

Disease prevention & Treatment of undiseases

Health risk analysis and prediction

Vertical Large Model of Health from Medin

“

AI "Sudden Death Prevention" Risk Management Platform (Precise Early Warning of the Risk of Heart and Cerebral Infarction and Other Acute and Serious Diseases);

AI Primary Health Management (AI Physical Examination and Disease Prediction, etc.);

AI medical insurance fee control and chronic disease management (screening-prevention-management-treatment of the four-high chronic diseases, prevention of serious illnesses, etc.)

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Medin Vertical AI

Fully self-developed vertical large model, digital precision analysis and prediction of health risks

A large database of ultra-high-quality medical and healthcare

Unique 25 million Chinese, lasts for 15~30 years population-wide all-generation, all-life cycle Healthcare database

Completed core algorithms for multiple diseases

- Assessment to predict the risk of disease in the next 1 to 10 years
 - Includes 35 common chronic and acute diseases, 22 cancers and 17 core diseases



Algorithm development based on the concept of disease progression

Specialized vertical macromodel development (not based on LLM macromodel)

As early as 20 years ago, the team has begun independent research and development, from the database to the algorithmic model, all self-research native vertical AI technology

80~95% accuracy

Algorithm specificity and sensitivity of more than 80~95% (non-invasive and invasive algorithmic models) verified by **a team of international experts**

R&D Team



Benton Sheng Founder & CEO

Bachelor degree of Law, Sun Yet-sen University

Founder of Medin

Chief Product Officer

Serial entrepreneur, turned Medin into health big-data & AI company from medical device company in 2017 , after Taipei team joined. Turn algorithm & science into products that suitable for both in 2B & 2C market.



Huang Xuming Co-founder & CTO

Founder of Taiwan health insurance big-data center ,

associate professor of Taipei Medical University &

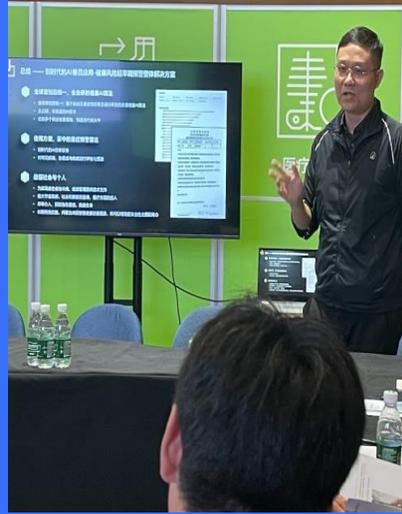
Chinese Medical University(Taiwan)

14 years director of Bio Statistic Center of Department of Health of Taiwan , founder of medical & health database, developer and leader of research team of series health & medical algorithm.

- ✓ R&D team of a dozen algorithm engineers.
- ✓ Master's degree or higher.
- ✓ Average 10+ years of experience in big data & AI algorithm development projects.



Honors and Recognition



BPAA Algorithm Competition

BPAA's 4th Global Applied Algorithmic Modeling Paradigm Competition, Medin was selected from a group of 263 projects to win the TOP10 honor in the Medical Algorithmic Modeling track.



NVIDIA Inception Showcase

After 9 cities roadshow PK from Hong Kong to Suzhou, Medin was selected as one of the 31 "Outstanding Enterprises" in NVIDIA's Inception Showcase 2024.



Dubai World Expo 2022

Medin was honored to be featured in the "Cooperation and Innovation - Charming Bay Area" at the Dubai World Expo Guangdong Week.

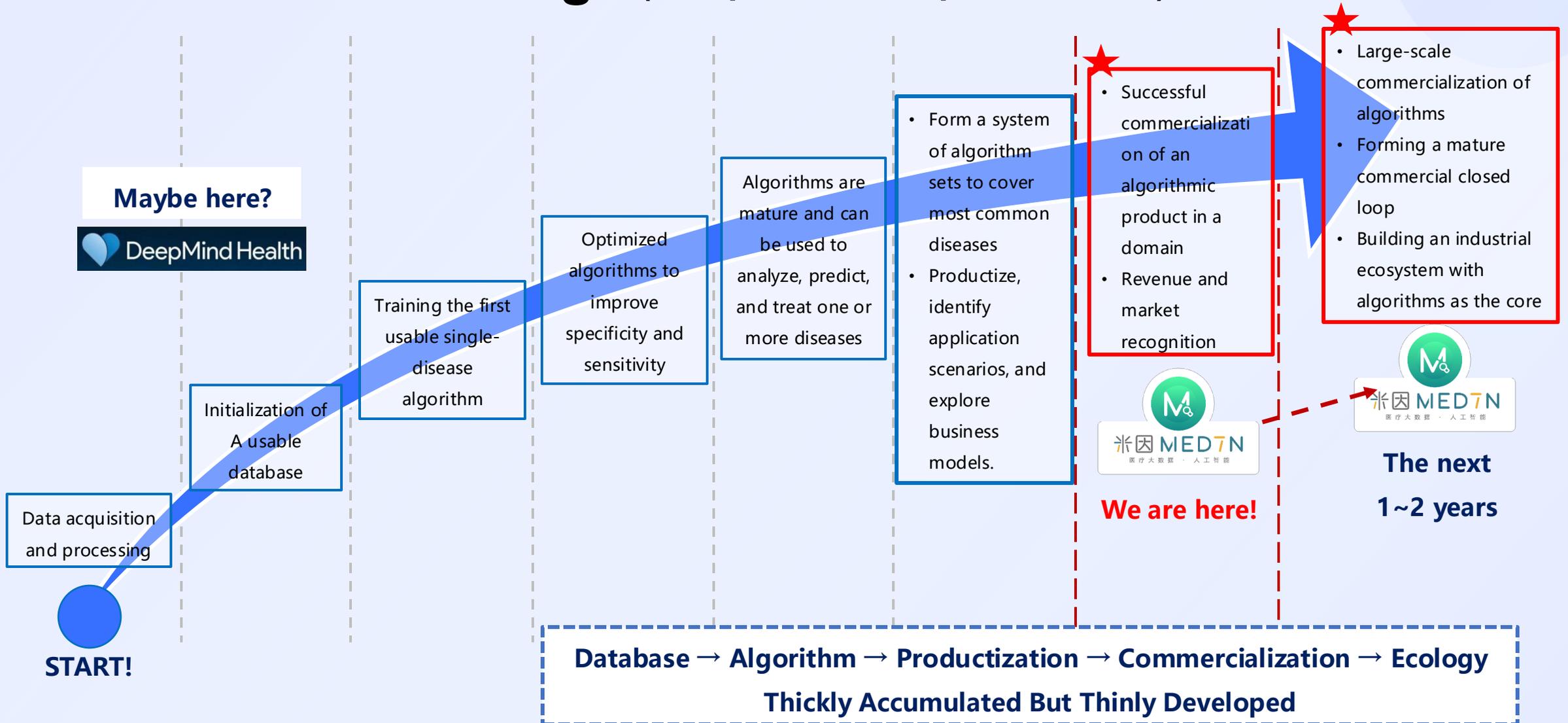
Competitor Comparison

Core Tech	Company	Data Base	Data Scale	Input	Application Scope	Productization	Financing Stage
Big data + AI Algorithm (Non-black box)	MEDIN AI	Life cycle Health, medical, public health, death record	25 million Asian 15-30 years	Standard Customized	Age 20-90 280+diseases(ICD-10) Life cycle	Series products & pipe line	pre-A/A
	Deep Mind Health	NHS database	1.6 million people One year	Medical record	No released edition	×	Postponed
Image data + Machine learning + Image Algorithm	Deep Mind Health	NHS database	1.6 million people One year	Image data	Eye disease, breast cancer, Cardiovascular disease	√	Unknow
	Zebra Medical Vision	Chest X-ray database	2 million X-rays	X-ray	Chest X-ray	√	C
	SkinVision	Image of skin	170 thousand Images	Skin image	Melanoma	√	Unknow
	IDx-DR	Image of retina	Unknow	Fundus image	Retinopathy	√	B
	Paige.AI	Memorial Sloan Kettering Cancer Center	Millions of Images	Slide image	Prostatic cancer Breast cancer	√	C
	Viz.ai	Emory University ALADIN database	Unknow	CT scan data	Stroke	√	D

Core Tech	Product	Database
Knowledge Graph + Chat Robot + Teleconsultation	IBM Watson Health	Base on clinical guideline & protocol, or papers
	Babylon Health	
	Ada Health	
	Sensely	
	Tencent Medical AI	
	Ping An Good Doctor	

- Only Medin AI and Google Deep Mind Health are dedicated to using AI algorithms to analyze diseases and make predictions for the future.
- Only Medin AI has a high-quality Chinese healthcare database as a data base.
- **Medin Health AI is the world's only and leading vertical, multi-disease healthcare AI precision analytics and prediction technology.**

First Mover Advantage (Compared to DeepMind Health)



<https://www.ithome.com.tw/news/163442>, take a glance at where Google is...

International Expert Validation

Validation results in accordance with the International Validation Assessment

Evaluation Methodology

In order to scientifically and objectively validate the models associated with the Medin Health Risk Assessment Engine, this program uses **a retrospective generational research methodology** to systematically sample three groups (100, 1,000, and 10,000 people, respectively) from a sample pool of 1.5 million people, compare the mean of the predicted prevalence of the samples to the true prevalence of the sample pool, and assess consistency through differences, coefficients of variation, and mean squared deviations.

The smaller the difference, coefficient of variation, and mean squared error, the closer the predicted prevalence converges to the true trend of the sample pool.

Conclusion of the evaluation

According to the table of data comparison results, the information provided by the Medin algorithm on the current status of individuals and the possible evolution of their future health, regardless of whether it is verified by gender or age, can be seen that the larger the sample size is verified, the more consistent the results are with those of the parent body in terms of the prediction of diseases.

It is clear that the trends in the present and possible evolution of future health or future disease incidence of an individual as estimated by the Medin algorithm converge with those of the whole mother.

Comparison results (regardless of gender and age - for each disease)

不分性別年齡別之各項疾病別結果													
疾病名稱	母體	樣本數100人				樣本數1,000人				樣本數10,000人			
		平均		標準差		平均		標準差		平均		標準差	
		樣本 平均	與母體 差距	樣本 標準差	變異 係數	樣本 平均	與母體 差距	樣本 標準差	變異 係數	樣本 平均	與母體 差距	樣本 標準差	變異 係數
高血壓	0.090	0.090	- 0.000	0.012	0.13	0.092	- 0.002	0.003	0.03	0.091	- 0.001	0.001	0.01
糖尿病	0.031	0.032	- 0.001	0.004	0.13	0.032	- 0.001	0.001	0.03	0.032	- 0.001	0.000	0.01
心臟病	0.036	0.035	0.000	0.005	0.15	0.037	- 0.001	0.001	0.03	0.036	- 0.000	0.001	0.01
氣喘	0.032	0.032	0.000	0.001	0.04	0.032	0.000	0.000	0.01	0.032	0.000	0.000	0.00
痛風	0.047	0.049	- 0.002	0.003	0.06	0.047	- 0.002	0.003	0.04	0.047	- 0.002	0.003	0.04
胃潰瘍	0.075	0.076	- 0.000	0.003	0.04	0.075	- 0.000	0.003	0.04	0.075	- 0.000	0.003	0.04
癌症	0.007	0.007	0.000	0.001	0.15	0.007	0.000	0.001	0.15	0.007	0.000	0.001	0.15
甲狀腺	0.036	0.034	0.002	0.002	0.06	0.036	0.000	0.002	0.06	0.036	0.000	0.002	0.06
肝炎	0.081	0.082	- 0.001	0.004	0.05	0.081	- 0.001	0.004	0.05	0.081	- 0.001	0.004	0.05
肝硬化	0.001	0.001	- 0.000	0.000	0.23	0.001	- 0.000	0.000	0.23	0.001	- 0.000	0.000	0.23
腎炎	0.013	0.013	- 0.000	0.000	0.03	0.013	- 0.000	0.000	0.03	0.013	- 0.000	0.000	0.03
泌尿道結石	0.046	0.046	- 0.000	0.003	0.06	0.046	- 0.000	0.003	0.06	0.046	- 0.000	0.003	0.06
關節炎	0.039	0.038	0.001	0.004	0.11	0.039	0.000	0.004	0.11	0.039	0.000	0.004	0.11
疼痛	0.015	0.014	0.000	0.001	0.06	0.015	0.000	0.001	0.06	0.015	0.000	0.001	0.06
睡眠障礙	0.018	0.017	0.000	0.002	0.10	0.018	0.000	0.002	0.10	0.018	0.000	0.002	0.10
高血脂	0.017	0.018	- 0.001	0.002	0.12	0.017	- 0.001	0.002	0.12	0.017	- 0.001	0.002	0.12

不分性別年齡別之各項疾病結果			
疾病名稱	均方差(mean squared error)		
	樣本數100人	樣本數1,000人	樣本數10,000人
高血壓	0.000140	0.000013	0.000003
糖尿病	0.000017	0.000002	0.000001
心臟病	0.000030	0.000002	0.000000
氣喘	0.000002	0.000000	0.000000
痛風	0.000014	0.000004	0.000001
胃潰瘍	0.000010	0.000001	0.000000
癌症	0.000001	0.000000	0.000000
甲狀腺	0.000007	0.000001	0.000000
肝炎	0.000016	0.000013	0.000002
肝硬化	0.000000	0.000000	0.000000
腎炎	0.000000	0.000000	0.000000
泌尿道結石	0.000007	0.000002	0.000000
關節炎	0.000018	0.000002	0.000000
疼痛	0.000001	0.000000	0.000000
睡眠障礙	0.000003	0.000000	0.000000
高血脂	0.000005	0.000001	0.000000

Please contact us for gender and age-specific results.

International Expert Validation

Validation results in accordance with the International Validation Assessment

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Visiting Professor, School of Public Health, Harvard University, United States of America
Vice President, Chuo University

Views of the Committee of Evaluation Experts

- ✓ This validation step meets scientific requirements
- ✓ The input variables for this disease model are appropriate
- ✓ The output of this disease model is reliable
- ✓ The assessment predictive modeling demonstrated in this engine is useful for individual health promotion and management

*Accreditation details available upon request

Medin Vertical AI Applications

Reducing Costs and Increasing Efficiency



No additional checks required

Uses routine physical exam data and seamlessly incorporates traditional physical exam reports.



Making medical examination data "speak for themselves"

Routine medical checkups often do not show the deep health risks, but Medin AI Health realizes digitalized precise disease risk expression, helping users to clearly locate the risks, and truly realizing the goal of "early detection, early intervention, early interruption" of the "treatment of the future disease".



Health AI SaaS Back Office and Enterprise Health AI Group Reporting

Provide comprehensive and in-depth AI assessment and prediction to corporate executives and VIP clients, helping companies and managers to grasp the recent status and future development trend of the overall health risk of the enterprise.



Rapid, low-cost screening for employee health risks and critical illnesses

Covers common acute and critical conditions such as myocardial infarction, stroke, and cancer.

Early detection and early warning of major common chronic diseases can also be achieved for disease prevention or better chronic disease management.



Helping to build a “Capital of Vertical Models” in line with the city's development

Universal Large Model

- Requires large amounts of data and huge computational resources, with extremely high R&D thresholds and costs;
- The corpus data source is rich, but it is nearly depleted and not applicable to specialized scenarios;
- Focus on breadth and generalizability;
- Commercialization is difficult and the business path is unclear.

Vertical AI

- Focusing on specific domains usually requires less computational resources and time and is relatively inexpensive;
- High demand for data quality and expertise, high quality data is scarce and difficult to obtain;
- Focus on the depth of expertise in a specific area;
- Solve specific needs in specific scenarios with clear business paths and strong profitability.

Advantages of Medin

- Has a specialized database in the field of medical and health care, with large-scale and high-quality data, the only one in the world;
- We have a team of composite talents who have been deeply engaged in the field of healthcare artificial intelligence for decades;
- The initial iteration of the algorithmic model has been completed, and the subsequent development has a very low demand for resources such as computing power and electricity;
- Commercialization exploration and landing breakthroughs in key areas have been completed.

Pazhou is located in the eastern part of Guangzhou Haizhu District. Last year, Haizhu took the initiative to compete in the big model track, building the country's first demonstration area for the application of artificial intelligence big model with municipal support. This is the first time in the country that this format has been used to focus on the development of large model applications.



Guangzhou has not made much headway in the much-talked-about universal big language model. Now, the city's strategy for the development of large models is to move from the general to the vertical domain, more accurately targeting the needs of niche industries, to become the “**Capital of Vertical Models**”.

Recognized by Large State-owned Central Enterprises and Headline Enterprises

Cooperation with large enterprises



SCG

Labor safety and sudden death take precautions against



CMHK

Delivering Healthy AI Services to individual users



HKHC

AI empowers traditional commercial medical examination

Partners

- China Travel Service (Shanghai) Co.
- Shanghai Construction Engineering Seven Group Co.
- China Mobile (Hong Kong)
- Hong Kong Health Check and Medical Diagnostic Center (HKHC)
- Cathay Financial Holdings (Taiwan)
- Cathay Life Insurance Company of Taiwan, China
- MJ Healthcare (Taiwan)
- Shanghai Shanxu Health Technology Co.
- Beijing Guoan Guangzhuan
- Symphox Information (Taiwan)
- Joint Commission on Accreditation of Healthcare Organizations International (Taiwan)
- Huan Yu Biomedical Technology Asia
- Universal Healthcare Ltd. (Taiwan)
- United Daily News series (Taiwan)
- Taipei Medical University
- Novartis
- Boehringer Ingelheim



Diverse Application Scenarios



Communal

AI Healthcare & Medical



Construction site for laborers

AI Sudden Death Alert and
Labor Safety



Civil servants and business
workers

AI Physical Examination and
Health Management



Enterprise Technology
Enablement

Insurance, medical, health
management



Middle-aged and older
individuals

Chronic Disease Management
and Elderly at Home

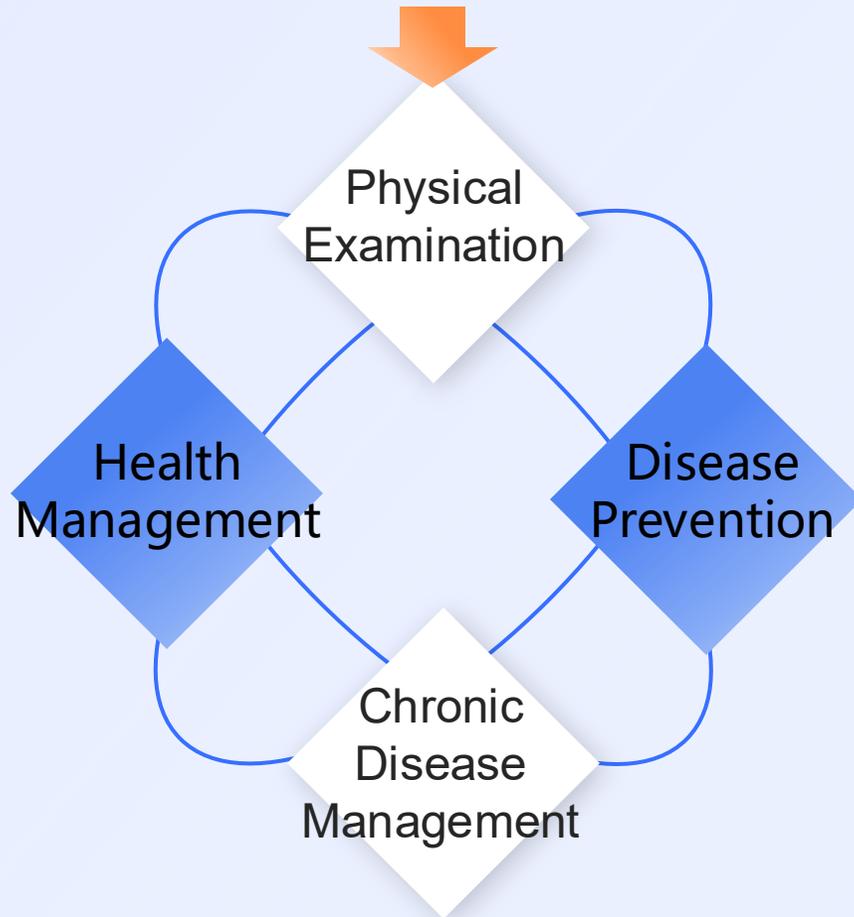
Market Entry Points

BIG HEALTH

MEDICAL CARE

ELDERLY CARE

INSURANCE



Health Industry Market Size Totals \$3.7 Trillion by 2024

- Medical checkups and health examinations -- \$259 billion
- Health management and health promotion - \$1.3 trillion
- Disease Prevention and Intervention - \$1.3 Trillion
- Chronic disease management -- \$846.8 billion

Core Entry Point

Prediction of acute and critical illnesses, especially myocardial infarction and stroke

- Sudden deaths due to heart attacks and strokes account for more than 85% of sudden deaths due to illnesses
- **Strong** market demand for safety of life and property

Application Scenarios for Sudden Death Prevention

There are many application scenarios and areas of demand for sudden death prevention. At present, Medin is developing products and services to enter the market with at least four different scenarios.

Disease Prevention

Sudden Death Prevention + Intelligent Risk Management for Construction Laborers (SCG)

Physical Examination

Heart and brain infarction and core disease prediction/warning (HKHC)

Health Management

Sudden Death Prevention at Home + Disease Prevention (CMHK)

Integrated Application

Enterprise Intelligent Health Management (Shanghai Federation of Trade Unions, Shanghai Electric)

AI Sudden Death Prevention of Construction Industry

According to national statistics, the nation's GDP in the construction sector totaled \$32.6 trillion in 2023;

The current service rates offered by Medin are between 1.2 ‰ and 1.5 ‰ of the cost of the project, indicating a potential total market value of between \$39 billion and \$48.9 billion per year.

At present, the comprehensive management cost of laborers in the construction field in terms of health and safety is **¥ 1,800-2,000 /person/year** (50,000 people's theoretical cost calculation).

Among them are:

- The average cost of a medical examination is ¥ 200 per person per year;
- Sudden death pays out ¥ 1.5-2 million /person, at a per capita cost of ¥ 900-1200 /person/year for 50,000 people;
- Cost of insurance (premiums are paid on the basis of the cost of the project, but only accidental injury or death is covered, not injury or death from personal health causes such as sudden death); and
- Remaining management costs.

If Medin technology is adopted, the comprehensive cost of health and safety management will drop to **¥ 600-800/person/year**, and it will be possible to reduce at least **80% of** the casualties and claims such as sudden deaths due to heart attacks and strokes caused by personal health factors. **It is expected that every 50,000 laborers can generate at least ¥ 50 million/year of added value of earnings, reducing costs and increasing efficiency significantly.**

The gross output value of the construction and engineering industry in Jiangsu Province ranked first at ¥ 40,660 billion, with neighboring Zhejiang Province at ¥ 2,400 billion and Guangdong Province at ¥ 2,300 billion in third place.

In Jiangsu, Zhejiang and Shanghai alone, the gross construction output value is more than ¥ 7 trillion , and the potential market value of "AI anti-sudden death-intelligent labor management platform" is as high as ¥ 8-10 billion.

Saving Lives – SCG Lu Xiang Yuan Project



March 2024, Shanghai Construction Group Seven Construction Group - Lu Xiang Yuan construction site (Medin AI critical illness warning, on-site body index measurements)

Number of people screened by the project: 545 (3 months of project implementation)

Findings: High-risk laborers: 27

Medium and high-risk laborers: 13



One person, one file, flexible coverage

Based on the shift entry time, real-name archiving, support for cross-domain traceability.



Anchor risks at a glance

Coverage of heart attack, brain attack, emotional behavior and other common major risk visualizations.



Dynamic display with real-time updates

Support group-engineering-project multi-account authority management and background warning.

Real Life Saving Cases - Typical Case 1 (Mr. S)

May 2024

Assessment of value at risk **506**

July 2024

Confirmed diagnosis at a tertiary hospital

S先生的档案

年龄: 54岁	身高: 162cm	体重: 71kg
腰围: 92cm	臀围: 96cm	
生活习惯: 经常吸烟, 经常喝酒, 每周运动7小时以上, 无睡眠障碍, 无疾病史, 无手术史。		

S先生的血液检查结果:

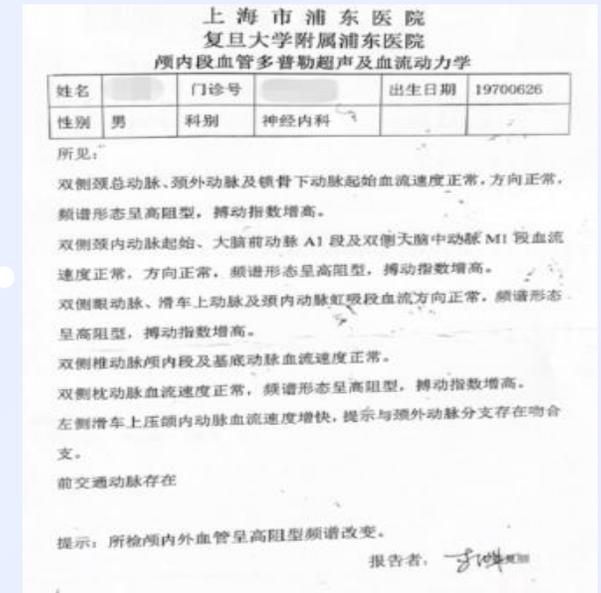
空腹血糖:	6.3mmol/L
总胆固醇:	4.62 mmol/L
低密度脂蛋白胆固醇:	2.72 mmol/L
高密度脂蛋白胆固醇:	1.02 mmol/L
甘油三酯:	1.93 mmol/L
尿酸:	430μmol/L



- Mr. S is 54 years old, smokes and drinks regularly but also maintains a good exercise routine, does not have any clinic-diagnosed illnesses, and appears to be in good health.
- Mr. S's body markers and blood tests were carried out at the site, and although the results were slightly elevated, they appeared to Mr. S to be "fine".

Based on Mr. S's physical data and blood test results, the Medin AI Critical Illness Alert algorithm flashed several red lights to Mr. S - in particular, a risk value of 506 for stroke.

Medin recommended that Mr. S. go to the hospital for an in-depth examination, adding a head Doppler ultrasound in addition to blood tests to confirm that the risk of stroke was real.



Head and neck Doppler ultrasound at a tertiary care hospital confirms high risk of stroke. **The intracranial and extracranial vessels examined showed a high-resistance type of spectral changes with an increased beat index.**

Real Life Saving Cases - Typical Case 2 (Mr. H)

May 2024
First assessment of value at risk **557**



米因AI重症预警潜在疾病风险值



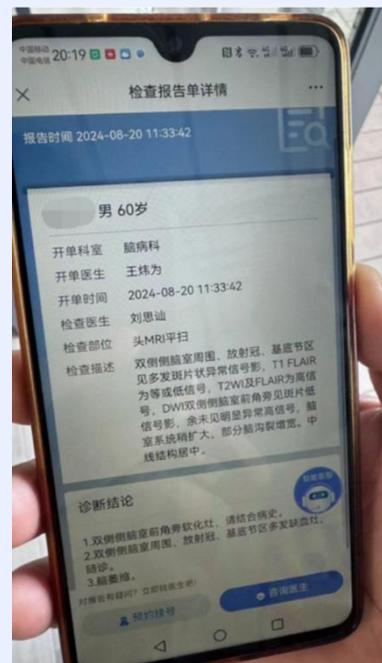
July 2024
Second assessment of value at risk **670**



米因AI重症预警潜在疾病风险值



August 2024
Confirmed diagnosis at a tertiary hospital



September 2024
Third Assessment Value at Risk **347**



米因AI重症预警潜在疾病风险值



- Mr. H is 60 years old, does not smoke or drink, maintains a good exercise routine, does not sleep well, and suffers from heart disease and high blood pressure.
- Mr. H is a manager at the pilot site and was very interested to see the use of the MiinHealth AI Critical Illness Alert service at the site.

Mr. H's second on-site blood test results were even better than the first, with only a weight gain, and although waist and hip circumferences were not measured, Mr. H believed that the risk should be under control.

But the Medin AI Critical Illness Alert once again gave Mr. H a red light and suggested that the risk of stroke was even higher than the first time.

Medin recommended that Mr. H go to the hospital for an in-depth examination, adding an MRI of the head in addition to blood work to confirm that the risk of stroke was real.

Clinical imaging at a tertiary care hospital corroborated plaques and multiple ischemic sinuses, suggesting stroke risk.

Mr. H follows the doctor's advice to keep taking the medication and is strictly and conscientiously managing his health by losing weight and controlling his waistline according to the AI Improvement Program under the advice of Medin.

Third assessment in September of the same year:

The stroke risk value dropped by 50 percent, from an original high of 670 to 347.

Business Model

B2B

Intelligent Management Platform Service for Employment Risks of SCG;
Reducing labor risks for enterprises to achieve cost reduction and efficiency.



B2B2C

Realize business conversion on their user base by joining forces with B-side users to create AI value-added services for their customer base.

Corporate Procurement

HKHC, AI Intelligent Health Check



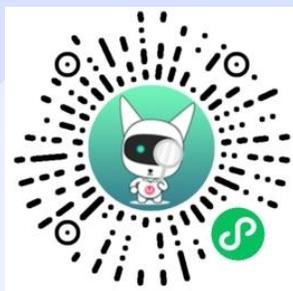
Cooperate on a share of profits

CMHK, Online Health AI Mini Assistant



THANK YOU

Medin and you are leading the way in health science and technology.



MEDIN AI & WISE MEDICAL LIMITED (HK)
Shanghai Medin Big Data Technology

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