AIM Vaccine Co., Ltd.
艾美疫苗股份有限公司

(a joint stock company incorporated in the People's Republic of China with limited liability)

(Stock Code: 06660)

INTERIM RESULTS ANNOUNCEMENT FOR THE SIX MONTHS ENDED JUNE 30, 2024

FINANCIAL HIGHLIGHTS

	Six months ended June 30,		
	2024	2023	Change
Key income statement items	***RMB'000***	*RMB'000*	*%*
Revenue	**537,178**	540,470	-0.6
Gross profit	**388,290**	432,648	-10.3
Loss attributable to owners of the parent	**(139,254)**	(250,369)	-44.4

The Board is pleased to announce the unaudited interim condensed consolidated results of the Group for the six months ended June 30, 2024 together with the comparative figures for the six months ended June 30, 2023 as follows:

INTERIM CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME
For the six months ended 30 June 2024

		Six months ended 30 June	
	Notes	**2024**	2023
		RMB'000	*RMB'000*
		(Unaudited)	(Unaudited)
REVENUE	*4*	**537,178**	540,470
Cost of sales		**(148,888)**	(107,822)
Gross profit		**388,290**	432,648
Other income and gains	*4*	**13,424**	21,028
Selling and distribution expenses		**(232,240)**	(224,902)
Administrative expenses		**(124,163)**	(115,659)
Research and development costs		**(170,110)**	(398,529)
Impairment losses on financial assets, net		**(3,857)**	(3,670)
Other expenses		**(656)**	(1,639)
Finance costs	*5*	**(29,998)**	(19,156)
LOSS BEFORE TAX	*6*	**(159,310)**	(309,879)
Income tax credit	*7*	**14,046**	52,447
LOSS FOR THE PERIOD		**(145,264)**	(257,432)
TOTAL COMPREHENSIVE LOSS FOR THE PERIOD		**(145,264)**	(257,432)
Loss attributable to:			
Owners of the parent		**(139,254)**	(250,369)
Non-controlling interests		**(6,010)**	(7,063)
		(145,264)	(257,432)
Total comprehensive loss attributable to:			
Owners of the parent		**(139,254)**	(250,369)
Non-controlling interests		**(6,010)**	(7,063)
		(145,264)	(257,432)
LOSS PER SHARE ATTRIBUTABLE TO ORDINARY EQUITY HOLDERS OF THE PARENT:	*9*		
Basic			
– For loss for the period (RMB)		**(0.11)**	(0.21)
Diluted			
– For loss for the period (RMB)		**(0.11)**	(0.21)

INTERIM CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION

30 June 2024

	Notes	**30 June 2024** ***RMB'000*** **(Unaudited)**	31 December 2023 *RMB'000* (Audited)
NON-CURRENT ASSETS			
Property, plant and equipment	*10*	**3,302,324**	3,293,917
Right-of-use assets		**214,714**	227,612
Goodwill		**271,453**	271,453
Other intangible assets		**872,531**	805,415
Prepayments for equipment		**71,147**	82,697
Deferred tax assets		**106,444**	95,327
Other non-current assets		**3,966**	2,638
Total non-current assets		**4,842,579**	4,779,059
CURRENT ASSETS			
Inventories		**488,072**	509,860
Trade and bills receivables	*11*	**1,094,107**	1,005,069
Prepayments, other receivables and other assets		**167,691**	157,641
Due from related parties		**31,920**	31,713
Restricted cash		**41,618**	42,238
Time deposits		**129,995**	153,272
Cash and cash equivalents		**525,343**	583,143
Total current assets		**2,478,746**	2,482,936

	Notes	30 June 2024 *RMB'000* (Unaudited)	31 December 2023 *RMB'000* (Audited)
CURRENT LIABILITIES			
Trade payables	*12*	**57,142**	60,358
Other payables and accruals		**1,296,947**	1,236,537
Contract liabilities		**49,729**	56,934
Interest-bearing bank borrowings		**1,477,132**	1,205,696
Lease liabilities		**8,748**	20,544
Tax payable		**1,845**	2,894
Deferred government grants		**4,567**	6,106
Provisions		**15,847**	12,830
Total current liabilities		**2,911,957**	2,601,899
NET CURRENT LIABILITIES		**(433,211)**	(118,963)
TOTAL ASSETS LESS CURRENT LIABILITIES		**4,409,368**	4,660,096
NON-CURRENT LIABILITIES			
Interest-bearing bank borrowings		**462,909**	556,944
Lease liabilities		**11,838**	12,425
Deferred tax liabilities		**31,649**	41,163
Deferred government grants		**158,659**	159,987
Total non-current liabilities		**665,055**	770,519
Net assets		**3,744,313**	3,889,577
EQUITY			
Equity attributable to owners of the parent			
Share capital		**1,211,063**	1,211,063
Reserves		**2,292,437**	2,431,691
		3,503,500	3,642,754
Non-controlling interests		**240,813**	246,823
Total equity		**3,744,313**	3,889,577

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

Six months ended 30 June 2024

	Attributable to owners of the parent								
	Share capital *RMB'000*	Capital reserve *RMB'000*	Merger reserve *RMB'000*	Statutory reserve *RMB'000*	Share-based compensation reserves *RMB'000*	Accumulated losses *RMB'000*	Total *RMB'000*	Non-controlling interests *RMB'000*	Total equity *RMB'000*
At 31 December 2023 (audited) and 1 January 2024	**1,211,063**	**2,901,199**	**(30,763)**	**107,461**	**1,194,940**	**(1,741,146)**	**3,642,754**	**246,823**	**3,889,577**
Loss for the period	**–**	**–**	**–**	**–**	**–**	**(139,254)**	**(139,254)**	**(6,010)**	**(145,264)**
Total comprehensive Loss for the period	**–**	**–**	**–**	**–**	**–**	**(139,254)**	**(139,254)**	**(6,010)**	**(145,264)**
At 30 June 2024 (unaudited)	**1,211,063**	**2,901,199**	**(30,763)**	**107,461**	**1,194,940**	**(1,880,400)**	**3,503,500**	**240,813**	**3,744,313**
At 31 December 2022 (audited) and 1 January 2023	1,211,063	2,901,592	(30,763)	103,475	1,211,029	(436,155)	4,960,241	900,666	5,860,907
Loss for the period	–	–	–	–	–	(250,369)	(250,369)	(7,063)	(257,432)
Total comprehensive Loss for the period	–	–	–	–	–	(250,369)	(250,369)	(7,063)	(257,432)
Acquisition of non-controlling interests	–	(393)	–	–	–	–	(393)	(4,607)	(5,000)
Equity-settled share-based compensation	–	–	–	–	(22,129)	–	(22,129)	–	(22,129)
At 30 June 2023 (unaudited)	1,211,063	2,901,199	(30,763)	103,475	1,188,900	(686,524)	4,687,350	888,996	5,576,346

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS
Six months ended 30 June 2024

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
CASH FLOWS FROM OPERATING ACTIVITIES		
Loss before tax	**(159,310)**	(309,879)
Adjustments for:		
Finance costs	**29,998**	19,156
Interest income	**(4,356)**	(5,432)
Equity-settled share-based compensation	**–**	(21,855)
Amortization of deferred government grants	**(3,092)**	(2,580)
Amortization of other intangible assets	**17,150**	18,310
Write-down of inventories to net realisable value	**3,063**	5,106
Loss on disposal of items of property, plant and equipment	**47**	80
Provision for impairment of trade and bills receivables	**3,857**	3,670
Exchange losses, net	**154**	3,546
Depreciation of property, plant and equipment	**57,659**	58,427
Depreciation of right-of-use assets	**17,473**	14,092
	(37,357)	(217,359)
Decrease/(increase) in inventories	**18,725**	(47,972)
Increase in trade and bills receivables	**(92,895)**	(3,472)
(Increase)/decrease in prepayments, deposits and other receivables	**(10,050)**	6,055
Increase in amounts due from related parties	**(207)**	(32,112)
Decrease in restricted cash	**620**	607
Decrease in trade payables	**(3,216)**	(17,313)
Decrease in contract liabilities	**(7,205)**	(6,378)
Increase in other payables and accruals	**42,280**	71,327
Cash used in operating activities	**(89,305)**	(246,617)
Income tax paid	**(7,853)**	(2,385)
Net cash flows used in operating activities	**(97,158)**	(249,002)

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
CASH FLOWS FROM INVESTING ACTIVITIES		
Interest received	**3,753**	6,575
Purchase of items of property, plant and equipment	**(50,633)**	(80,974)
Purchase of right-of-use assets	**–**	(14,639)
Purchase of other intangible assets	**(68,832)**	(15,364)
Receipt of government grants for property, plant and equipment	**225**	29,916
Increase in restricted cash	**–**	(66)
Decrease/(increase) in time deposits	**23,880**	(5,000)
Proceeds from disposal of property, plant and equipment	**75**	11
Net cash flows used in investing activities	**(91,532)**	(79,541)
CASH FLOWS FROM FINANCING ACTIVITIES		
New bank loans	**454,099**	695,878
Repayment of bank loans	**(276,816)**	(401,236)
Interest paid	**(29,880)**	(18,944)
Acquisition of non-controlling interests	**–**	(5,000)
Principal portion of lease payment	**(16,958)**	(10,810)
Net cash flows generated from financing activities	**130,445**	259,888
NET DECREASE IN CASH AND CASH EQUIVALENTS	**(58,245)**	(68,655)
Cash and cash equivalents at beginning of period	**583,143**	656,267
Effect of foreign exchange rate changes, net	**445**	2,280
CASH AND CASH EQUIVALENTS AT END OF PERIOD	**525,343**	589,892
ANALYSIS OF BALANCES OF CASH AND CASH EQUIVALENTS		
Cash and cash equivalents as stated in the statement of financial position	**525,343**	589,892

1. CORPORATE AND GROUP INFORMATION

AIM Vaccine Co., Ltd. (the "**Company**") was incorporated as a limited liability company in the People's Republic of China (the "**PRC**") on 9 November 2011. Upon approval by the shareholders' general meeting held on 18 September 2020, the Company was converted into a joint stock company with limited liability under the Company Law of the PRC and changed its registered name from "Beijing AIM Biological Vaccine Technology Group Co., Ltd.* (北京艾美生物疫苗技術集團有限公司) to "AIM Vaccine Co., Ltd.* (艾美疫苗股份有限公司) on 23 September 2020. The registered office of the Company is located at Room 412, 4/F, Building 6, No. 105 Jinghai 3rd Road, Beijing Economic-Technological Development Area, Beijing.

The Group was involved in the research and development, manufacturing and commercialisation of vaccine products for human use in the PRC.

The Company was listed on the Main Board of The Stock Exchange of Hong Kong Limited (the "**Stock Exchange**") on 6 October 2022.

2.1 BASIS OF PREPARATION

The interim condensed consolidated financial information for the six months ended 30 June 2024 has been prepared in accordance with IAS 34 *Interim Financial Reporting*. The interim condensed consolidated financial information does not include all the information and disclosures required in the annual financial statements and should be read in conjunction with the Group's annual consolidated financial statements for the year ended 31 December 2023.

The Group recorded net current liabilities of RMB433,211,000 as at 30 June 2024 (31 December 2023: RMB118,963,000). In view of the net current liabilities position, the Group's management prepared a cash flow forecast which covers a period of twelve months from the end of the reporting period after taking into consideration of the following:

The Group's ability and historical records in negotiating with the banks for new bank borrowings and renewal of existing bank borrowings. Subsequent to 30 June 2024, the Group has renewed bank borrowings of RMB255,000,000. In addition, as at the date of the approval of these financial statements, the Group has unused bank facilities of RMB101,000,000.

– The Group's continued efforts in expediting the collection of outstanding trade receivables, improving sales and controlling the pace of the Group's operation expansion and capital expenditures.

The cash flows forecast indicates that the Group will have sufficient financial resources to settle the borrowings and payables that will be due in the next twelve months. Therefore, the directors are of the opinion that there are no material uncertainties that may cast significant doubt over the going concern assumption and concluded it is appropriate to prepare the condensed consolidated financial information of the Group for the six months ended 30 June 2024 on a going concern basis.

2.2 CHANGES IN ACCOUNTING POLICIES AND DISCLOSURES

The accounting policies adopted in the preparation of the interim condensed consolidated financial information are consistent with those applied in the preparation of the Group's annual consolidated financial statements for the year ended 31 December 2023, except for the adoption of the following revised International Financial Reporting Standards ("**IFRSs**") for the first time for the current period's financial information.

Amendments to IFRS 16	*Lease Liability in a Sale and Leaseback*
Amendments to IAS 1	*Classification of Liabilities as Current or Non-current* (the "**2020 Amendments**")
Amendments to IAS 1	*Non-current Liabilities with Covenants* (the "**2022 Amendments**")
Amendments to IAS 7 and IFRS 7	*Supplier Finance Arrangements*

The nature and impact of the revised IFRSs that are applicable to the Group are described below:

(a) Amendments to IFRS 16 specify the requirements that a seller-lessee uses in measuring the lease liability arising in a sale and leaseback transaction to ensure the seller-lessee does not recognise any amount of the gain or loss that relates to the right of use it retains. Since the Group has no sale and leaseback transactions with variable lease payments that do not depend on an index or a rate occurring from the date of initial application of IFRS 16, the amendments did not have any impact on the financial position or performance of the Group.

(b) The 2020 Amendments clarify the requirements for classifying liabilities as current or non-current, including what is meant by a right to defer settlement and that a right to defer must exist at the end of the reporting period. Classification of a liability is unaffected by the likelihood that the entity will exercise its right to defer settlement. The amendments also clarify that a liability can be settled in its own equity instruments, and that only if a conversion option in a convertible liability is itself accounted for as an equity instrument would the terms of a liability not impact its classification. The 2022 Amendments further clarify that, among covenants of a liability arising from a loan arrangement, only those with which an entity must comply on or before the reporting date affect the classification of that liability as current or non-current. Additional disclosures are required for non-current liabilities that are subject to the entity complying with future covenants within 12 months after the reporting period.

The Group has reassessed the terms and conditions of its liabilities as at 1 January 2023 and 2024 and concluded that the classification of its liabilities as current or non-current remained unchanged upon initial application of the amendments. Accordingly, the amendments did not have any impact on the financial position or performance of the Group.

(c) Amendments to IAS 7 and IFRS 7 clarify the characteristics of supplier finance arrangements and require additional disclosure of such arrangements. The disclosure requirements in the amendments are intended to assist users of financial statements in understanding the effects of supplier finance arrangements on an entity's liabilities, cash flows and exposure to liquidity risk. The disclosure of relevant information for supplier finance arrangements is not required for any interim reporting period during the first annual reporting period in which an entity applies the amendments. As the Group does not have supplier finance arrangements, the amendments did not have any impact on the interim condensed consolidated financial information.

3. OPERATING SEGMENT INFORMATION

The Group is engaged in the sale of vaccine and research and development services, which are regarded as a single reportable segment in a manner consistent with the way in which information is reported internally to the Group's senior management for purposes of resource allocation and performance assessment. Therefore, no analysis by operating segment is presented.

4. REVENUE, OTHER INCOME AND GAINS

An analysis of revenue is as follows:

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
Revenue from contracts with customers	**537,178**	540,470

Disaggregated revenue information for revenue from contracts with customers

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
Types of goods or services		
Sales of vaccine	**537,178**	540,470
	537,178	540,470
Timing of revenue recognition		
Goods or services transferred at a point in time	**537,178**	540,470

An analysis of other income and gains is as follows:

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
Other income and gains		
Government grants related to		
– Assets	**3,092**	2,580
– Income	**4,988**	12,903
Bank interest income	**4,356**	5,432
Others	**988**	113
	13,424	21,028

5. FINANCE COSTS

An analysis of finance costs is as follows:

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
Interest on bank loans	**40,700**	33,662
Interest on lease liabilities	**988**	956
Less: Interest capitalised	**11,690**	15,462
	29,998	19,156

6. LOSS BEFORE TAX

The Group's loss before tax is arrived at after charging/(crediting):

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
Cost of inventories sold	**148,888**	107,822
Equity-settled share-based compensation	**–**	(21,855)
Foreign exchange differences, net	**154**	3,546
Provision for impairment of trade and bills receivables	**3,857**	3,670
Write-down of inventories to net realizable value	**3,063**	5,106
Loss on disposal of property, plant and equipment	**47**	80
Interest income	**(4,356)**	(5,432)

7. INCOME TAX EXPENSE

The Group is subject to income tax on an entity basis on profit arising in or derived from the jurisdictions in which members of the Group are domiciled and operate.

Under the Law of the PRC on Corporate Income Tax (the "**CIT Law**") and Implementation Regulation of the CIT Law, the CIT rate of the PRC subsidiaries is 25% unless they are subject to preferential tax as set out below.

AIM Action BioPharm Co.,Ltd. was renewed as a "High and New Technology Enterprise" on 12 October 2022, and therefore, AIM Action BioPharm Co.,Ltd. was entitled to a preferential CIT rate of 15% for the six months ended 30 June 2024. This qualification is subject to review by the relevant tax authority in the PRC for every three years.

AIM Honesty Biopharmaceutical Co., Ltd. was renewed as a "High and New Technology Enterprise" on 19 November 2021, and therefore, AIM Honesty Biopharmaceutical Co., Ltd. was entitled to a preferential CIT rate of 15% for the six months ended 30 June 2024. This qualification is subject to review by the relevant tax authority in the PRC for every three years. As of 30 June 2024, AIM Honesty Biopharmaceutical Co., Ltd. is currently in the process of renewal of the qualification. The management believes that a preferential tax rate of 15% remains applicable for AIM Honesty Biopharmaceutical Co., Ltd. for the six months ended 30 June 2024.

AIM Rongyu (Ningbo) Biopharmaceutical Co., Ltd. was renewed as a "High and New Technology Enterprise" on 10 December 2021, and therefore, AIM Rongyu (Ningbo) Biopharmaceutical Co., Ltd. was entitled to a preferential CIT rate of 15% for the six months ended 30 June 2024. This qualification is subject to review by the relevant tax authority in the PRC for every three years. As of 30 June 2024, AIM Rongyu (Ningbo) Biopharmaceutical Co., Ltd. is currently in the process of renewal of the qualification. The management believes that a preferential tax rate of 15% remains applicable for AIM Rongyu (Ningbo) Biopharmaceutical Co., Ltd. for the six months ended 30 June 2024.

AIM Persistence Biopharmaceutical Co., Ltd. was renewed as a "High and New Technology Enterprise" on 10 December 2021, and therefore, AIM Persistence Biopharmaceutical Co., Ltd. was entitled to a preferential CIT rate of 15% for the six months ended 30 June 2024. This qualification is subject to review by the relevant tax authority in the PRC for every three years. As of 30 June 2024, AIM Persistence Biopharmaceutical Co., Ltd. is currently in the process of renewal of the qualification. The management believes that a preferential tax rate of 15% remains applicable for AIM Persistence Biopharmaceutical Co., Ltd. for the six months ended 30 June 2024.

AIM Explorer Biomedical R&D Co., Ltd. became a "High and New Technology Enterprise" on 12 December 2023, and therefore, AIM Explorer Biomedical R&D Co., Ltd. was entitled to a preferential CIT rate of 15% (2022: 25%) for the year ended 30 June 2024. This qualification is subject to review by the relevant tax authority in the PRC for every three years.

On 17 May 2022, Liverna Therapeutics Inc. was entitled to a preferential CIT rate of 15% effective for annual periods beginning on 1 January 2021.

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
Current income tax	**6,586**	609
Deferred	**(20,632)**	(53,056)
Tax credit for the period	**(14,046)**	(52,447)

8. DIVIDENDS

The Board did not recommend the payment of any dividend during the six months ended 30 June 2024 (Six months ended 30 June 2023: nil).

9. LOSS PER SHARE ATTRIBUTABLE TO ORDINARY EQUITY HOLDERS OF THE PARENT

The calculation of the basic earnings per share amount is based on the loss attributable to ordinary equity holders of the parent, and the weighted average number of ordinary shares of 1,211,062,599 (six months ended 30 June 2023: 1,211,062,599) in issue during the period, as adjusted to reflect the rights issue during the period.

The calculations of basic and diluted loss per share are based on:

	Six months ended 30 June	
	2024	2023
	RMB'000	*RMB'000*
	(Unaudited)	(Unaudited)
Loss		
Loss attributable to ordinary equity holders of the parent, used in the basic and diluted loss per share calculation	**(139,254)**	(250,369)

	Six months ended 30 June	
	2024	2023
	(Unaudited)	(Unaudited)
Shares		
Weighted average number of ordinary shares in issue during the period used in the basic and diluted loss per share calculation	**1,211,062,599**	1,211,062,599

As the Group incurred losses for the six months ended 30 June 2024 and 2023, the potential ordinary shares were not included in the calculation of diluted loss per share as the potential ordinary shares had an anti-dilutive effect on the basic loss per share.

10. PROPERTY, PLANT AND EQUIPMENT

As at 30 June 2024 and 31 December 2023, certain of the Group's buildings with a net carrying amount of approximately RMB250,538,000 and RMB259,358,000, respectively, were pledged to secure certain interest-bearing bank borrowings of the Group.

As at 30 June 2024 and 31 December 2023, certain of the Group's buildings with aggregate net carrying amount of approximately RMB79,452,000 and RMB81,737,000, respectively, do not have building ownership certificates.

During the six months ended 30 June 2024, the Group acquired assets at a cost of RMB66,188,000 (30 June 2023: RMB72,123,000).

Assets with a net book value of RMB123,000 were disposed of by the Group during the six months ended 30 June 2024 (30 June 2023: RMB91,000), resulting in a net loss on disposal of RMB47,000 (30 June 2023: RMB80,000).

11. TRADE AND BILLS RECEIVABLES

	30 June 2024	31 December 2023
	RMB'000	*RMB'000*
	(Unaudited)	(Audited)
Trade receivables	**1,154,823**	1,062,137
Bills receivables	**551**	343
Impairment	**(61,267)**	(57,411)
	1,094,107	1,005,069

The Group's trading terms with its customers are mainly on credit. The credit period is generally from two to six months. Each customer has a maximum credit limit. The Group seeks to maintain strict control over its outstanding receivables and has a credit control department to minimise credit risk. Overdue balances are reviewed regularly by senior management. In view of the aforementioned and the fact that the Group's trade receivables relate to a large number of customers, there is no significant concentration of credit risk. The Group does not hold any collateral or other credit enhancements over its trade receivable balances. Trade receivables are non-interest-bearing.

The Group's bills receivable was all aged within six months and was neither past due nor impaired.

An ageing analysis of the Group's trade receivables, based on the invoice date and net of loss allowance, as at the end of the reporting period is as follows:

	30 June 2024	31 December 2023
	RMB'000	*RMB'000*
	(Unaudited)	(Audited)
Within 1 year	**874,249**	825,890
1 to 2 years	**175,831**	142,037
2 to 3 years	**35,990**	32,073
3 to 4 years	**7,164**	4,413
4 to 5 years	**322**	313
	1,093,556	1,004,726

12. TRADE PAYABLES

An ageing analysis of the trade payables as at the end of the reporting period, based on the invoice date, is as follows:

	30 June 2024	31 December 2023
	RMB'000	*RMB'000*
	(Unaudited)	(Audited)
Within 1 year	**52,541**	50,260
1 to 2 years	**3,450**	9,225
2 to 3 years	**280**	3
Over 3 years	**871**	870
	57,142	60,358

The trade payables are non-interest-bearing and are normally settled on 30 to 90-day terms.

MANAGEMENT DISCUSSION AND ANALYSIS

Business Overview and Outlook

Overview

As a large whole industry chain vaccine company in China, we cover the full value chain from research and development to manufacturing and to commercialization. We have five proven human vaccine technology platforms, including bacterial vaccine technology platform, viral vaccine technology platform, genetically engineered vaccine technology platform, combination vaccine technology platform and mRNA vaccine technology platform. We have four wholly-owned licensed vaccine manufacturing enterprises, including AIM Rongyu (mRNA vaccine production base and viral vaccine technology platform), AIM Persistence (bacterial vaccine production base and technology platform), AIM Action (viral vaccine production base and technology platform), and AIM Honesty (genetically engineered vaccine production base and technology platform); three vaccine research institutes, including AIM Explorer (bacterial joint technology platform), AIM Innovator (genetic engineering technology platform), and AIM Liverna (mRNA technology platform); and four R&D centers, including AIM Bohai Bay R&D Center of AIM Honesty, AIM Yangtze River Delta R&D Center of AIM Rongyu, AIM Da Jiangnan R&D Center of AIM Action, and AIM Ningbo Bay R&D Center of AIM Persistence, totaling seven R&D teams to ensure the ability to deliver milestones of pipeline products. We are one of the first two human vaccine companies in the PRC that have been granted permission under the 14th Five-Year Plan of the PRC to build a bio-safety level 3 laboratory. The product categories of the Company are comprised of vaccines under the immunization program and vaccines not covered by the immunization program, and the commercialized products have occupied a leading position in the Chinese market for a long time, which have been sold in all 31 provinces and cities, and autonomous regions in China, reaching CDCs of more than 2,000 counties and districts. Our 8 commercialized products include recombinant HBV vaccine (Hansenula Polymorpha), freeze-dried human rabies vaccine (Vero cell), inactivated HAV vaccine (HDC), mumps vaccine, bivalent inactivated HFRS vaccine (Vero cell) and Group A, C, Y and W135 MPSV (MPSV4). We have 22 vaccine candidates and our pipeline covers the top 10 vaccine species of the world. AIM Vaccine is an extremely rare comprehensive vaccine industry group with strengths in the four dimensions of pipeline, R&D, manufacturing and sales.

We obtained 14 clinical approvals and conducted 21 clinical trials as of June 30, 2024. The construction of the production workshops for 13-valent pneumonia conjugate vaccine, iterative serum-free rabies vaccine and 23-valent pneumonia polysaccharide vaccine has been completed, and we are accelerating the work of marketing registration.

2024 is the year when the Company focuses on making filings for marketing registration for products in its pipelines. In the first half of the year, the pre-application for marketing of the 13-valent pneumonia conjugate vaccine (PCV13) has been completed. The results of pre-testing for drug registration met quality standards. We have completed the basic stage of the statistics unblinding work, and are accelerating the work of marketing registration.

Currently, iterative serum-free rabies vaccine has completed on-site work for Phase III clinical trial and the serology testing for subjects after a full course of immunization. The results of pre-testing for drug registration met quality standards. We will soon proceed to the statistics unblinding work, and are planning to submit application for marketing registration.

The 23-valent pneumonia polysaccharide vaccine (PPSV23) has completed on-site work for Phase III clinical trial, is in the preparation stage before database lock, and will soon be unblinded for statistical analysis. We are planning to submit pre-application for marketing registration.

The Company has completed the pre-applications for clinical trials of five vaccine products, including mRNA RSV vaccine (respiratory syncytial virus vaccine), mRNA shingles/herpes zoster vaccine, 20-valent pneumonia conjugate vaccine (PCV20), novel-process highly-effective human diploid rabies vaccine and haemophilus influenzae type b (Hib) conjugate vaccine. In the meantime, the applications for clinical trials of two vaccine products to the Center for Drug Evaluation (CDE) of NMPA have been completed, including quadrivalent influenza virus vaccine (MDCK Cells) and adsorbed tetanus vaccine.

The Company has submitted the pre-applications for clinical trials of mRNA RSV vaccine and mRNA shingles/herpes zoster vaccine to the CDE of NMPA, and also the pre-applications for clinical trials of mRNA RSV vaccine and mRNA shingles/herpes zoster vaccine to the U.S. FDA.

Our sales and marketing function is centralized, specialized, and market-oriented, which enables us to accelerate strategy formulation and execution, achieve high cost-efficiency and gain cross-selling opportunities. We set up a collectivized and centralized marketing model through a two-pronged "in-house sales and marketing" development model to optimize sales efficiency.

In 2024, we have actively explored the international market, promoted the freeze-dried human rabies vaccine (Vero cell) and tetravalent meningococcal vaccine to enter the international market competition, and have won bids in Pakistan, Tajikistan, Egypt and Côte d'Ivoire.

At the same time, we have successively launched a series of whole-process temperature monitoring vaccine products to ensure the safety and effectiveness of the vaccines, including freeze-dried human rabies vaccine (Vero cell), recombinant HBV vaccine (Hansenula Polymorpha), Group A, C, Y and W135 MPSV (MPSV4), and inactivated HAV vaccine (HDC), which can adapt to more differentiated customer needs and provide different customers with choices of various product specifications, as well as achieve better temperature control and identification of vaccines. We will further upgrade our vaccine quality management level and enhance the market competitiveness of our products.

For the six months ended June 30, 2024, the Company achieved operating revenue of approximately RMB537.2 million, representing a decrease of 0.6%, as compared to the same period in 2023.

The sales of each type of product are as follows:

	Six months ended June 30,	
	2024	2023
	RMB'000	*RMB'000*
Revenue from sales of vaccine products		
Revenue from sales of Class I vaccine	**54,100**	33,942
Revenue from sales of Class II vaccine	**483,078**	506,528
Total	**537,178**	540,470

Our Products and Pipelines

We strive to access the best industry resources. Through more than one decade of organic growth and external resource integration, we have become a major player in the Chinese vaccine industry. We have currently commercialized eight vaccine products against six disease areas, of which the recombinant HBV vaccine and freeze-dried human rabies vaccine are our key commercialized market-leading vaccine products.

We also have 22 vaccine candidates against 14 disease areas in our pipelines, and up to now, the Company has obtained 14 clinical approvals for 9 varieties of vaccines.

The 13-valent pneumonia conjugate vaccine (PCV13) has submitted the pre-application for marketing. The results of pre-testing for drug registration met quality standards. We have completed the basic stage of the statistics unblinding work, and are accelerating the work of marketing registration.

Currently, iterative serum-free rabies vaccine has completed on-site work for Phase III clinical trial and the serology testing for subjects after a full course of immunization, and the results of pre-testing for drug registration met quality standards. We will soon proceed to the statistics unblinding work, and are planning to submit application for marketing registration.

The 23-valent pneumonia polysaccharide vaccine (PPSV23) has completed on-site work for Phase III clinical trial, is in the preparation stage before database lock, and will soon be unblinded for statistical analysis. We are planning to submit pre-application for marketing registration.

The Phase II clinical trial of Group A, C, Y and W135 MCV (also known as tetravalent meningococcal conjugate vaccine) (MCV4) is in progress; and the global innovative EV71-CA16 bivalent HFMD vaccine (HDC) has entered into clinical stage.

To date, we have submitted pre-applications to the NMPA for clinical trials of the Company's mRNA RSV vaccine, mRNA shingles/herpes zoster vaccine, 20-valent pneumonia conjugate vaccine (PCV20), novel-process highly-effective human diploid rabies vaccine and haemophilus influenzae type b (Hib) conjugate vaccine, and submitted applications to the NMPA for clinical trials of quadrivalent influenza virus vaccine (MDCK Cells) and adsorbed tetanus vaccine. Meanwhile, we have submitted the pre-applications for clinical trials to the U.S. FDA for mRNA RSV vaccine and mRNA shingles/herpes zoster vaccine.

Our Vaccine Products

Recombinant HBV Vaccine (Hansenula Polymorpha)

Recombinant HBV vaccine series products have been and are expected to continue to be one major type of our commercialized products. Currently, we are the first and only company in China with steady production and approved lot release of HBV vaccines using Hansenula Polymorpha for antigen expression. Our recombinant HBV vaccine (Hansenula Polymorpha), being part of China's national 863 High-tech R&D program, has achieved a historical record of providing immunoprotection to 80% of Chinese newborns that year with a total of nearly 500 million doses administered in the past.

Hansenula Polymorpha is widely recognized as the best manufacturing technology route for HBV vaccines among all three currently available manufacturing technologies (Hansenula Polymorpha, Saccharomyces cerevisiae and Chinese hamster ovary (CHO) cells), featuring better genetic stability, higher purity and stronger antigen expression capabilities. In addition, we manufacture HBV vaccines with adjuvants under a patented process, which prolongs the action time of antigens in the human body, serves to strengthen the stimulation of immune response and provides longer protection. Also, no preservatives, antibiotics or bovine serum albumin are added, thereby greatly enhancing product safety. We have been granted patents for this process in the PRC which are valid until May 2032, distinguishing our recombinant HBV vaccine series products from others and creating a high technological entry barrier for later entrants.

China has a high infection rate of HBV. Based on the World Health Organization's goal of "eliminating viral hepatitis as a public health threat by 2030", the incidence rate shall decrease by 90% and the mortality rate shall decrease by 65% in China in order to achieve this goal. Combined with the actual situation in China, the Hepatology Branch and Infectious Disease Branch of Chinese Medical Association updated and formed the Guidelines for the Prevention and Treatment of Chronic Hepatitis B (2022 edition) (《慢性乙型肝炎防治指南(2022年版)》). Based on the principles of broader screening and more proactive antiviral treatment, the Guidelines serve to provide an important basis for the prevention, diagnosis and treatment of chronic hepatitis B. HBV vaccination is the most effective way to prevent HBV infection. Currently, the Company is actively cooperating with local CDCs to conduct projects on eliminating the threat of hepatitis. The Company plans to swift the promotion of the HBV vaccination from being exclusively for newborns to the entire population in the future. In the first half of 2024, the Company has successively launched HBV adult vaccination project promotion activities in certain provinces and cities. The future promotion of vaccination of HBV in adults in China is expected to become a new growth opportunity in the market.

We have developed two sizes of recombinant HBV vaccine products, 10μg/0.5ml and 20μg/0.5ml per dose. The 10μg dosage recombinant HBV vaccine is allowed to be administered in all age groups, including newborns, children and adults, and is the only yeast-derived hepatitis B vaccine currently in the Chinese market for use by the entire population. The 20μg dosage recombinant HBV vaccine has been approved to be administered in people in the age group of 16 years old and above. Its unique 0.5ml small package reduces the vaccination time and pain time and provides a better vaccination experience, and we are the only enterprise that provides 0.5ml small package of 20μg hepatitis B vaccine in the current domestic market, which fills the gap in the domestic market. Our recombinant HBV vaccine series products have maintained a 100% pass rate in lot release quality audits of NIFDC since their approvals.

Freeze-dried Human Rabies Vaccine (Vero Cell)

The freeze-dried human rabies vaccine (Vero cell), one of our major products, is an injectable vaccine administered under the intramuscular route to persons of all ages to prevent rabies after exposure or when in a high-risk environment of exposure to rabies. We manufacture this vaccine product in AIM Rongyu, which obtained the NDA approval in September 2007 and the GMP certificate in June 2008.

With the product occupying a leading position in the market for a long time, we are now the second largest supplier in the rabies vaccine market. High and stable product quality has been and will continue to be critically significant to compete in this market. Since its commercialization in 2007, our freeze-dried human rabies vaccine (Vero cell) has maintained a 100% pass rate in lot release quality audits by the NIFDC for 16 years. In the future, the Company will launch products including the iterative serum-free rabies vaccine, the iterative novel-process highly-effective human diploid rabies vaccine and the iterative mRNA rabies vaccine, spearheading the in-depth technological iteration of rabies vaccines in the world, and deliver iterative rabies vaccine products with better quality, higher safety and fewer shots of vaccination in the market, so as to enhance the Company's competitiveness in the rabies vaccine market.

Inactivated HAV Vaccine (HDC)

Our inactivated HAV vaccine (HDC) is one of the only two inactivated HAV vaccines in the current market. Our product is the only vaccine in China that uses the strain isolated during the Shanghai HAV pandemic. It is more targeted and immunogenic, and has an upgraded advantage over the live attenuated HAV vaccines in the immunization program today. Hepatitis A is caused by the hepatitis A virus (HAV). In order to meet the needs of different age groups in the market, we have developed two inactivated HAV vaccine products, differentiated in terms of isolated HAV antigen concentration: the 320Eu/0.5ml per dose indicated for the age group of 1 to 15 years old, and the 640Eu/1.0ml per dose indicated for people older than 15. We currently have four approval document numbers, namely, single vial for adults, single vial for children, pre-filled syringe for adults and pre-filled syringe for children, that can fully satisfy the differentiated needs of various provinces across China. We are the exclusive supplier of inactivated HAV vaccines (pre-filled) for China's 2024 national immunization program.

Group A, C, Y and W135 MPSV (MPSV4)

We launched MPSV4 in March 2020. Our MPSV4 covers A, C, Y, and W135 serogroups, and can be administered to individuals over the age of two. We obtained the NDA approval for the MPSV4 in October 2018 and the GMP certificate in December 2018. We have adopted advanced production equipment and production processes to ensure that our MPSV4 has good safety and efficacy. At the same time, several key quality indicators of our MPSV4 surpass the relevant PRC national standards. We are the only company in China that does not add any antibiotics or preservatives to our MPSV4, which still maintains good stability and is valid for up to three years. In addition to meeting the domestic market needs, our products have joined the international market competition in recent years, and we have successively won bids and supplied products in Egypt and Tajikistan, meeting the market needs of different countries. Moreover, the Company is further developing tetravalent meningococcal conjugate vaccine (MCV4) product, which is currently under Phase II clinical stage. The Company expects to enhance its competitiveness in the market of meningococcal vaccine later through the marketing of the product.

Bivalent Inactivated HFRS Vaccine (Vero cell)

At present, our bivalent inactivated HFRS vaccine (Vero cell) is one of the only five approved HFRS vaccines in the PRC. AIM Persistence obtained the NDA approval for this vaccine in September 2007 and the GMP certificate for its production in February 2008. Our bivalent inactivated HFRS vaccine (Vero cell) uses Vero cells as a cell matrix, and its quality standard is much higher than that of similar products of other Chinese suppliers. Moreover, the production strains are from the Military Medical Research Institute of the Shenyang Military Region with better affinity for vaccination to the human body.

Mumps Vaccine

Our mumps vaccine is a live attenuated single-dose vaccine product indicated for vaccinees aged eight months and above with infection risks. AIM Persistence obtained the NDA approval for the mumps vaccine in October 2004 and the GMP certificate for its production in January 2005. We have not yet resumed commercial production for the time being as we are in the process of optimizing our product process and relevant trial works are in progress. Our attenuated mumps vaccine has sold 50 million doses since its launch to the market, proving its good safety and efficacy.

Our Vaccine Candidates

The following table summarizes our vaccine candidate portfolio:

Technology platform	Indication	Vaccine Candidate	In-house R&D/ Joint Development	Preclinical	CTA	Phase I	Phase II	Phase III	NDA & NDA Approval
Bacterial vaccine	Pneumonia disease	13-Valent Pneumonia Conjugate Vaccine (PCV13)	In-house R&D	Pre-application for marketing registration has been submitted					
		20-Valent Pneumonia Conjugate Vaccine (PCV20)	In-house R&D	Pre-application for clinical trials has been submitted					
		24-Valent Pneumonia Conjugate Vaccine (PCV24)	In-house R&D	Plan to submit CTA in 2025					
		23-Valent Pneumonia Polysaccharide Vaccine (PPSV23)	In-house R&D	Plan to submit pre-application for marketing registration in 2024					
	Meningococcal disease	Tetravalent Meningococcal Conjugate Vaccine (MCV4)	In-house R&D	Phase II clinical trial is ongoing, and plan to start Phase III in 2025					
		Hexavalent Meningococcal Vaccine	In-house R&D	Preclinical Research					
	Group B strep disease	Hexavalent Group B Streptococcus Polysaccharide Conjugate Vaccine	In-house R&D	Plan to submit CTA in 2025					
	Tetanus	Absorbed Tetanus Vaccine	In-house R&D	CTA has been submitted					
	Hib infection	Haemophilus Influenzae Type B (Hib) Conjugate Vaccine	In-house R&D	Pre-application for clinical trials has been submitted					
Viral vaccine	HFMD	EV71-CA16 Bivalent HFMD Vaccine (HDC)	In-house R&D	Plan to start Phase I in 2024					
	Influenza	Quadrivalent Influenza Virus Vaccine (MDCK Cells)	In-house R&D	CTA has been submitted					
	Rabies	Iterative Serum-free Rabies Vaccine	In-house R&D	Plan to submit application for marketing registration in 2024					
		Novel-process Highly-effective Human Diploid Rabies Vaccine	In-house R&D	Pre-application for clinical trials has been submitted					
mRNA vaccine	Rabies	Iterative mRNA Rabies Vaccine	In-house R&D	CTA under assessment					
	Shingles/Herpes zoster	mRNA Shingles/Herpes Zoster Vaccine	In-house R&D	Pre-application for clinical trials has been submitted					
	Respiratory syncytial virus infection	mRNA Respiratory Syncytial Virus Vaccine (RSV)	In-house R&D	Pre-application for clinical trials has been submitted					
	Influenza	mRNA Influenza Vaccine	In-house R&D	Preclinical Research					
	COVID-19 infection	Bivalent Delta-Omicron BA.5 mRNA COVID-19 Vaccine	In-house R&D	Plan to submit for marketing in 2024					
Combination vaccine	DTP	Diphtheria, Tetanus and Pertussis and Haemophilus Influenzae Type B (DTP-Hib) Combination Vaccine	In-house R&D	Plan to submit CTA in 2025					
		Diphtheria, Tetanus and Acellular Pertussis Combined Vaccine (DTaP)	In-house R&D	Plan to submit CTA in 2025					
		Diphtheria, Tetanus and Acellular Pertussis (Components) Combined Vaccine (DTcP)	In-house R&D	Plan to submit CTA in 2025					
Genetically engineered vaccine	Meningococcal disease	Recombinant Group B Meningococcal Vaccine	In-house R&D	Preclinical Research					

Research and Development Progress of Iterative Products

Iterative Pneumonia Vaccine Products

Following the established corporate strategy of the Company, we proactively advance the development of the vaccine pipelines and accelerate the research and development of iterative pneumonia series vaccines through on-going technological innovation, achieving new productive forces at an accelerated pace. Leveraging the advantages of the polysaccharide conjugate vaccine technology platform, we have developed a series of pneumonia vaccines, including: (1) the 13-valent pneumonia conjugate vaccine, which has submitted the pre-application for marketing. The results of pre-testing for drug registration met quality standards. We have completed the basic stage of the statistics unblinding work, and are accelerating the work of marketing registration; (2) the 23-valent pneumonia polysaccharide vaccine has completed on-site work for Phase III clinical trial, is in the preparation stage before database lock, and will soon be unblinded for statistical analysis. We are planning to submit pre-application for marketing registration; (3) the 20-valent pneumonia conjugate vaccine, which has submitted a pre-application for clinical trials; and (4) the 24-valent pneumonia conjugate vaccine, which is being simultaneously developed globally for the first time and has completed preclinical research.

Our PCV13 vaccine is a pneumonia conjugate vaccine to be indicated for children aged six weeks to 71 months. As of June 2024, PCV13 vaccine has completed the full course of vaccination in Phase III clinical trial, and we have submitted the pre-application for marketing registration to the NMPA and plan to complete the application for marketing in 2024.

We have tested and proven our manufacturing techniques of the PCV13 vaccine using our bacterial platform technologies. As of June 30, 2024, we have completed process validation production of PCV13 vaccine and submitted the pre-application for marketing registration to the NMPA, and the results of pre-testing for drug registration met quality standards. The completed Phase III clinical trial is a non-inferiority clinical trial that is single-centered, randomized, blinded and parallel-controlled between similar vaccines. The number of design samples was 3,780, with the main aim of assessing the immunogenicity (efficacy) and safety of the vaccine in the age group of six weeks to 71 months.

According to the classification of the World Health Organization, pneumococcal disease is one of the diseases with very high priority use of vaccines for prevention. The 13-valent pneumonia conjugate vaccine approved in the United States covers all age groups, while the one approved in China only covers those under 6 years old. The market for those over 6 years old is still blank. China Insights Industry Consultancy Limited, an industry consultant, predicts that the market size of this vaccine in China is expected to exceed RMB20 billion by 2030, indicating tremendous market potential. In addition, the estimated penetration rate of the 13-valent pneumonia conjugate vaccine in the approved age group in China is 25.9%, while the penetration rate in the corresponding age group in the United States exceeds 80%, indicating that there is still significant room for growth in the Chinese market.

It is estimated that the global underserved demand for the 13-valent pneumonia conjugate vaccines is as high as 180 million doses. However, currently, only three companies have been approved to supply them globally. After the launch of its 13-valent pneumonia conjugate vaccine, the Company is expected to become an important supplier in the market.

The construction of the GMP workshops for the Company's pneumonia vaccine series has been completed in batches, meeting international standards. Both the Phase III clinical samples of the 13-valent pneumonia conjugate vaccine and the 23-valent pneumonia polysaccharide vaccine are produced in these workshops. The launch of these iterative pneumonia vaccine products will sufficiently meet the market demand for pneumonia vaccines, leading to new productive forces in the industry and driving international industrial innovation.

Iterative Rabies Vaccine Products

Following the established corporate strategy of the Company, we proactively advance the development of the vaccine pipelines and accelerate the research and development of the iterative rabies series vaccines through on-going technological innovation, achieving new productive forces at an accelerated pace. As the second largest supplier of rabies vaccine globally, the Company has expedited the development of iterative rabies series vaccines. In particular: iterative serum-free rabies vaccine has completed on-site work for Phase III clinical trial and the serology testing for subjects after a full course of immunization, and the results of pre-testing for drug registration met quality standards. We will soon proceed to the statistics unblinding work, and are planning to submit application for marketing registration; and the pre-application for clinical trial of the novel-process highly-effective human diploid rabies vaccine has been submitted to the NMPA in the first half of 2024.

Completely unlike the existing Vero cell rabies vaccine containing serum and human diploid rabies vaccine containing serum, the iterative serum-free rabies vaccine is an iterative product. Animal serum residues in vaccine products are one of the important factors leading to adverse reactions such as allergies in vaccinated populations, and the iterative serum-free rabies vaccine developed by the Company does not contain animal serum, which significantly improves safety and reduces the probability of adverse reactions. To date, there is no serum-free rabies vaccine approved for launch in the global market.

The novel-process highly-effective human diploid rabies vaccine developed by the Company became the first to break through the technical bottleneck of low virus titer and small yield in the traditional process, with an optimized and innovative purification process, which has notably improved product quality and safety as compared with similar marketed products in China, and has the production capacity for large-scale commercialization.

In the meantime, the Company's mRNA technology platform has been tested by the clinical trial data from tens of thousands of subjects, which is far more superior to other mRNA vaccine products of the same type in the world in terms of safety and efficacy, and the iterative mRNA rabies vaccine has been developed on such platform. As proven by a massive number of animal tests, the vaccine is characterized by markedly decreased number of vaccinations, significantly accelerated the pace of protective neutralizing antibodies generation and remarkably enhanced comprehensive protective effect as compared with the traditional virus-cultured rabies vaccine.

We have completed the construction of the workshops for iterative serum-free rabies vaccine and novel-process highly-effective human diploid rabies vaccine, which have sufficient production capacity and meet international standards, and the equipment is currently being debugged and verified. As the second largest supplier of rabies vaccines globally, the Company spearheads the in-depth technological iteration of rabies vaccines in the world, and will deliver rabies vaccine products with better quality and higher safety in the market after the above iterative rabies series vaccines are marketed, so that new productive forces will be achieved in the industry.

mRNA Vaccine Technology Platform and Product

The Company's mRNA technology platform was tested by the clinical trial data from tens of thousands of subjects, and the safety and efficacy of products developed on the platform have been fully verified. The iterative mRNA rabies vaccine has been developed on such platform. As proven by a massive number of animal tests, the vaccine is characterized by markedly decreased number of vaccinations, higher level of protective neutralizing antibodies, significantly accelerated pace of generation, and strong immune persistence as compared with traditional virus-cultured rabies vaccines, which provides better options for improving the prevention and control level of rabies.

In the meantime, the mRNA RSV vaccine and mRNA shingles/herpes zoster vaccine being developed by us have adopted the Group's own mRNA technology platform and are global blockbuster vaccine products. RSV vaccines of Pfizer and GSK were successively approved for marketing in May 2023, the sales of which amounted to US$2.46 billion in 2023. The sales of GSK's shingles/herpes zoster vaccines amounted to US$4.37 billion in 2023. Given that the Group has already developed several mRNA COVID-19 vaccines which have been proven in clinical trials, we are able to quickly advance the R&D and registration of the products on that basis. So far, we have submitted the pre-applications for clinical trials to both the NMPA and the U.S. FDA for the two products. In the future, the Company will further focus on the mRNA platform key technologies and continuously promote product innovation on that basis, concentrating on the unmet clinical needs in the core disease areas and further enhancing the Company's innovation capabilities, core competitiveness and comprehensive strengths.

Currently, the Company has established mature mRNA vaccine platform production processes and stable testing methods to ensure the safety and effectiveness of products. Further, such platform technology has extensive applicability and has strong advantages of quick and timely response, especially in the face of sudden infectious disease.

Progress of Other Vaccine Candidates

Group A, C, Y and W135 Meningococcal Conjugate Vaccine (also known as tetravalent meningococcal conjugate vaccine) (MCV4)

The main meningococcal vaccine currently sold in China is polysaccharide vaccine (MPSV). The incidence rate of meningococcal disease is the highest among infants under 12 months old, but MPSV is unable to effectively induce an immune response in the body of children under 2 years old. In contrast, the conjugate vaccine can address the immunization and prevention of the disease, and younger children can be vaccinated with MCV4, which helps to establish an immune defense line at an early stage and effectively reduce the risk of infection. As a conjugate vaccine, MCV4's superior immune effect comes from its ability to stimulate the production of antibodies and immunological memory in the body at the same time, thus providing more lasting protection and better immune effect than that of MPSV. Compared with MCV2, which is also a conjugate vaccine, MCV4 can prevent two more types of meningococcal diseases and has the potential to become the mainstream vaccine to prevent meningococcal infection. Our MCV4 vaccine is a meningococcal polysaccharide conjugate vaccine and one of the world's top 10 heavyweight vaccine products, has the ability to prevent epidemic cerebrospinal meningitis caused by group A, C, Y and W135 neisseria meningitidis, and other invasive diseases, and is indicated for those in the age group of 3 months to 15 years. The phase II clinical trial of our tetravalent meningococcal conjugate vaccine is in progress.

EV71-CA16 Bivalent HFMD Vaccine

HFMD falls into the scope of Class C infectious diseases in China. Each year, over one million people are infected with the disease and there are death cases. Enterovirus type 71 (EV71) and coxsackievirus A16 (CA16) are the major pathogens of HFMD. As currently no approved vaccine against CA16 viral strains has launched in the market, China sees a trend of CA16 outbreak on a full scale. We are developing an EV71-CA16 bivalent HFMD vaccine, which is being developed for the first time worldwide. Our EV71-CA16 bivalent HFMD vaccine candidate is the first vaccine candidate in the world designed to provide immunization against both the EV71 and CA16 viral strains, has taken the lead in obtaining clinical approvals and is a global innovative vaccine product being developed for the first time. Currently, we have completed production of the clinical samples for the vaccine and are currently in the stage of verification of such clinical samples.

Vaccine development platform technologies and in-house R&D teams

We have five proven human vaccine platform technologies covering innovative technologies, such as mRNA vaccine, genetically engineered vaccine, and combination vaccine technologies, as well as traditional technologies, such as bacterial vaccine and viral vaccine technologies. Leveraging these platforms, we are well positioned to develop a steady and fit-for-purpose stream of vaccines that are efficient to manufacture. We have at least one approved product or one vaccine candidate at CTA or clinical stages under each platform. At the same time, the Company is currently designing the structure of antigens and mRNA sequence of vaccines leveraging artificial intelligence, and is trying to leverage artificial intelligence to assist in process research and development of vaccines. Looking forward, the Company expects to increase the depth of existing applications and expand its applications in clinical trial data analysis.

Our in-house R&D teams are responsible for all stages of vaccine candidate development, including preclinical studies, clinical trials, and registration and filings. Our R&D teams primarily consist of (i) three vaccine research institutes, namely AIM Explorer, AIM Liverna and AIM Innovator; and (ii) the R&D team in each of our four vaccine manufacturing subsidiaries, namely AIM Honesty, AIM Action, AIM Rongyu and AIM Persistence. Each R&D team has its own research foci. AIM Explorer mainly develops vaccine candidates using bacterial vaccine platform technologies. AIM Liverna develops mRNA vaccines by leveraging its expertise in mRNA technologies. AIM Innovator focuses on the research and development and commercialization of mRNA vaccine and genetically engineered recombinant vaccines. AIM Action focuses on viral vaccine platform technologies. AIM Rongyu focuses on mRNA vaccines and viral vaccine platform technologies. AIM Honesty concentrates on genetically engineered vaccine platform technologies. In addition, AIM Persistence is developing several vaccine candidates using combination and bacterial vaccine platform technologies.

Our R&D activities are led by a team of multi-disciplinary scientists, and we have also established our global R&D management center at the Group level to coordinate and supervise all R&D activities across the research institutes and operating subsidiaries. Mr. Fan ZHANG, who leads our global R&D management center, has over 10 years of experience in vaccine development, and has established our various vaccine technology platforms, including bacterial vaccine technology platforms, genetic engineering technology platforms, mRNA technology platforms as well as clinical trial and registration filing teams, and he is also responsible for specific research of vaccines such as PCV13, PCV20, MCV4, RSV and shingles/herpes zoster vaccines. Mr. Fanyue MENG, who leads our domestic vaccine clinical medicine work in China, has 20 years of experience in clinical management, and has led or participated in over 20 vaccine clinical trials successively. Mr. Lei ZHANG, who leads our international registration, international clinical trials and pharmacovigilance efforts, has 30 years of experience in the vaccine industry in the areas of manufacturing, research and development, registration, clinical trials and pharmacovigilance. Ms. Li JIANG, who leads our Da Jiangnan R&D Center, is the person in charge of the research and development of EV71-CA16 bivalent HFMD vaccine, and is one of the world's innovative EV71 vaccine developers. She is also one of the main developers of Sabin IPV vaccine and new genotype mumps vaccine, having over 30 years of experience in vaccine research and development. Mr. Jinan WU, who leads our Yangtze River Delta R&D Center, is responsible for the research and development of COVID-19 vaccines and human rabies vaccines (iterative serum-free vaccines and novel-process highly-effective human diploid rabies vaccine). Ms. Li MENG is responsible for our quality production. She has been involved in biologics production and quality management related work for over 30 years.

Manufacturing

All of our vaccine products are produced in house by our four individual Licensed Manufacturing Facilities in our manufacturing subsidiaries. As of June 30, 2024, we passed all GMP inspections conducted by the NMPA or its local provincial drug regulatory departments on the four individual Licensed Manufacturing Facilities. The following table sets forth key information of our four individual Licensed Manufacturing Facilities as of June 30, 2024:

Name	Location	GFA (sq.m.)	Annual bulk production capacity *(million doses)*	Responsible products	Production Line(s)
AIM Rongyu Licensed Manufacturing Facility	Ningbo, Zhejiang Province	25,318	25.0	Freeze-dried human rabies vaccine (Vero cell)	Two
AIM Honesty Licensed Manufacturing Facility	Dalian, Liaoning Province	11,877	45.0	Recombinant HBV vaccine (Hansenula Polymorpha)	One
AIM Action Licensed Manufacturing Facility	Taizhou, Jiangsu Province	18,711	5.3	Inactivated HAV vaccine	One
AIM Persistence Licensed Manufacturing Facility	Ningbo, Zhejiang Province	72,313	16.0	Bivalent inactivated HFRS vaccine (Vero cell), mumps vaccine and Group A, C, Y and W135 MPSV (MPSV4)	Three

We have equipped all our Licensed Manufacturing Facilities with advanced equipment and machinery procured from leading international and domestic brands, such as bioreactors, centrifuges, ultra-filtration system and large-scale purification system and product filling and packaging lines. We regularly inspect and maintain our equipment and machinery to ensure that they remain in good condition for operation. In each Licensed Manufacturing Facility, we have been actively taking measures to ensure a stable and quality supply, including designating dedicated personnel to optimize production planning and coordination among different divisions, preventing contamination, improving automation in our production procedures, and strengthening the maintenance of our equipment and facilities to reduce the occurrence of failures.

As a major vaccine company in China, we expect a continuously strong market demand for our existing vaccine products. In order to have sufficient capacity to address these needs, we plan to establish new production facilities in the next few years. As of June 30, 2024, AIM Rongyu's iterative serum-free rabies vaccine workshop has completed the process validation batch production and the pre-testing for drug registration has been completed. We have started drafting the pre-application for marketing registration and are making preparations for product manufacturing approval filing and on-site verification. The construction of novel-process highly-effective human diploid rabies vaccine workshop has been completed, and the verification of the equipment is in progress. The filing materials of pre-application for clinical trials have been submitted and the batch production for clinical trials is conducted at the same time.

At the same time, located in the new bacterial vaccine industrialization project of AIM Persistence, the construction of the pneumonia series vaccines stoste workshop was completed in early 2021. The construction and debugging of the tetravalent meningococcal conjugate vaccine stoste workshop and the combination vaccine stoste workshop have been completed.

Industry Overview

The Vaccine Administration Law of the People's Republic of China (《中華人民共和國疫苗管理法》), which came into effect on December 1, 2019, contains specific provisions on the development, production, circulation and vaccination of vaccines as well as supervision and administration, and further defines vaccines as vaccines under the immunization program and vaccines not covered by the immunization program. The promulgation of the Vaccine Administration Law of the People's Republic of China began a new stage of vaccine development in China.

From the perspective of development trend, multidisease and multivalent vaccines are the main development direction of the global vaccine industry. The demand for vaccination of people is increased as a result of the prevalence of infectious diseases and high mutation rate of the virus worldwide. However, since the vaccination procedures, vaccination doses and contraindications of different vaccines are different, multidisease and multivalent vaccines are the inevitable trend in the development of the industry in order to reduce the vaccination frequency, enlarge the scope of prevention and improve safety. Compared to monovalent vaccines, multidisease and multivalent vaccines effectively improve the vaccination efficiency, are conducive to enhancing the overall vaccination rate and herd immunity efficacy, and have notable advantages. The vaccines such as pneumonia conjugate vaccine, Diphtheria, Tetanus and Pertussis Vaccine, human papillomavirus vaccine, meningitis vaccine and HFMD vaccine in the global market are inclined to develop in multidisease and multivalent vaccines. Nonetheless, at the same time, the development of multidisease and multivalent vaccines is in the face of higher difficulty, which are composed of multiple antigens mixed in a certain proportion. In the development process, factors such as antigen purity, interaction, impact of preservatives on newly added antigens, adjuvant action, buffer and PH control are required to be considered. Additionally, antigen selection is another challenge in the development of multidisease and multivalent vaccines, which requires taking into account the problems such as solubility, physical compatibility, stability of antigen components, immune procedures and adverse reactions. The development of multidisease and multivalent vaccines is a great challenge for the enterprise's technical reserves, research and development strength, production processes and financial support, and the industry barriers are extremely high. At present, there remains a relatively large gap between China's development of multidisease and multivalent vaccines and that of foreign countries. Numerous policies have been introduced by the government to encourage the development of multidisease and multivalent vaccines. The Vaccine Administration Law expressly declared that necessary funds will be arranged to support the development of new vaccines such as multidisease and multivalent vaccines. The "14th Five-Year Plan" for Bio-Economic Development (《"十四五"生物經濟發展規劃》) proposed to accelerate the iterative upgrading of vaccine research and development and production technologies, and develop multidisease and multivalent vaccines.

In addition, the clinical application potential of mRNA vaccine has been verified due to its excellent performance in the COVID-19 pandemic. Compared to other COVID-19 vaccines, mRNA vaccine has advantages such as faster research and development, lower infectivity, higher effectiveness and lower production cost, and the technology of mRNA has become the focus of the major vaccine manufacturers in the world. mRNA can be rapidly expressed and promptly degraded after entering human body, so it is not easy to disrupt homeostasis and burden on the body will be eased; the component of the mRNA vaccine is single and there is no need for cell culture or animal-derived matrices, and the vaccine has higher safety. Most importantly, the production of mRNA vaccines is easy to be standardized, and mRNA can be synthesized based on DNA sequences, which can be informationized and rapidly shared, thus allowing for the development of similar vaccines in a short period of time, as well as large-scale, short-term vaccine research and development and production in response to outbreaks of infectious diseases. Currently, major enterprises in the world gradually lay out the technology of mRNA applicable to the research and development of prophylactic vaccine and therapeutic vaccine. FDA is one of the most rigorous regulators in the world. Only a few drugs obtain the review designations each year, and it is recognized as having the highest safety standards by the World Health Organization. Since FDA first granted review designation for a mRNA vaccine in 2018, 25 vaccines have received this designation. In 2023, mRNA vaccines obtained a record of 9 designations from FDA for the treatment of 8 conditions, while mRNA vaccines only obtained 2 designations from FDA in 2022, demonstrating FDA's commitment to encouraging the development of those products for a broader range of indications. As of February 21, 2024, there were 230 clinical trials associated with mRNA in the aggregate worldwide, of which 127 were mRNA vaccine trials, accounting for more than half of all clinical trials. As more mRNA vaccines will be successfully developed and launched on the market in the future, the mRNA vaccine market will grow rapidly and the market prospect is broad.

In the area of pneumonia vaccines, innovative vaccines have the absolute dominant position in the market. With the price of PCV13 being three times higher than that of PPSV23, in 2018, Pfizer accounted for 34.6% of the total approved lot release volume and 65.6% of the total sales volume in the market of pneumonia vaccines only by virtue of its PCV13 product. By 2022, all PCV13 vaccines accounted for 72.6% of the approved lot release volume, with its sales volume accounting for as high as 88.3%. Due to the rapid growth of PCV13, the pneumonia vaccine market in China has increased to RMB10.75 billion in 2022, and it is expected to steadily increase at a compound annual growth rate of 22.7% and reach RMB24.0 billion by 2025. With the development of technology and the continuous enhancement of vaccine R&D technology, vaccine manufacturers are trying their best to overcome technical difficulties. Further vaccines with higher valent such as PCV13, PCV20 and PCV24 represent the development trend in the market in the future. PCV vaccines with higher valent can cover more types of pneumonia serum, including rarer types, thereby providing more comprehensive immunoprotection to people. Meanwhile, they also show obvious advantages in terms of immunological effect and duration, which can stimulate the immune system to generate enduring immune reaction in a more effective manner, extend the protection period of vaccines, significantly reduce the transmission and incidence risks of pneumonia infection, and provide a safer and more reliable choice of vaccines to people.

With respect to rabies vaccines in China, the approved lot release volume increased from 58.80 million in 2019 to 78.50 million in 2021, representing an increase of 33.6%. It is expected that the market scale will increase to RMB22.0 billion by 2030, partially due to the HDC vaccines, which are friendly to human body and have relatively high safety as they are extracted from human embryo. The market will be continuously improved in the future despite the relatively high price with people's enhanced awareness of vaccination with high-quality vaccines and the improvement of economic level. Meanwhile, the development of serum-free rabies vaccines will also drive market growth. It has adopted the serum-free cell cultivation technology and has more stable compositions and higher safety, and it is expected that the technology will account for approximately 35.0% of the rabies vaccine market in China by 2030. In addition, the mRNA rabies vaccine will also drive the development of the industry as such rabies vaccine is characterized by markedly decreased number of vaccinations, significantly accelerated pace of protective neutralizing antibodies generation and remarkably enhanced comprehensive protective effect. Further, it is easier to produce as its production does not involve complex processes of cell cultivation. It is expected that the mRNA rabies vaccine will account for approximately 21.2% of the rabies vaccine market in China by 2030.

As of June 30, 2024, there is no approved RSV vaccine in China. However, RSV is one of the important causes of acute lower respiratory tract infection, bronchitis and pneumonia in children and the elderly, so the RSV vaccine is in great demand in the market. There is no anti-virus specific drug approved for clinical use for RSV in the world. As at May 31, 2024, the mRNA RSV vaccine of Moderna was approved for marketing in the United States and was the first non-COVID-19 mRNA vaccine approved in the world, which ushered in the new climax of mRNA technology application in the area of vaccine. The RSV vaccine market in China is expected to exceed RMB15.4 billion in 2030.

Shingles/herpes zoster is a common disease and often occurs in the middle-aged and the elderly. This disease could result in inflammation and necrosis of the affected nerves, causing severe neuralgia that can last for months or even years. Therefore, the application of vaccines plays an important role in the prevention and control of shingles/herpes zoster. Further, the introduction of mRNA technology for the development of shingles/herpes zoster vaccine could provide better protection for the vaccinated population. As it can induce strong innate and adaptive immunity, it ensures the effectiveness and safety while providing long-lasting immunological protection effect, which addresses the pain point of low safety of existing shingles/herpes zoster vaccines. As predicted by an industry consultant, the global market of shingles/herpes zoster vaccine is expected to reach US$23.9 billion in 2030. Currently, the vaccination rate of shingles/herpes zoster vaccine in the target population in China is only about 0.1%, leaving much room for improvement. It is expected to reach a market size of nearly RMB20.0 billion in China by 2030 with the continuous improvement of people's healthcare awareness in the future.

On the other hand, in terms of sales, the total market size of the vaccine industry in China increased by RMB61.7 billion in total from 2015 to 2022 at a compound annual growth rate of approximately 19.4% and is expected to increase to approximately RMB220.3 billion at a compound annual growth rate of 12.3% by 2030, which is significantly more rapid than the global market. By vaccine category, the market size of vaccines under the immunization program declined slightly, while vaccines not covered by the immunization programs became the driving factor for the continued expansion of the market size in China. The vaccine industry in China is expected to continue to grow rapidly as pharmaceutical companies continue to conduct research and development, innovative vaccines covering more diseases and more serotypes/subtypes become increasingly popular, average life expectancy and ageing population ratio increase, and health awareness, vaccination awareness and average disposable income of the PRC residents increase. At the same time, the COVID-19 pandemic has had a profound impact on the vaccine industry. The research and development of the COVID-19 vaccine has accelerated the development of pharmaceutical companies in technological innovation, and vaccines with new technological routes such as mRNA and recombinant adenovirus vaccines have sprung up, and vaccine companies have ushered in opportunities to upgrade technological innovation. The COVID-19 vaccine has become a well-known anti-epidemic product, and with the increasing vaccination awareness among PRC residents, the demand for vaccination is expected to be boosted in the long run. Against this background, the vaccine industry in China is expected to enter a new stage of development in terms of iterative upgrading of vaccine technology platforms, research and development of new products and adult market expansion and other areas.

Prospects and Outlook

In recent years, the vaccine industry in China has strengthened the monopoly advantage of vaccines in disease prevention, elevated the status of vaccines in the overall biomedical industry, and facilitated the industrialization of new technologies for biotechnology and the implementation of related policies, establishing a foundation for the long-term development of the vaccine industry. The significant increase in exports of vaccines has greatly boosted the confidence of Chinese pharmaceutical companies in their international expansion.

It is worth mentioning that our research and development pipelines align with national policies. Our five technology platforms cover all the vaccine technologies that are encouraged and supported by the government as mentioned above and have been verified, with the research and development of related vaccine products rapidly progressing.

Furthermore, in order to accelerate the promotion of internationalized business, the Company specifically set up an international business department to push forward the implementation of a series of internationalized layouts, and is ready in all aspects such as overseas marketing permission, product research and development and manufacturing. The Company's vaccine products are entering the global market.

At present, the Company has various specific overseas markets and has begun the registration of marketed products in regions such as Southeast Asia, Africa, South America and the Middle East. The Company's rabies vaccine has obtained the registration licenses in countries such as Pakistan. In the first half of 2024, the Company's rabies vaccines were sent to Côte d'Ivoire and Pakistan, making new progress in developing the markets in Africa and along the Belt and Road. Group A, C, Y and W135 MPSV (also known as tetravalent meningococcal polysaccharide vaccine) (MPSV4) was successfully exported to Egypt and Tajikistan, helping the local meningitis prevention and control. The Company has signed a memorandum of understanding with representatives from Pakistan, promoting the sales of commercialized vaccine products in Pakistan.

In terms of products under development, the Company has set up product pipelines with close reference to the needs of the international market. In accordance with the latest World Health Organization's vaccine prequalification list (2024-2026), the Company is rapidly promoting the research and development of the 13-valent pneumonia conjugate vaccine and the tetravalent meningococcal conjugate vaccine, both being high-priority qualified vaccines. In addition, the Company is proactively researching and developing the RSV vaccine and the shingles/herpes zoster vaccine, both of which are also the varieties in short supply in the international market. The Company is making efforts to promote the marketing registration and sale of these products within and outside China, and to achieve the World Health Organization's prequalification for the vaccines.

In terms of on-sale products, we have successively launched a series of whole-process temperature monitoring vaccine products to ensure the safety and effectiveness of the vaccines, including freeze-dried human rabies vaccine (Vero cell), recombinant HBV vaccine (Hansenula Polymorpha), Group A, C, Y and W135 MPSV (MPSV4), and inactivated HAV vaccine (HDC), which can adapt to more differentiated customer needs and provide different customers with choices of various product specifications, as well as achieve better temperature control and identification of vaccines. We will further upgrade our vaccine quality management level and enhance the market competitiveness of our products.

In terms of production capacity construction, the Company has completed the construction of GMP workshops for iterative pneumonia series vaccines and iterative rabies series vaccines in batches, and all of these workshops meet the international standards. Phase III clinical samples of 13-valent pneumonia conjugate vaccine and 23-valent pneumonia polysaccharide vaccine are produced in these workshops, helping the Company get fully ready for the quick entry into the overseas market of such products upon marketing.

In conclusion, we expect to make significant progress in vaccine research and development in 2024 and speed up the launching of new products. We are committed to accomplishing our mission to develop and manufacture top quality vaccines to safeguard the health of the world.

Financial Review

Overview

The following discussion is based on, and should be read in conjunction with, the financial information and the notes included elsewhere in this announcement.

Revenue

	Six months ended June 30,	
	2024	2023
	RMB'000	*RMB'000*
Revenue from sales of vaccine products		
Revenue from sales of Class I vaccine	**54,100**	33,942
Revenue from sales of Class II vaccine	**483,078**	506,528
Total	**537,178**	540,470

The Company's revenue from its primary business was RMB537.2 million in the first half of 2024, representing a decrease of RMB3.3 million, as compared to the revenue from its primary business of RMB540.5 million in the first half of 2023, which remained basically flat.

Cost of Sales

The Company's cost of sales primarily consisted of manufacturing cost, raw materials cost, direct labor cost and transportation cost.

The Company's cost of sales amounted to RMB148.9 million in the first half of 2024, representing an increase of RMB41.1 million or 38.1%, as compared to the cost of sales of RMB107.8 million in the first half of 2023, primarily due to the decline in production volume of some of the products and the increase in manufacturing expenses directly included in cost of sales in the first half of 2024.

Gross Profit and Gross Margin

The Company's gross profit amounted to RMB388.3 million in the first half of 2024, representing a decrease of RMB44.3 million or 10.3%, as compared to the gross profit of RMB432.6 million in the first half of 2023, primarily due to the increase in costs.

The Company's gross margin amounted to 72.3% in the first half of 2024, representing a decrease of 7.8%, as compared to the gross margin of 80.1% in the first half of 2023, primarily due to the decline in production volume of some of the products and year-on-year increase in cost of sales in the first half of 2024, resulting in a decline in gross margin.

Other Income and Gains

The Company's other income and gains were primarily derived from income from government grants and bank interest income.

The Company's other income and gains were RMB13.4 million in the first half of 2024, representing a decrease of RMB7.6 million or 36.2%, as compared to the other income and gains of RMB21.0 million in the first half of 2023, primarily due to the year-on-year decrease in the government grants received by the Company in the first half of 2024.

Our operating expenses mainly include selling and distribution expenses, administrative expenses, and research and development costs. The following table sets forth a breakdown of our operating expenses:

	Six months ended June 30,	
	2024	2023
	RMB'000	*RMB'000*
Research and development costs	**170,110**	398,529
Selling and distribution expenses	**232,240**	224,902
Administrative expenses	**124,613**	115,659
Total	**526,513**	739,090

Research and Development Costs

Nature	Six months ended June 30, 2024 *RMB'000*	2023 *RMB'000*
Staff cost	**46,198**	50,308
Research materials costs	**20,886**	41,797
Professional service fees	**64,131**	249,211
Depreciation and amortization	**18,145**	23,542
Utility cost	**13,866**	26,087
Others	**6,884**	7,584
Total	**170,110**	398,529

The Company's research and development costs amounted to RMB170.1 million in the first half of 2024, representing a decrease of RMB228.4 million or 57.3%, as compared to the research and development costs of RMB398.5 million in the first half of 2023, primarily due to a year-on-year decrease in research and development costs related to overseas clinical trials of the Company in the first half of 2024. Meanwhile, in addition to the 13-valent pneumonia conjugate vaccine which has submitted pre-application for marketing registration, the iterative serum-free rabies vaccine and the 23-valent pneumonia polysaccharide vaccine also entered into Phase III clinical trial stage in July 2023 and August 2023, respectively, and have completed on-site work for Phase III clinical trials. According to the accounting policies of the Company, the research and development costs related to Phase III clinical trials for the above 3 vaccines will be charged to deferred development costs, resulting in a year-on-year decrease in research and development costs.

Selling and Distribution Expenses

The Company's selling and distribution expenses primarily consisted of marketing and promotion expenses, staff cost and market outreach expenses, etc. The marketing and promotion expenses primarily consisted of costs and expenses paid to our CSOs for various marketing and academic promotion activities, industry research and post-sales customer service. The staff cost primarily included salaries, benefits and other compensation for our sales staff.

The Company's selling and distribution expenses amounted to RMB232.2 million in the first half of 2024, representing an increase of RMB7.3 million or 3.3%, as compared to the selling and distribution expenses of RMB224.9 million in the first half of 2023, primarily due to the year-on-year increase in marketing and promotion expenses, partially offset by the decrease in staff cost and market outreach expenses.

Administrative Expenses

The Company's administrative expenses primarily consisted of staff cost, depreciation and amortization and professional service fees, etc.

The Company's administrative expenses amounted to RMB124.2 million in the first half of 2024, representing an increase of RMB8.5 million or 7.4%, as compared to the administrative expenses of RMB115.7 million in the first half of 2023, primarily due to the impact of the reversal of equity incentive expense on the administrative expenses in the first half of 2023, with no equity incentive expense in administrative expenses in the first half of 2024, resulting in the year-on-year increase in administrative expenses.

Impairment Losses on Financial Assets

The Company's provision for impairment losses on financial assets amounted to RMB3.9 million in the first half of 2024, representing an increase of RMB0.2 million, as compared to the provision for impairment losses on financial assets of RMB3.7 million in the first half of 2023.

Finance Costs

The Company's finance costs primarily consisted of interest on bank loans and interest on lease liabilities.

The Company's finance costs amounted to RMB30.0 million in the first half of 2024, representing an increase of RMB10.8 million or 56.6%, as compared to the finance costs of RMB19.2 million in the first half of 2023, primarily due to the increase in bank loans resulting in the increase in interest of corresponding loan.

Income Tax Expenses

The Company's income tax was a credit of RMB14.0 million in the first half of 2024, representing a decrease of RMB38.4 million or 73.2%, as compared to the amount of income tax credit of RMB52.4 million in the first half of 2023, primarily due to the year-on-year decrease in loss before tax in the first half of 2024.

Loss for the Period

The Company's loss amounted to RMB145.3 million in the first half of 2024, representing a decrease of RMB112.2 million or 43.6%, as compared to the loss of RMB257.4 million in the first half of 2023, primarily due to a year-on-year decrease in research and development costs in the first half of 2024.

Liquidity and Financial Resources

As at June 30, 2024, the Company's cash and cash equivalents and time deposits totaled RMB655.3 million, representing a decrease of RMB81.1 million or approximately 11.0%, as compared to the cash and cash equivalents and time deposits of RMB736.4 million as at December 31, 2023, and such decrease was mainly for operating costs and deferred development costs for research and development.

As at June 30, 2024, the Company's current assets amounted to approximately RMB2,478.7 million, and the current liabilities amounted to approximately RMB2,912.0 million. The net current liabilities amounted to RMB433.2 million, representing an increase of RMB314.2 million, as compared to the net current liabilities of RMB119.0 million as at December 31, 2023, primarily due to repayments in the first half of the year being generally lower than those in the second half of the year, the development expenditure of a number of products under development and the continued investment in deferred development costs of the 13-valent pneumonia conjugate vaccine, the iterative serum-free rabies vaccine, and the 23-valent pneumonia polysaccharide vaccine. The Group has carefully considered its projected future cash flows, continuously made efforts to generate sufficient cash flows from operation, and taken measures to accelerate the collection of the outstanding trade receivables, improve sales and control the pace of the Group's business expansion and capital expenditure, in order to reserve sufficient working capital for the Group's operation. The Group has maintained good credit and loan renewal records with the banks. The Group renewed bank loans of RMB305 million after June 30, 2024, of which RMB50.0 million has not yet been drawn down. Taking into account the above plans and measures, the Group confirmed that it would have enough working capital to provide funds for its operation and perform its financial obligations when they fall due in the foreseeable future.

Inventories

The Company's inventories balance amounted to RMB488.1 million as at June 30, 2024, representing a decrease of RMB21.8 million or 4.3%, as compared to the inventories balance of RMB509.9 million as at December 31, 2023, primarily due to the inventory management of the Company and the decline in inventory at the end of the period.

Trade Receivables

The carrying amount of the Company's receivables amounted to RMB1,094.1 million as at June 30, 2024, representing an increase of RMB89.0 million or 8.9%, as compared to the carrying amount of receivables of RMB1,005.1 million as at December 31, 2023, primarily because the repayments in the first half of the year were generally lower than those in the second half of the year.

Capital Expenditure

The Company's capital expenditure amounted to RMB119.5 million in the first half of 2024, primarily for constructing new production facilities, purchasing new equipment for the industrialization of pipeline vaccines and upgrading current manufacturing facilities, and the capitalized expenditure of the vaccine candidate development. The Company's capital expenditure in the first half of 2024 increased by RMB8.5 million or 7.6%, as compared to RMB111.0 million in the first half of 2023, primarily because, in addition to the 13-valent pneumonia conjugate vaccine which has submitted pre-application for marketing registration in February 2024, both the 23-valent pneumonia polysaccharide vaccine and the iterative serum-free rabies vaccine were in the Phase III clinical stage in the first half of 2024 and have completed on-site work for the Phase III clinical trial so far. According to the accounting policies of the Company, the development expenditure related to the above products has been included in deferred development costs, representing a year-on-year increase in the amounts of research and development to be capitalized.

Borrowings and Gearing Ratio

The Company's total financial indebtedness (including interest-bearing bank borrowings, lease liabilities and amounts due to related parties) amounted to RMB1,960.6 million as at June 30, 2024, representing an increase of RMB165.0 million or 9.2%, as compared to the total financial indebtedness of RMB1,795.6 million as at December 31, 2023, primarily due to the increase in bank borrowings in the first half of 2024.

The Company's gearing ratio (calculated by dividing total financial indebtedness by total equity as of the end of the period) was 52.4% as at June 30, 2024, representing an increase of 6.2%, as compared to the gearing ratio of 46.2% as at December 31, 2023, mainly due to the increase in the balance of bank borrowings.

Charge on Assets

As of June 30, 2024, part of the Group's bank loans were secured by (1) mortgages over the Group's buildings, which had a net carrying value as of June 30, 2024 of approximately RMB250.5 million (December 31, 2023: approximately RMB259.4 million); (2) mortgages over the Group's leasehold land, which had a net carrying value as of June 30, 2024 of approximately RMB58.0 million (December 31, 2023: approximately RMB59.0 million); and (3) guarantees provided by the Company and subsidiaries of the Group.

Save for the above, as of June 30, 2024, the Group did not have any other charges over its assets.

Foreign Exchange Exposure

Most of the Group's businesses and all bank loans have been traded in RMB so there is no significant foreign exchange fluctuation risk. The Board does not expect that fluctuations in the RMB exchange rate and exchange fluctuations of other foreign currencies will have a significant impact on the Group's business or performance. The Group currently has no relevant foreign exchange risk hedging policies and therefore it has not carried out any hedging transactions to manage the potential risks of foreign currency fluctuations.

Contingent Liabilities

As of June 30, 2024, the Group did not have any significant contingent liability that would have a material impact on its financial position or results of operations.

CORPORATE GOVERNANCE AND OTHER INFORMATION

The Model Code for Securities Transactions by Directors and Supervisors

The Company has devised its own code of conduct regarding Directors' and Supervisors' dealings in the Company's securities on terms no less exacting than the Model Code. The Company has made specific inquiries to all Directors and Supervisors and they all confirmed that they have complied with the standards specified in the Company's own code for the six months ended June 30, 2024.

Corporate Governance Code

The Board has adopted the code provisions of the Corporate Governance Code. The Board has reviewed the Company's corporate governance practices and is satisfied that the Company has complied with the code provisions set out in Part 2 of the Corporate Governance Code for the six months ended June 30, 2024, with the exception of code provision C.2.1, which requires the roles of chairman and chief executive to be held by different individuals.

Pursuant to code provision C.2.1 in Part 2 of the Corporate Governance Code, the roles of chairman and chief executive should be separate and should not be performed by the same individual. Mr. Yan ZHOU, the chairman of the Board and chief executive officer, currently performs both of these roles. The Board believes that, in view of the experience, personal profile and role of Mr. Zhou in the Company, Mr. Zhou has an extensive understanding of our business as the chief executive officer of the Company and is therefore the Director best suited to identify strategic opportunities and to be the core of the Board. The combined role of chairman of the Board and chief executive officer of the Company by the same individual can promote the effective execution of strategic initiatives and facilitate the flow of information between the management and the Board. The Board will continue to review and consider splitting the roles of chairman of the Board and the chief executive officer at an appropriate time, taking into account the circumstances of the Group as a whole.

Purchase, Sale or Redemption of the Company's Listed Securities

For the six months ended June 30, 2024, neither the Company nor any of its subsidiaries had purchased, sold or redeemed any of the Company's listed securities (including sale of treasury shares). As at June 30, 2024, the Company did not hold any treasury shares.

Employee and Remuneration Policy

As of June 30, 2024, we had approximately 1,557 employees, as compared to approximately 1,572 employees as of June 30, 2023. Total employee benefits expenses including Directors' remuneration in the first half of 2024 amounted to RMB180.4 million, as compared to the expenses of RMB175.2 million in the first half of 2023. Remuneration is determined with reference to performance, skills, qualifications and experience of the staff concerned and in accordance with the prevailing industry practice.

In addition to salaries and bonuses, other employee benefit expenses include pension, housing fund, medical insurance and other social insurance, as well as share-based payment expenses and others. We have adopted the employee stock incentive scheme prior to the IPO to offer valuable incentives to attract and retain quality personnel. We have been evaluating, and may adopt, new stock incentive schemes that comply with the requirements of the Listing Rules. The remuneration of the Directors is reviewed by the Remuneration Committee and approved by the Board. The relevant Director's experience, duties and responsibilities, time commitment, the Company's performance and the prevailing market conditions are taken into consideration in determining the emolument of the Directors.

Significant Investments, Acquisitions and Disposals

We did not have any significant investments, material acquisitions or material disposals of subsidiaries, associates and joint ventures for the six months ended June 30, 2024.

Future Plans for Material Investments and Capital Assets

As of the date of this announcement, the Group did not have future plans for material investments or capital assets.

Use of IPO Proceeds

We received approximately HK$91.61 million in net proceeds (the "**Net Proceeds**") from the IPO. Since the completion of the IPO, the Company has been utilizing, and intends to continue to utilize, the Net Proceeds in the manner consistent with that mentioned in the section headed "Future Plans and Use of Proceeds" of the Prospectus and the announcement of the Company dated October 23, 2023 relating to the change in use of proceeds from the IPO (the "**Announcement on Change in Use of IPO Proceeds**"). The use of Net Proceeds for the six months ended June 30, 2024 is set forth below:

	Net Proceeds allocated for related purposes *(HK$'000)*	Percentage of total Net Proceeds *(%)*	Unutilized Net Proceeds as of December 31, 2023 *(HK$'000)*	Actual use of proceeds during the six months ended June 30, 2024 *(HK$'000)*	Unutilized proceeds as of June 30, 2024 *(HK$'000)*	Expected timing for full utilization of the unused amount
1. The development of vaccines related to the mRNA technology platform	38,747	42.30	–	–	–	N/A[1]
2. The development of our pneumonia vaccine candidates, including PCV13, PCV20 and PPSV23	6,412	7.00	–	–	–	N/A[2]
3. The development of other vaccine candidates in our pipeline	9,801	10.70	–	–	–	N/A[1]
4. To fund the capital expenditure on the construction of new production facilities for our new vaccine products, as follows:	32,060	35.00	18,850	133	18,717	
(1) to fund the capital expenditure on the new mRNA vaccine production facilities in Ningbo	23,503	25.66	18,850	133	18,717	On or before December 31, 2024
(2) to fund the capital expenditure on construction of new production facilities by AIM Rongyu for iterative serum-free rabies vaccine, including:	8,557	9.34	–	–	–	
(i) equipment procurement	5,575	6.09	–	–	–	N/A[1]
(ii) plant decontamination and renovation, and equipment installation and testing	2,982	3.25	–	–	–	N/A[1]
5. To be invested in our sales and marketing activities	4,590	5.00	–	–	–	N/A[3]
Total	**91,610**	**100.00**	**18,850**	**133**	**18,717**	

Notes:

(1) As of December 2023, the Net Proceeds allocated for development of vaccine candidates in our mRNA technology platform, development of other vaccine candidates in our pipelines, and construction of new production facilities by AIM Rongyu for iterative serum-free rabies vaccine were fully utilized.

(2) As of June 2023, the Net Proceeds allocated for development of pneumonia vaccine candidates (including PCV13, PCV20 and PPSV23) were fully utilized.

(3) The Net Proceeds allocated for investing in sales and marketing activities were fully utilized during January 2023.

Interim Dividend

No interim dividend was declared by the Board for the six months ended June 30, 2024.

Audit Committee

The Company has established the Audit Committee in accordance with Rule 3.21 of the Listing Rules and the Corporate Governance Code and set out the terms of reference. As of June 30, 2024, the Audit Committee consisted of five members, namely Professor Ker Wei PEI, Mr. Hui OUYANG, Mr. Xiaoguang GUO, Mr. Jie ZHOU and Mr. Xin ZHOU; Professor Ker Wei PEI, Mr. Hui OUYANG and Mr. Xiaoguang GUO were independent non-executive Directors, and Mr. Jie ZHOU and Mr. Xin ZHOU were non-executive Directors. Professor Ker Wei PEI was the chairman of the Audit Committee and possessed the appropriate professional qualifications.

The unaudited interim condensed consolidated financial information of the Group for the six months ended June 30, 2024 has been reviewed by the Audit Committee.

As Mr. Jie ZHOU and Mr. Xin ZHOU were re-designated as executive Directors on August 29, 2024, they ceased to be members of the Audit Committee with effect from August 29, 2024.

Material Matters after the Reporting Period

No material matter has occurred since June 30, 2024 and up to the date of this announcement.

Publication of the Interim Results Announcement and Interim Report

This results announcement is published on the HKEx website at www.hkexnews.hk and the Company's website at www.aimbio.com. The interim report of the Company for the six months ended June 30, 2024 will be published on the websites mentioned above and dispatched to the Shareholders in due course.

"AIM Action"	AIM Action BioPharm Co., Ltd. (艾美行動生物製藥有限公司) (previously known as AIM Kanghuai Biopharmaceutical (Jiangsu) Co., Ltd. (艾美康淮生物製藥(江蘇)有限公司)), a company incorporated under the laws of PRC on October 13, 2011, a wholly-owned subsidiary of our Company;
"AIM Explorer"	AIM Explorer Biomedical R&D Co., Ltd. (艾美探索者生命科學研發有限公司), a company incorporated under the laws of PRC on September 10, 2018, a wholly-owned subsidiary of our Company;
"AIM Honesty"	AIM Honesty Biopharmaceutical Co., Ltd. (艾美誠信生物製藥有限公司), a company incorporated under the laws of PRC on September 20, 1993, a wholly-owned subsidiary of our Company;
"AIM Innovator"	AIM Innovator Biomedical Research (Shanghai) Co., Ltd. (艾美創新者生物醫藥研究(上海)有限公司), a company incorporated under the laws of PRC on May 17, 2021 and owned as to 95% by our Company, 1% by each of AIM Action, AIM Honesty, AIM Persistence, AIM Responsibility Biopharmaceutical (Liaoning) Co., Ltd. (艾美責任生物製藥(遼寧)有限公司) (a company incorporated under the laws of PRC on January 28, 2023 and a wholly-owned subsidiary of our Company), and AIM Rongyu;
"AIM Liverna"	Liverna Therapeutics Inc. (珠海麗凡達生物技術有限公司), a company incorporated under the laws of PRC on June 21, 2019 and owned as to 50.1546% by our Company. The other minority shareholders of AIM Liverna are Independent Third Parties;
"AIM Persistence"	AIM Persistence Biopharmaceutical Co., Ltd. (艾美堅持生物製藥有限公司) (previously known as AIM Weixin Biopharmaceutical (Zhejiang) Co., Ltd. (艾美衛信生物藥業(浙江)有限公司)), a company incorporated under the laws of PRC on December 24, 2002 and owned as to 96.45% by our Company and 3.55% by Shanghai Beibi Road Cultural Development Co., Ltd. (上海北壁之路文化發展有限公司), a company incorporated under the laws of PRC on March 28, 2017, a wholly-owned subsidiary of our Company;

"AIM Rongyu"	AIM Rongyu (Ningbo) Biopharmaceutical Co., Ltd. (艾美榮譽(寧波)生物製藥有限公司), formerly known as Ningbo Rong'an Biological Pharmaceutical Co., Ltd. (寧波榮安生物藥業有限公司), a company incorporated under the laws of PRC on April 30, 2001 and owned as to 20% by our Company and 80% by AIM Persistence;
"Audit Committee"	the audit committee of the Board of Directors;
"Board" or "Board of Directors"	the board of Directors of our Company;
"CDC(s)"	Centre(s) for Disease Control and Prevention (疾病預防控制中心);
"China" or "the PRC"	the People's Republic of China, which for the purpose of this announcement only, references to "China" or "the PRC" exclude Taiwan, Macau Special Administration Region and Hong Kong;
"Companies Ordinance"	the Companies Ordinance (Chapter 622 of the Laws of Hong Kong), as amended, supplemented or otherwise modified from time to time;
"Company", "our Company", or "the Company"	AIM Vaccine Co., Ltd. (艾美疫苗股份有限公司), a joint stock company incorporated in the PRC with limited liability on November 9, 2011;
"Corporate Governance Code"	the Corporate Governance Code as set out in Appendix C1 to the Listing Rules;
"COVID-19"	the Coronavirus Disease 2019;
"CSO(s)"	contract sales organization(s);
"CTA"	clinical trial application, the PRC equivalent of investigational new vaccine application;
"Director(s)" or "our Director(s)"	the director(s) of our Company;
"Domestic Share(s)"	ordinary share(s) in the share capital of the Company with a nominal value of RMB1.00 each, which is (are) subscribed for and paid up in Renminbi by PRC domestic investors and not listed on any stock exchange;
"FDA"	the U.S. Food and Drug Administration;

"GMP"	Good Manufacturing Practice, guidelines and regulations from time to time issued pursuant to the PRC Drug Administration Law (《中華人民共和國藥品管理法》) as part of quality assurance which aims to minimize the risks of contamination, cross contamination, confusion and errors during the manufacture process of pharmaceutical products and to ensure that pharmaceutical products subject to these guidelines and regulations are consistently produced and controlled in conformity to quality and standards appropriate for their intended use;
"Group A, C, Y and W135 MPSV" or "MPSV4"	Group A, C, Y and W135 MPSV, a vaccine used for the prevention of epidemic cerebrospinal meningitis in children aged above two years old;
"Group", "the Group", "our Group", "we" or "us"	our Company and its subsidiaries;
"H Share(s)"	overseas listed foreign share(s) in the issued share capital of the Company, with a nominal value of RMB1.00 each, listed on the Stock Exchange;
"HAV"	hepatitis A virus;
"HBV"	hepatitis B virus;
"HDC"	human diploid cell;
"HFMD"	hand foot and mouth disease;
"HFRS"	hemorrhagic fever with renal syndrome;
"HK$" or "Hong Kong dollars" or "HK dollars"	Hong Kong dollars, the lawful currency of Hong Kong;
"HKEx"	Hong Kong Exchanges and Clearing Limited;
"Hong Kong" or "HK"	the Hong Kong Special Administrative Region of the PRC;
"Independent Third Party(ies)"	an individual or a company which, to the best of our Directors' knowledge, information and belief, having made all reasonable enquiries, is not a connected person of the Company within the meaning of the Listing Rules;
"IPO"	the initial public offering and listing of the Company's H Shares on the Main Board of the Stock Exchange on October 6, 2022;

"Licensed Manufacturing Facility"	our manufacturing facility in each of AIM Rongyu, AIM Honesty, AIM Action and AIM Persistence, which have obtained valid production permits and passed GMP inspections, each a Licensed Manufacturing Facility, collectively Licensed Manufacturing Facilities;
"Listing Rules"	the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited;
"Main Board"	the stock exchange (excluding the option market) operated by the Stock Exchange which is independent from and operated in parallel with the Growth Enterprise Market of the Stock Exchange;
"Model Code"	Model Code for Securities Transactions by Directors of Listed Issuers as set out in Appendix C3 to the Listing Rules;
"mRNA"	messenger ribonucleic acid or messenger RNA, a single-stranded molecule of RNA that corresponds to the genetic sequence of a gene, and is read by a ribosome in the process of synthesizing a protein;
"NDA"	new drug application (藥品註冊證書申請);
"NDA approval"	new drug application approval (藥品註冊證書批准);
"NIFDC"	the National Institutes for Food and Drug Control of the PRC (中國食品藥品檢定研究院);
"NMPA"	the National Medical Products Administration (國家藥品監督管理局) and its predecessor, the China Food and Drug Administration (國家食品藥品監督管理總局);
"PCV"	pneumonia conjugate vaccines;
"Prospectus"	the Company's prospectus dated September 23, 2022;
"Remuneration Committee"	the remuneration and appraisal committee of the Board of Directors;
"RMB" or "Renminbi"	Renminbi, the lawful currency of the PRC;
"RSV"	respiratory syncytial virus;
"Share(s)"	ordinary share(s) in the issued share capital of our Company with a nominal value of RMB1.00 each;
"Shareholder(s)"	holder(s) of our Shares;
"Stock Exchange"	The Stock Exchange of Hong Kong Limited;

"subsidiary(ies)"	has the meaning ascribed thereto in section 15 of the Companies Ordinance;
"Unlisted Foreign Share(s)"	ordinary share(s) issued by the Company with a nominal value of RMB1.00 each, which is (are) held by non-PRC investors and not listed on any stock exchange;
"Unlisted RMB Denominated Ordinary Share(s)"	Domestic Share(s) and/or Unlisted Foreign Share(s) (as the case may be); and
"%"	percentage.

By order of the Board
AIM Vaccine Co., Ltd.
Mr. Yan ZHOU
Chairman of the Board,
Executive Director and Chief Executive Officer

Hong Kong, August 29, 2024

As at the date of this announcement, the Board of Directors of the Company comprises Mr. Yan ZHOU, Mr. Xin ZHOU, Mr. Wen GUAN, Mr. Shaojun JIA and Mr. Jie ZHOU as executive Directors; Mr. Jichen ZHAO and Ms. Aijun WANG as non-executive Directors; and Professor Ker Wei PEI, Mr. Hui OUYANG, Ms. Jie WEN and Mr. Xiaoguang GUO as independent non-executive Directors.