HERON

Neutron Medical Corp.

禾榮科技

(7799.TW)

HERON 禾榮科技 Neutron Medical Corp.

Heron Neutron Medical Corp.

2025

Outline

1. Overview of Company
2. Products & Core Technology
3. Management Team
4. Market & Product Competitive Analysis
5. Business Model & Development Strategy
6. Investment Highlights

(7799.TW)

About Us

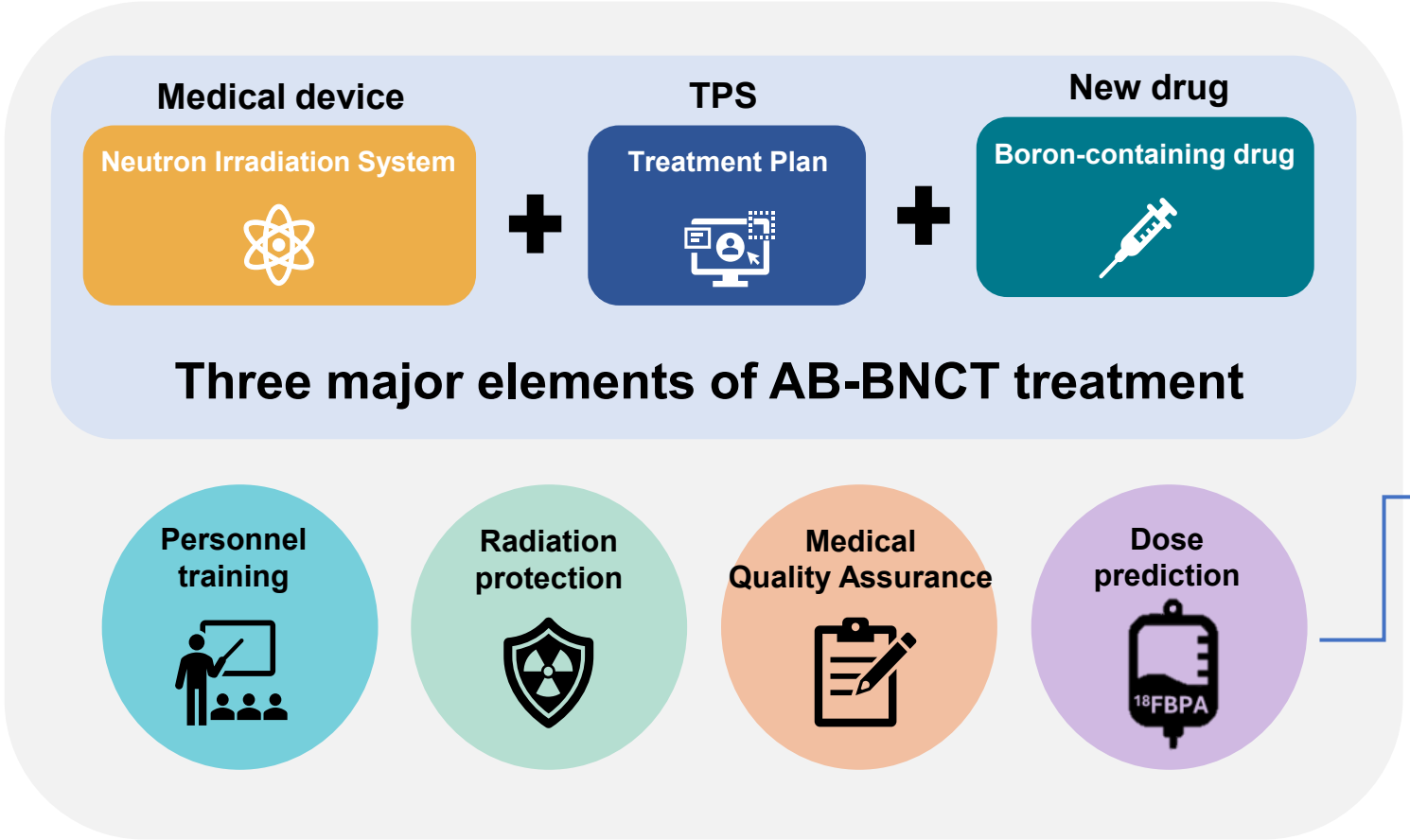
Founded Headquarters	August 8, 2017 No. 66-2, Shengyi 5th Rd., Zhubei City, Hsinchu County, Taiwan (Hsinchu Biomedical Science Park)
Capital	NTD 1,574,465,000
Management Team	Chairman Chin Yung Shu CEO Leo Shen
Employee	90+ (As of 2025/10)
Business	AB-BNCT Total Solution

Product & Core Technology

- Treatment plan：Independently developed by Heron, with our own Monte-Carlo calculation engine, and different from others in the world

- Neutron irradiation system：A large-scale treatment system composed of several subsystems. 90% Independently developed by Heron

- Boron-containing drug BPA： Independently developed by Heron, and has not yet been approved in Taiwan



- 18F boron-containing drugs, a PET diagnostics used for predict of efficacy and dose assessment which has not yet been approved in the world. Heron Proprietary control over key manufacturing processes and precursor patents, actively pursuing regulatory approvals for BNCT drugs

- Personnel training, radiation protection, and medical neutron quality assurance：Enhance BNCT, improve therapeutic effectiveness and quality, and enhance the safety of medical staff and operator personnel

Targeted Heavy Particle Therapy

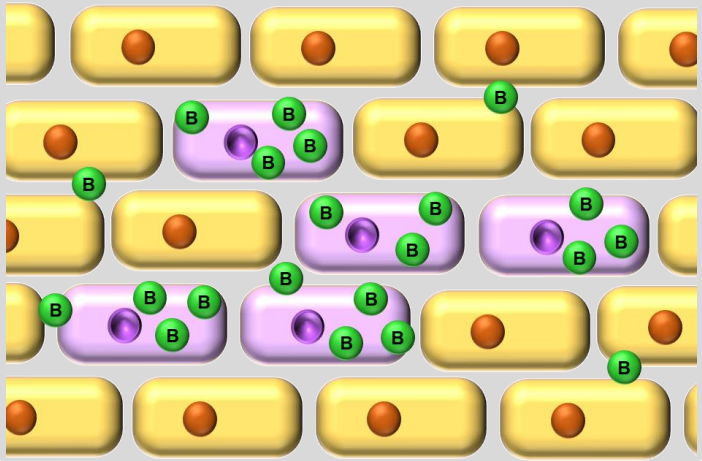
- Surgery
- Chemo - therapy
- **Radio-therapy**
  - Photon
  - Proton
  - Heavy Ion
  - **Boron Neutron Capture Therapy**
- Targeted Therapy
- Immuno-therapy

Boron Neutron Capture Therapy (BNCT) is a therapy that integrates targeted boron-containing drugs with heavy particle treatment principles.

What Is BNCT Treatment

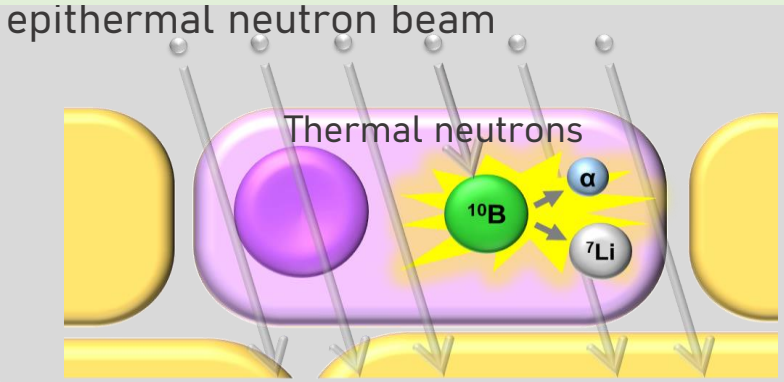
BPA Concentration Tumor/Normal ~3

Boron (^{10}B) containing **drug** such as BPA **accumulates** more in cancer cells



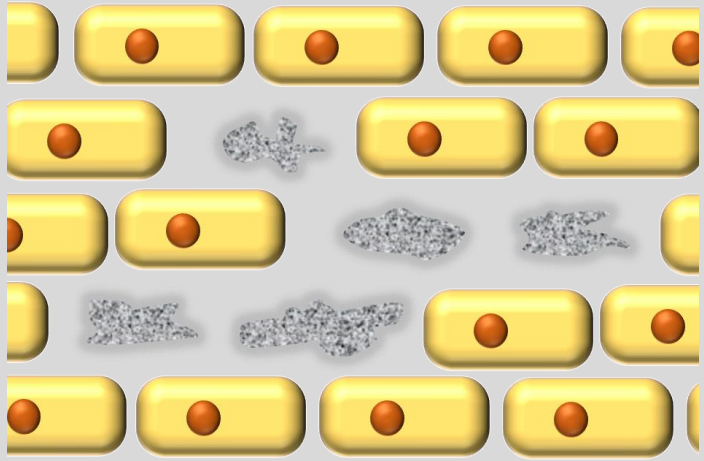
Compound Biological Effectiveness：3.8 for tumor cell; 1.3 for normal cell

Epithermal neutrons will be **slow down** to thermal neutrons and **interact with ^{10}B**, produce **α and Li particles**. Energy will be deposited in **short range**.



Boron Dose of tumor/normal cell ~9

This will result in **double strand break of DNA**.
The damage of normal tissue is **small**.

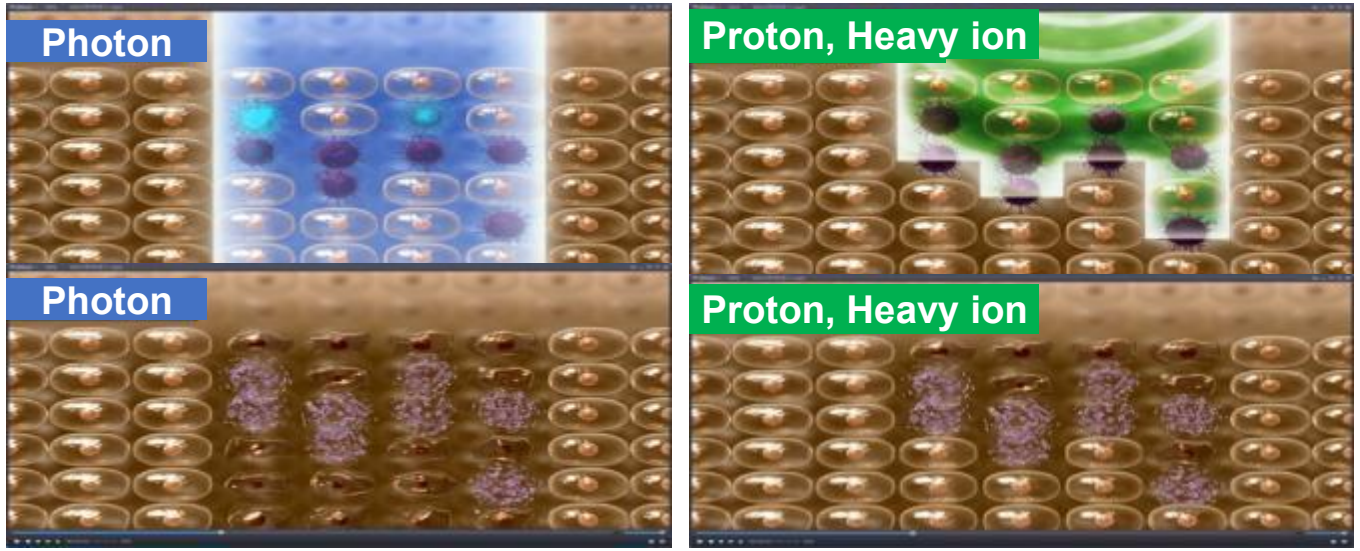


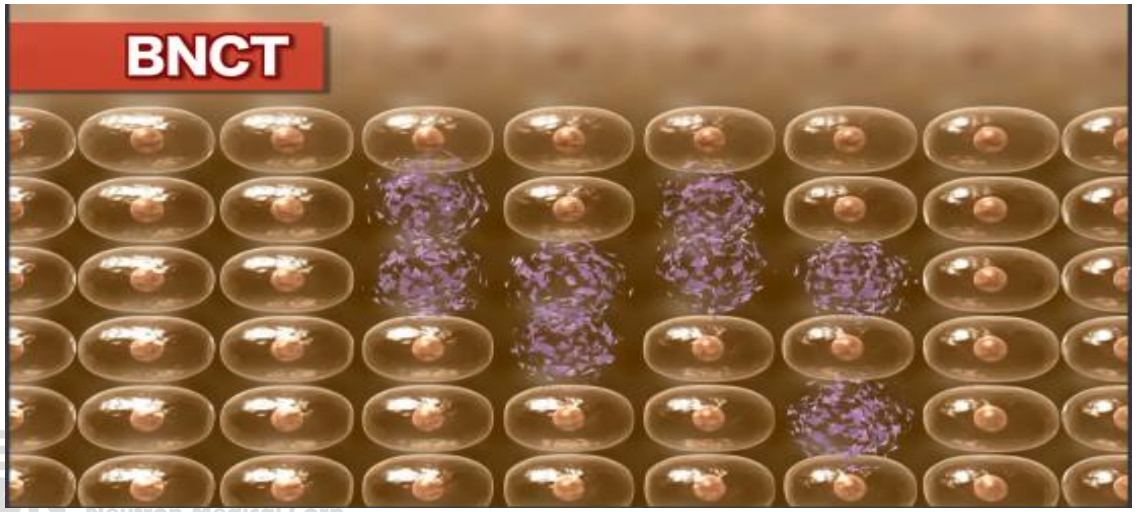
The structure of BPA is similar to phenylalanine, therefore will be preferentially absorbed by cancer cell

Why BNCT?

Conventional Radiotherapy:

- Relies solely on physical energy to kill tumor cells.
- Causes varying degrees of damage to surrounding healthy tissue.





BNCT

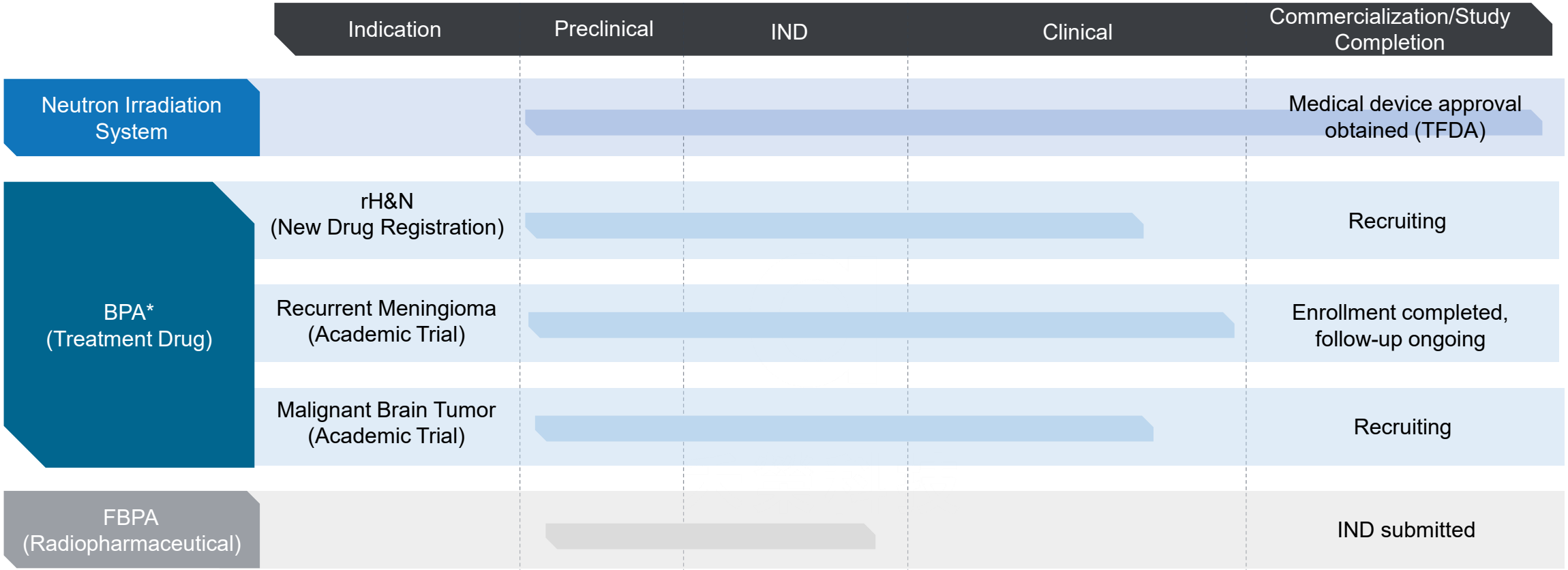
- Selectively targets tumor cells via drug delivery.
- Radiation energy is released within tumor cells, better protecting healthy tissue.

From Kyoto University, 2010

Market Positioning

Item	Conventional Radiotherapy (Photon)	Proton/Heavy Ion Therapy	Boron Neutron Capture Therapy (BNCT)
Tumor Selectivity	Difficult to distinguish between normal cells and tumor cells	Difficult to distinguish between normal cells and tumor cells	Has **biological targeting** specificity, can precisely localize tumor cells
Indications	Applicable to nearly all types of cancer	Pediatric, skull base and central nervous system tumors, prostate cancer, liver cancer, lymphomas, sarcomas, etc.	Recurrent tumors, refractory tumors, radiation-resistant tumors, skull base and deep-seated tumors
Side Effects	High	Moderate	Low
Number of Treatments	Many (25~35 fractions)	Moderate (10~30 fractions)	**Few (mainly 1~2 fractions)**
Treatment Cost	Covered by National Health Insurance (~NT$200k≈USD$6,700)	~ NT$600k-1,400k≈USD$20k–47k	~ NT$1,000k≈USD$33k/section
Predictable Treatment Outcome	Not predictable	Not predictable	Predictable through positron emission tomography (PET) to estimate boron distribution
Facility Space Requirement	Area~ 100 m² Height~ 3 m	**Large scale proton/heavy ion:** Area~ 3000 m² - 6000 m² Height~ 10 m - 15 m **Small scale proton/heavy ion:** Area~ 200 m² - 500 m² Height~ 9 m - 10 m	Area~ 350 m² Height~ 4 m
Hospital Construction Cost	~NT$0.5-1.5B≈USD16-47M	~NT$1.4-4.5B≈USD$44-141M	~NT$1.2B≈USD$38M
Current Number of Facilities in Taiwan	~141	Heavy ion in operation：1 Heavy ion under construction：2 Proton in operation：4 Proton under construction：9	In operation： 1 Under construction： 2

Product Develop Progress



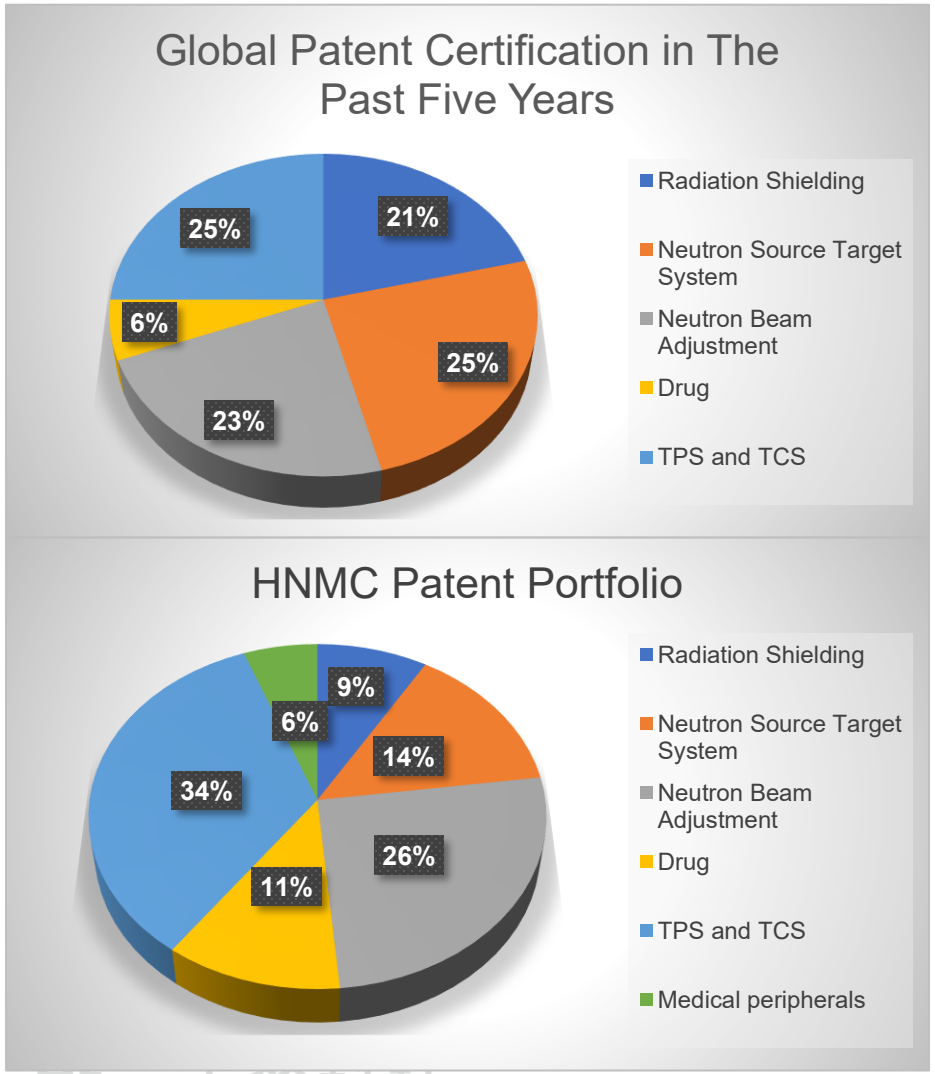
- **Parallel Academic Trials:** Multiple academic clinical trials are being conducted simultaneously to **accumulate key reference data for off-label use.**
- **Development Strategy:** Focus on the indication with the most extensive data; after obtaining the first regulatory approval, **expand to other indications.**
- **Indication Expansion:** BNCT indications are continuously being developed and expanded, not limited to head and neck cancers.
- **Strategic Advantage:** Leveraging existing data rather than starting from scratch is expected to accelerate regulatory approval and reduce clinical costs and timelines.

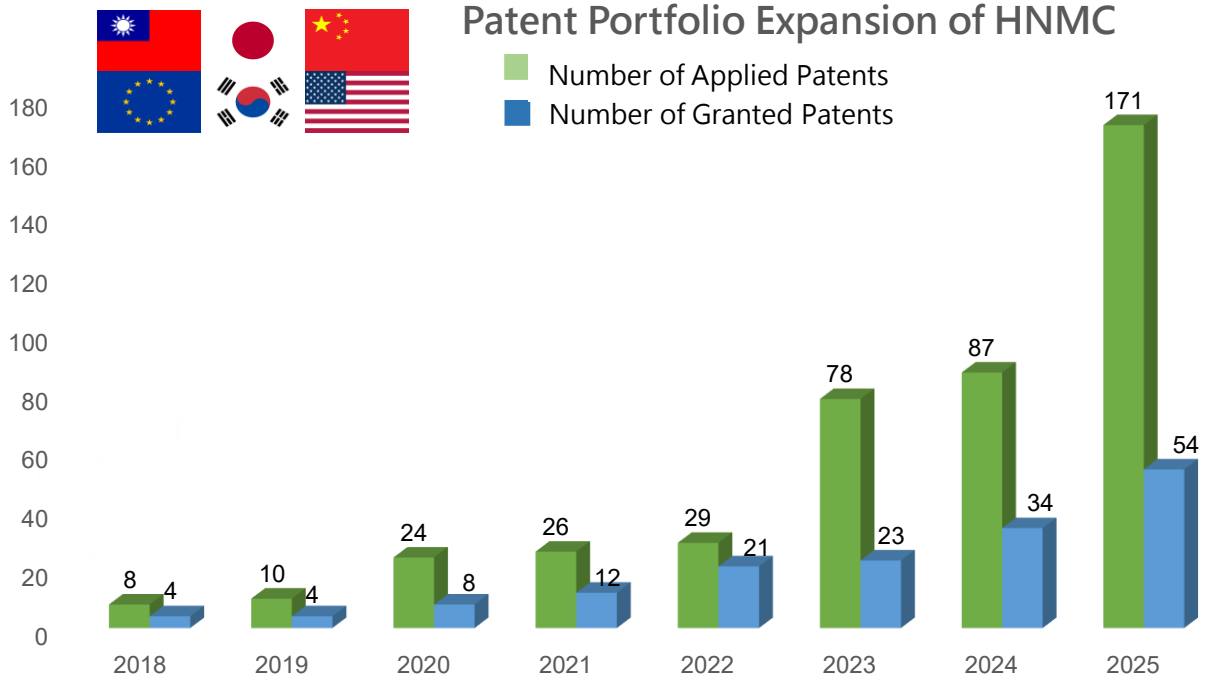
Clinical & Compassionate Treatments

Indication	
H&N	recur. Meningioma
	Diffuse Intrinsic Pontine Glioma (DIPG)
	recur. Brain Tumor
	recur. H&N Cancer
	recur. Chordoma
	Mesenchymal Chondrosarcoma
Thoracic tumors & others	recur. Lung Cancer (SCC)
	mets. Lung Adenocarcinoma (H&N)
	recur. Triple-Negative Breast Cancer
	mets. Breast Cancer (Brain)
	recur. Anaplastic Thyroid Carcinoma
	recur. Undifferentiated Pleomorphic Sarcoma (UPS)
	recur. Osteosarcoma
	Melanoma
	recur. Vulvar Carcinoma (Squamous-Cell Carcinoma)
	Malignant Peripheral Nerve Sheath Tumor (MPNST)
	Malignant Mesothelioma

As of Oct. 31, 2025	
Patients	86
Treatments	130

Patent Portfolio





- Our patent application volume has grown significantly this year.
- The strongest growth came from treatment planning (control) systems, achieving the short-term targets set earlier this year.
- Mid- to long-term goals focus on **sustaining growth across all patent categories** and shifting from quantity-driven filings to a more strategic, market-oriented patent roadmap aligned with technology gap analysis.
- This year, the company will continue to expand filings in: TPS and TCS, Drug, Radiation shielding, Neutron source target system, and Medical peripherals.
- **Patents grant: 54 (including 21 granted this year)；Patent application: 171**

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Management Team

Chairman

Chin Yung Shu

Heron Neutron Medical Corp.
Chairman

PRESENT POSITION：

- Vice Chairman of Hermes-Epitek Corp
- Chairman of Huntertex Corp.
- Chairman of Shinyu Light Co., Ltd.

EXPERIENCE：

- Vice President of Taiwan Semiconductor Manufacturing Company Limited (tsmc)
- General Manager of United Microelectronics Corporation (UMC)
- Chairman of Hermes Microvision Corp. (HMI)
- President of Hermes-Epitek Corp.

EDUCATION：

- BS in Electrical Engineering, National Chiao Tong University
- MS in Optoelectronics, National Chiao Tong University

General Manager

Leo Shen

Heron Neutron Medical Corp.
General Manager

PRESENT POSITION：

- Executive Assistant to Chairman of Hermes-Epitek Corp.
- General Manager of Heron Neutron Medical Corp.
- CFO of Chu-Ming Medical Foundation
- Chairman of Genese Intelligent Technology Co., Ltd.
- Chairman of NDV Therapeutics Corp.
- Chairman of Energic Technologies Corp.
- Director of GlintMed Innovation Co., Ltd.
- Director of High Power Opto. Inc.
- Director of 3R Life Sciences Taiwan Ltd.
- Director of Hepius Care Inc.
- Director of Voltraware Semiconductor Co., Ltd.
- Director of Helios Bioelectronics Inc.
- Director of Swiroc Corp.

EXPERIENCE：

- **2016-2019** ASML Taiwan management team
- **2016-2019** Person in charge of merger of HMI and ASML and post-merger integration
- **2012-2016** General Manager, CFO, and Spokesman of Hermes Microvision, Inc. (HMI)
- **2012** HMI IPO & GDR
- **1997-2005** PwC Accountant-Audit and Internal Control, Manager of Computer Audit Department of PwC Taiwan

EDUCATION：

- EMBA, National Chiao Tong University
- BS in Accounting, Tunghai University

管理團隊

Rich Sun
Center Manager
Supply Chain Management

Andre Lin
Center Manager
Clinical Medicine

Henry Chen
Center Manager
Research & Engineering

Vincent Wang
CFO/Center Manager
Operation Managing

Will Lee
Center Manager
Business Development

HERON 禾榮科技 Neutron Medical Corp.

Market & Product Competitive Analysis

Market Competition Overview

Domestic / International	Company	Neutron Irradiation System	Treatment Planning System	Boron Drug	Radiopharmaceutical	Medical device / Drug approval
Domestic	HERON	Independent development	Independent development	Independent development -> CDMO	Independent development-> CDMO	TFDA
	Company G	-	-	V	-	-
International	Company A	Independent development	Adopting third-party calculation engine and TPS interface	Provided by a third party	-	PMDA
	Company B	Independent development	Independent development	-	-	-
	Company C	Independent development	-	-	-	-
	Company D	Independent development	Independent development	Provided by a third party	Provided by a third party	-
	Company E	Independent development	Adopting third-party calculation engine and TPS interface	-	-	-
	Company F	Independent development	Adopting third-party TPS interface	-	-	-

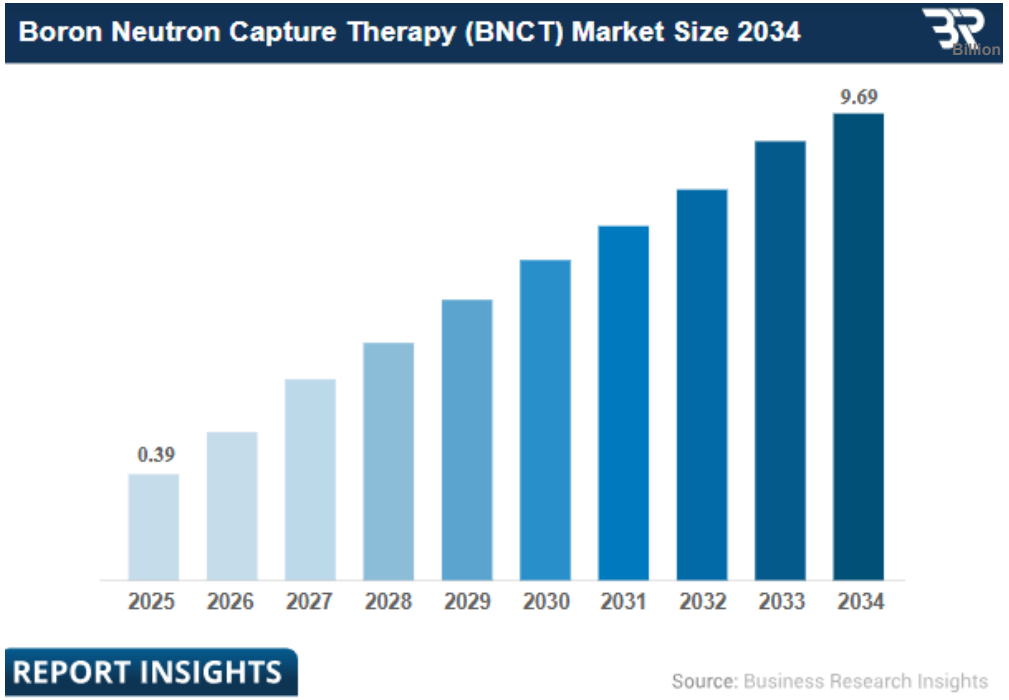
Competitive Landscape

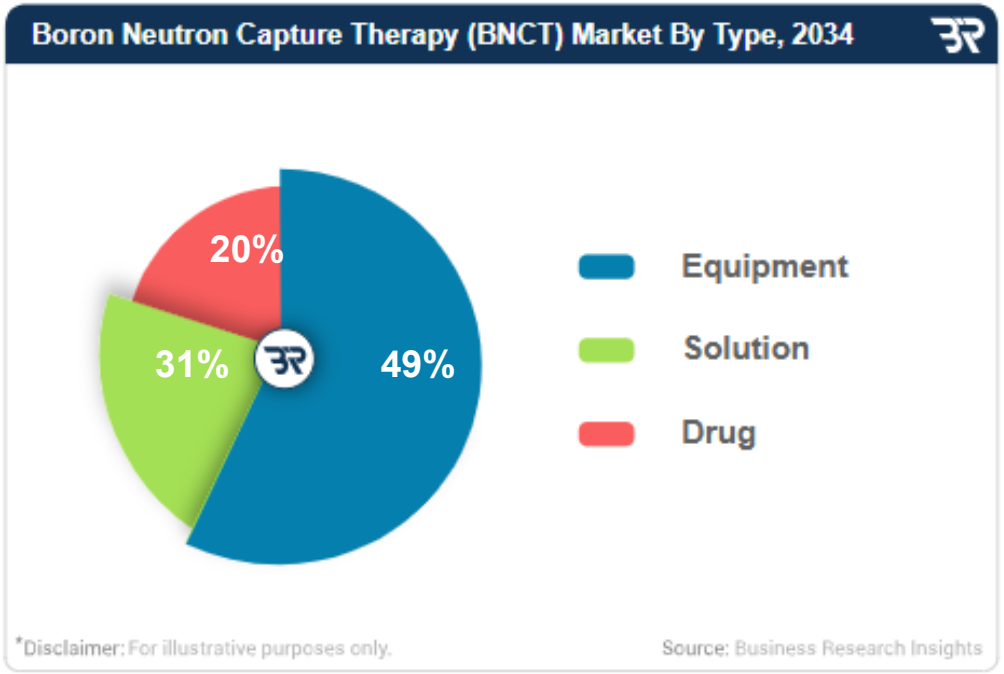
Melting Point Be：1278 degrees Celsius
Li： 180 degrees Celsius

	HERON Neutron Medical Corp.	Company A	Company B	Company C	Company D	Company E	Company F
Target	Be	Be	Be	Li	Li	Li	Li
Accelerator	**Cyclotron**	**Cyclotron**	**RFQ+DTL**	**RFQ**	**Electrostatic (Tandem)**	**Electrostatic (Single-ended)**	**Electrostatic (Tandem)**
Proton Current (mA)	**0.25**	1	2	20	8	30	10
Proton Energy (MeV)	30	30	10	2.5	2.3	2.6	2.5
Power (kW)	**7.5 (Lowest cost)**	30	20	50	18.4	78	25
Epithermal Neutron Flux (1×10^9 n cm^{-2} s^{-1})	1.24	0.7	1.03	0.73	0.9	1.4	>0.6
Proton Efficiency (10^9 Neu Flux/mA)	**4.94 (Highest efficiency)**	0.7	0.52	0.04	0.08	0.04	0.06
Regulatory approval	TFDA (1st and only in TW)	PMDA	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Decay time of radionuclide	**10 min**	> 2 hours	--	--	--	--	--
Capacity (patient/day)	**6 (Highest turnover rate)**	2	--	--	--	--	--

Global BNCT Market Opportunity:
USD 9.69 Billion by 2034

- **Market Size & Growth:** According to **Business Research Insight**, the global BNCT market is estimated at **USD 390 million in 2025**, with a projected **CAGR of 43.3%**, reaching **USD 9.69 billion by 2034**.
- **Market Drivers:** Strong clinical demand, technological breakthroughs, and supportive policies and market trends.
- **Market Segmentation:** BNCT **equipment** accounts for approximately **49%** of the market, **solutions** (dose calculation, treatment planning, monitoring, etc.) account for **31%**, and **drugs** account for **20%**.





*The target market is currently limited to head and neck cancers and brain tumors.

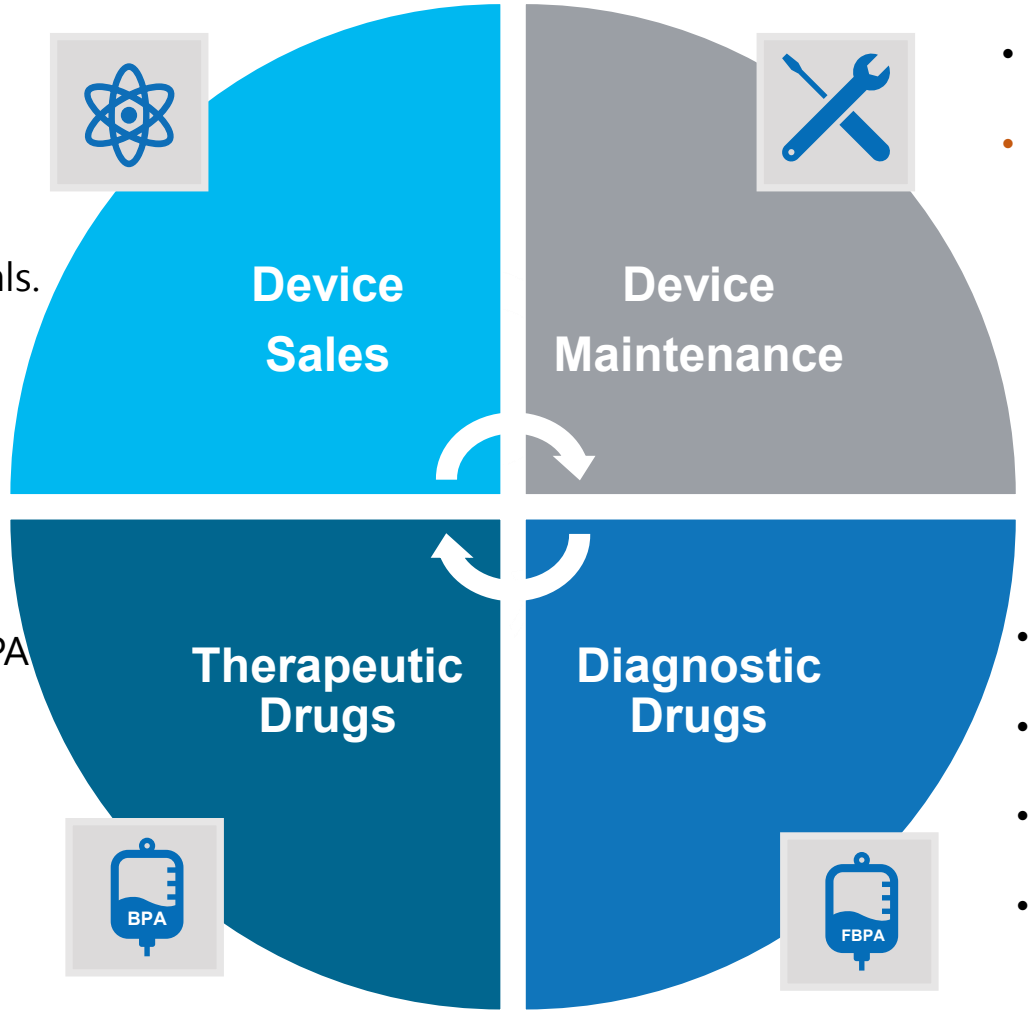
Source：Business Research Insights

HERON 禾榮科技 Neutron Medical Corp.

Business Model & Development Strategy

Business Model

- Buyout：**USD 40–55M/unit**
- Leasing/BOT/Profit Sharing
- Installed / Under Construction / Contracted: **3 units***
- Negotiations ongoing with 4 domestic and 2 international hospitals.



- Fixed annual maintenance cost of radiotherapy equipment:
- **5%~9%** of equipment sales price

- Provide AB-BNCT therapeutic drug BPA
- Average Cost: **~TWD 400k/patient** (based on 60 kg body weight)**
- Current Status: **Ongoing clinical trials and compassionate use programs**
- Once regulatory approval is granted, the drug can be independently marketed and commercialized.

- AB-BNCT Pre-Treatment Diagnostic Drug: FBPA
- PET Diagnostic Cost: **~TWD 40k–80k/patient**
- Clinical Trial expected to commence in Q4 2025
- Once regulatory approval is granted, the drug can be independently marketed and commercialized.; **expected usage volume significantly higher than therapeutic drug**

*China Medical University Hsinchu Hospital/Taipei Veterans General Hospital/BenQ Medical Center
**With reference to Japanese pricing

AB-BNCT Commercialization Momentum

Growth Drivers

Patient, Physician, and Hospital Demand Drivers

- **Treatment Advantages** :
  Low treatment frequency (1–2 fractions), minimal side effects
- **Patient Demand Drivers** :
  Increasing patient awareness and **proactive inquiries** about BNCT treatment
- **Physician, Hospital, and Regulatory Support** :
  Compassionate use, clinical experiences with BNCT, clinical evidence

Capacity and Revenue Growth Drivers

- **Flexible Business Model** : Increases hospital willingness to adopt and invest
- **Facility Expansion** :
  Each additional treatment site expands patient reach
- **Investment Attractiveness** :
  High patient penetration potential (treatment volume × eligible indications)

Market Pulls

Development Strategy

HNMC established

2017 — 2022 — 2023 — 2024 — 2025 — 2026 — 2027 — 2028

AB-BNCT Develop → Construction → V & V → **Medical Device**

1 **Priority** in obtaining marketing authorization
Being the **verification platform** of next product

BPA Boron-containing Drug Develop → IND & IRB → Clinical trial Complete → **BNCT Treatment Drug**

2 Making AB-BNCT becoming a **regular radiotherapy** in Taiwan

FBPA PET diagnostic Drug Develop → IND & IRB → Clinical trial Complete → **Radiopharmaceutical**

3 Providing **total solution** to customers and obtaining the **first drug license in the world**

Accelerator Develop → **Accelerator**

4 Completing all AB-BNCT technologies to achieve the goal of **domestic production** and driving the industrial development

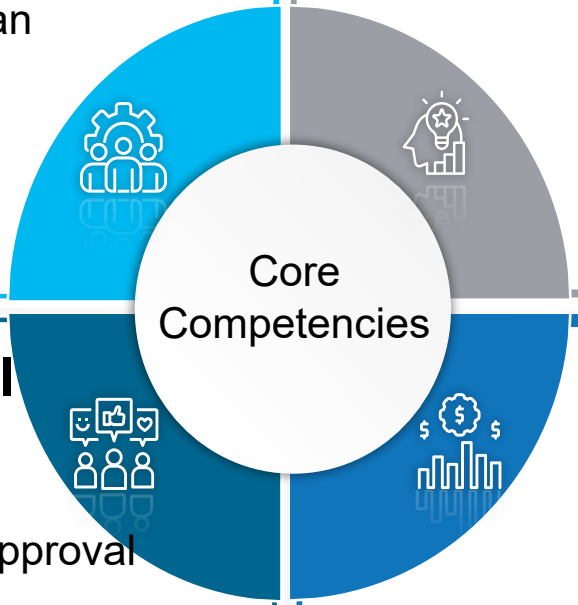
Investment Highlights

Proprietary Leading Technology

- **Highest Efficiency** & Lowest Operating Cost
- **World's Only** Total Solution Provider
- High-Barrier, **Billion-Dollar** Blue Ocean Market

Comprehensive Strategic Plan

- Off-Label Use Data
- The Most Extensive **Clinical Experience and Indications**



High-Performance Professional Team

- **3 Months:** Obtained medical device approval
- **9 Months:** Completed 100 cases of compassionate use treatment
- Clinical Development: **4 clinical trials conducted simultaneously**
- Performance: All milestones **achieved ahead of or on schedule**

Flexible & Innovative Business Model

- **Razor-and-Blade Model**
- **Device Revenue:** One-time income from equipment sales
- **Recurring Revenue:** Continuous income from drugs and maintenance services

Thank You

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