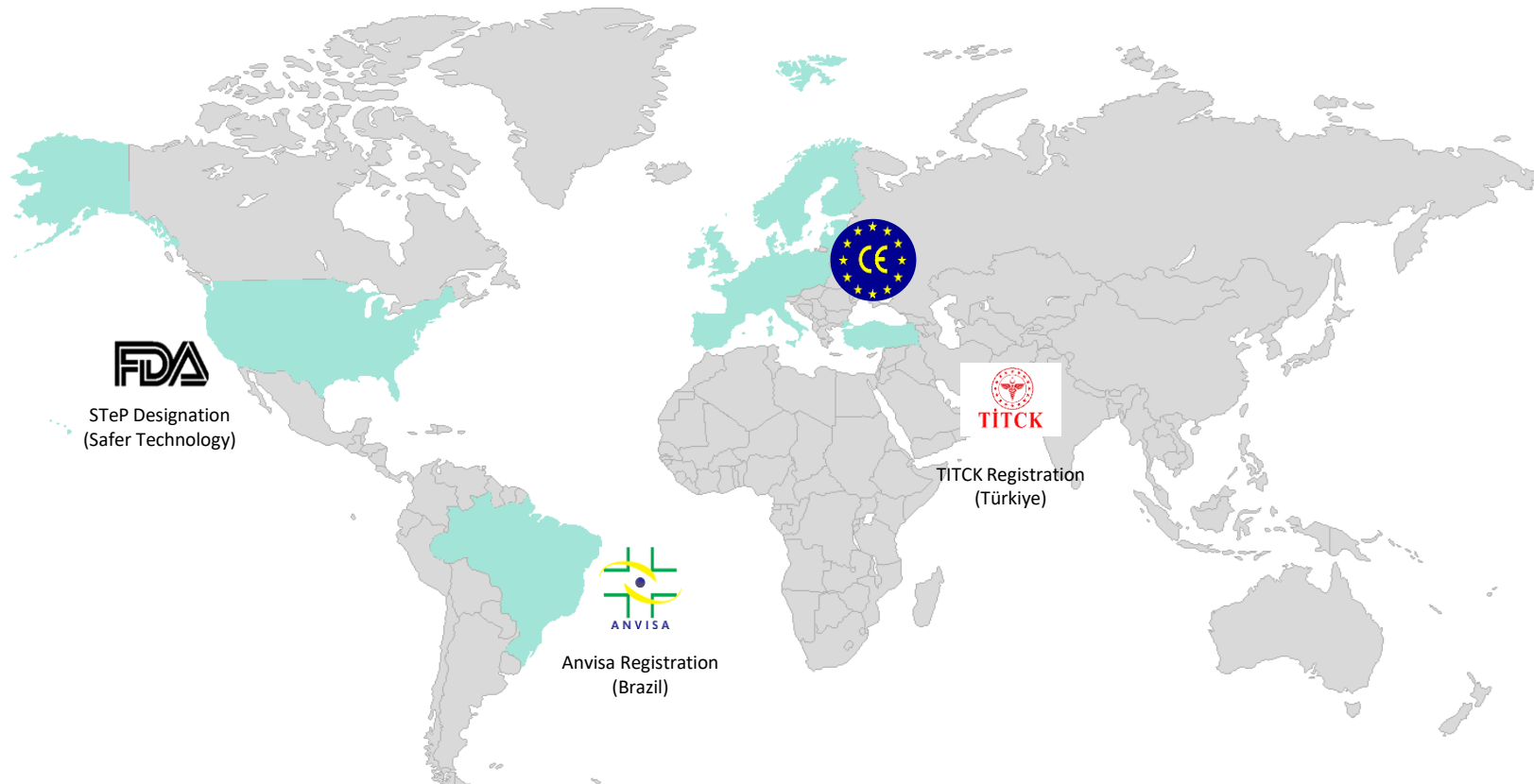


# GO-TO-MARKET AND REGULATORY

## Regulatory Achievements

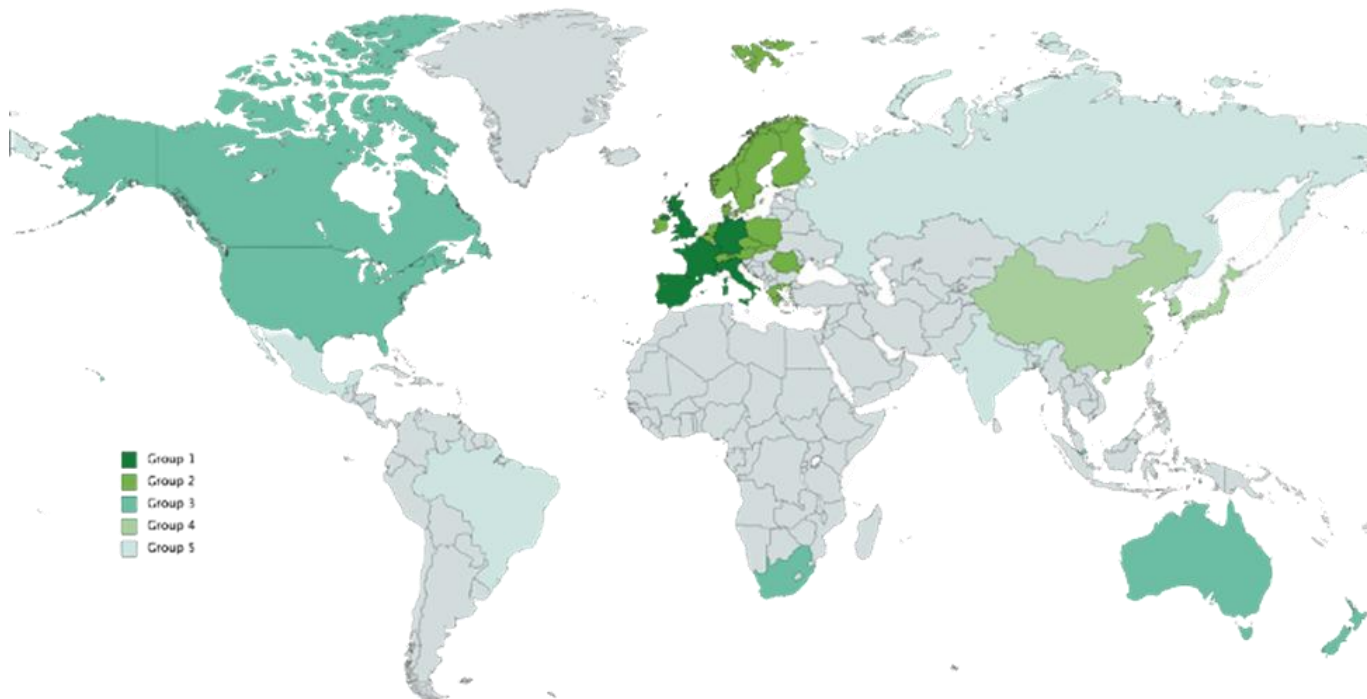


**Airway Shield™** is a device with CE Mark, ready for commercialization in Europe



**Airway Shield™** has received the designation of “**Safer Technology**” by the FDA, which will facilitate the commercialization in US

# Go-to-Market Strategy



Estimated Number of Intubations per group of countries\*

GROUP 1	5.5M / yr
GROUP 2	2.9M / yr
GROUP 3	7.7M / yr
GROUP 4	27M / yr
GROUP 5	31.2M / yr

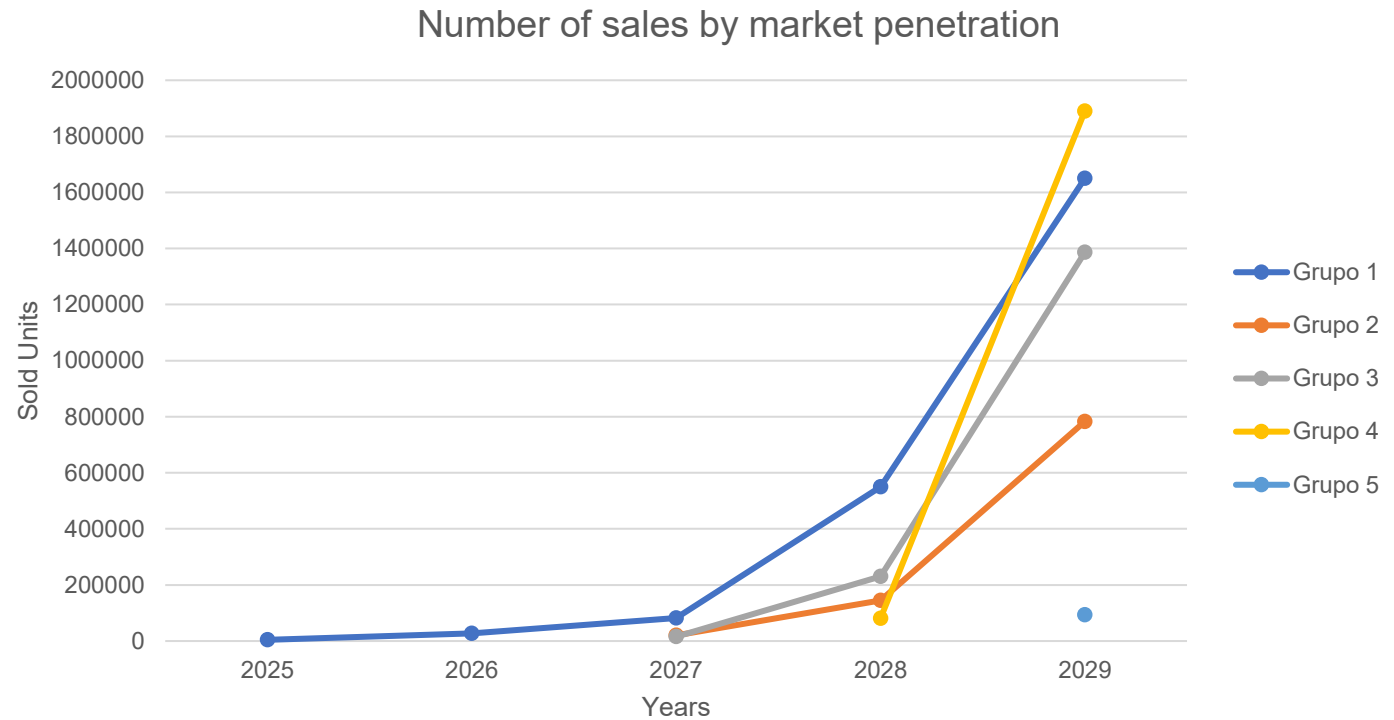
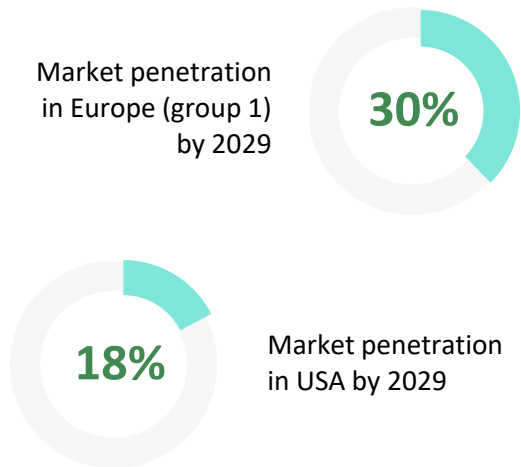
Estimated market penetration in each group of countries over the next 5 years

	2026	2027	2028	2029
Market penetration in Group 1	0,5%	1,5%	10%	30%
Market penetration in Group 2		0,7%	5%	27%
Market penetration in Group 3		0,2%	3%	18%
Market penetration in Group 4			0,3%	7%
Market penetration in Group 5				0,3%

\*According to the 4th National Audit Project, 1.1 million ETI procedures are performed per year in the UK. The total population in UK is 66 million. We extrapolate this proportion to the other countries to obtain the estimate of intubation per year in each country and groups of countries. It is a conservative estimation (based on numbers from 2013).

# Market: Financial Projection

We will achieve 30% market penetration in Western Europe and 18% market penetration in USA by 2029.

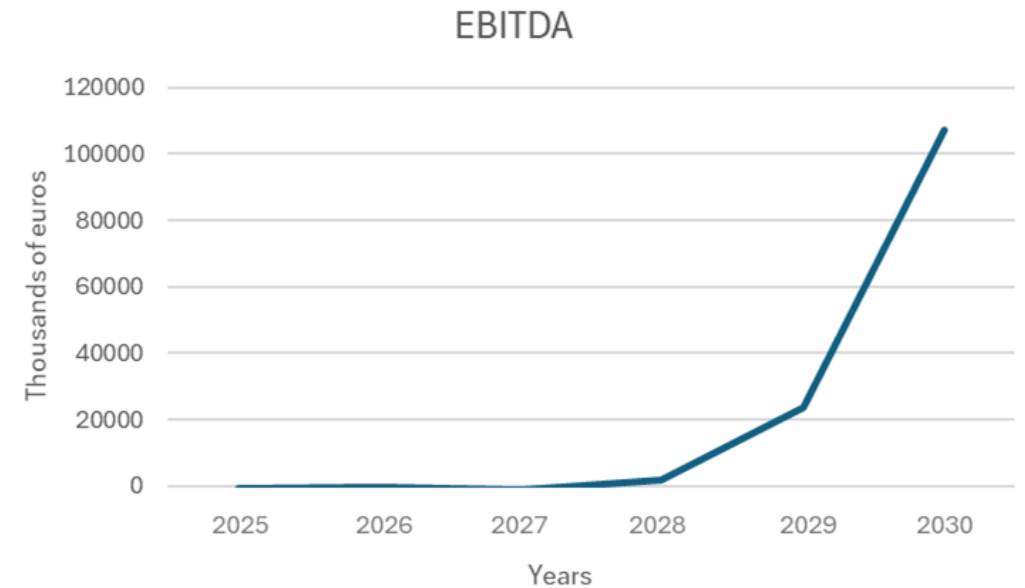


**€38M** Worldwide sales by 2029

## Market: Financial Projection

*We will achieve positive EBITDA and Cash Flow by 2028.*

Figures in thousands of euros	2026	2027	2028	2029	2030
Revenues	189,0	758,7	6.439,2	39.039,6	165.684,1
Expenses	500,4	1.689,2	2.440,4	3.861,5	10.019,4
EBITDA	-96,4	-1.148,3	2.038,6	23.534,5	107.149,7



# Future Roadmap



	2026	2027	2028	2029	2030
Q1	FDA approval Recurrent sales in Spain & Portugal	New Manufacturing facility in Europe New devices ready for regulatory process		Market Launch in the rest of the world	
Q2	Market launch in Europe, rest of Big 5 (DE, UK, IT and FR)	Recurrent sales in Europe 1 <sup>st</sup> sales in U.S Multicenter study completed	Recurrent sales in U.S		Global distribution
Q3		Open Subsidiary in Hong Kong			
Q4	Open Subsidiary in U.S. Market launch in U.S.	Market launch in Asia New Manufacturing facility in U.S.		Continue exponential growth	

## New Developments

### Pediatric sizes

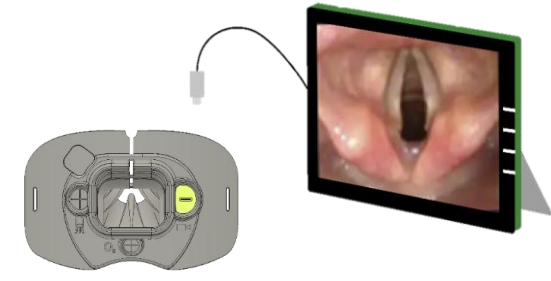


Actual device's size



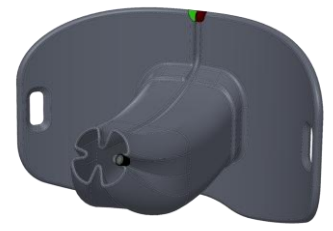
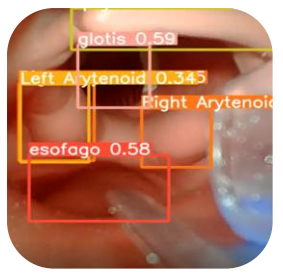
New pediatric sizes

### Video Airway Shield™



An advanced version of the AWS™ that integrates video capabilities, allowing its use with direct vision laryngoscope and making it accessible in any department, even in the absence of a video laryngoscope.

### Airway Shield™ + AI



In combination with our own image recognition software, it will allow to recognize anatomical structures of the airway and thus, confirm the correct placement of the endotracheal tube in real-time.

### Video-AWS-Scope™

This new development takes the Video- AWS™ a step further by providing the ability to direct the ETT without the need for a laryngoscope or videolaryngoscope, making its use universal and independent of complementary devices. It will reduce costs and increase accessibility in healthcare systems.



# NEW FUNDING ROUND

# Funding Rounds

## FFF Round via Capital Cell in September 2021

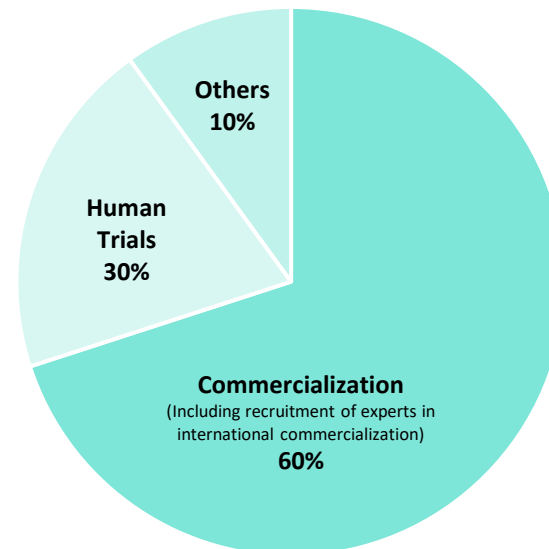
415.000 € raised in less than 24 hours  
Post-money valuation: 2.015.000€

## Pre-Seed Round via Capital Cell in December 2023

680.000 € raised in less than 10 days  
Post-money valuation: 4.680.000€

## Seed-Bridge Round 2026

- ✓ Q1-2 2026
- ✓ Objective:  
Raise **800.000 €**



### 30% Human trials:

- Cost-effectiveness
- Multicenter International Study

### 60% Commercialization

- USA Market Access Studies
- Sales network expansion
- Marketing promotional



# EXIT STRATEGY

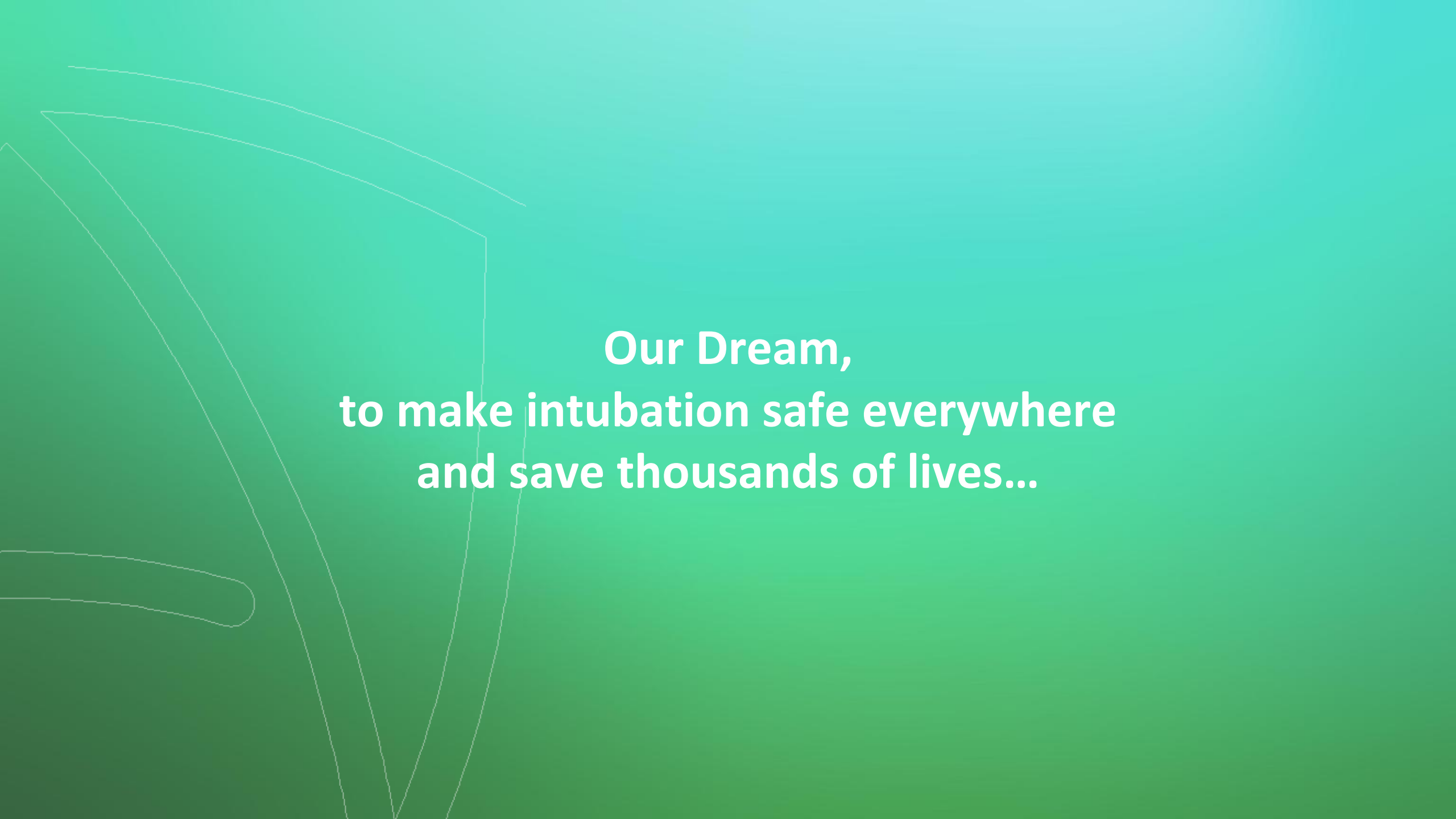
Our exit strategy is an acquisition by a "**major player**" in 2028, or an initial public offering (IPO) for listing on a public market such as Euronext

## POTENTIAL BUYERS

are big players in the airway management market





The background is a solid green color with a gradient from dark green on the left to light green on the right. On the left side, there are several white, hand-drawn style lines that form abstract, curved shapes, resembling a stylized 'V' or a series of overlapping arcs.

**Our Dream,  
to make intubation safe everywhere  
and save thousands of lives...**

The background is a smooth gradient from dark green on the left to light green on the right. On the left side, there are several white, hand-drawn style lines that form abstract, curved shapes, resembling a stylized plant or a series of overlapping arcs.

**... we will reach a Global Impact.**



Safer  
Intubation