

U.S. Pharmaceutical Firm Prospects within the People's Republic of China

This overview of the Chinese pharmaceutical market examines the product, promotion, and distribution advantages, as well as the price disadvantage of foreign pharmaceutical joint ventures in the People's Republic of China. Prospects for foreign investment in the Chinese health care industry are evaluated positively based on current Chinese government policies in that area.

AMY YUDAN LUO,
 J. WARREN SALMON,
 AND BRUCE LAMBERT

AMY YUDAN LUO, M.S. (CANDIDATE), J. WARREN SALMON, PH.D., is Professor and Director of the Managed Care Pharmacy Residency Program, and BRUCE LAMBERT, PH.D., is Assistant Professor, Department of Pharmacy Administration, University of Illinois at Chicago. Ms. Luo has been a sales representative for SmithKline Beecham in China.

EDITOR'S NOTE: This issue of *JMCP* continues a periodic sharing of international comparisons of interest to AMCP members and *JMCP* readers. Health care system developments in other nations can often illuminate our own perceptions of U.S. health care, as well as help us reconsider our country's health policies. This piece and forthcoming articles reports on experiences elsewhere of concern to managed care and pharmaceutical industry representatives. Additional submissions of this type should be addressed to the address listed below.

REPRINTS: J. Warren Salmon, Department of Pharmacy Administration, University of Illinois at Chicago, 833 South Wood Street, M/C 871, Chicago, IL 60612; e-mail: u47586@uicvm.cc.uic.edu.

Copyright © 1996 Academy of Managed Care Pharmacy, Inc. All rights reserved.

With more and more international companies doing business in the People's Republic of China, much concern has been devoted to analyzing that country's business environment and the suitable marketing strategy appropriate for Chinese culture. Health care innovation has played a leading role in China's 17-year economic reform. But the Chinese government's policies in health care historically and currently are complex and dynamic.^{1,2} Is the Chinese pharmaceutical market stable and lucrative enough for foreign corporations to invest? And will current tense international political relations negatively affect the Chinese pharmaceutical industry? To help readers understand these issues, an overview of the current Chinese pharmaceutical market is presented here. Major advantages and disadvantages of foreign pharmaceutical joint ventures in China are analyzed. The trend of foreign investment in the Chinese health care industry is discussed in relation to Chinese government policies in that area.

BACKGROUND AND CONTEXT —

Since Chinese leader Deng Xiaoping opened China in 1979, other nations have marveled at China's enormous economic growth. In 1992 and 1993, the gross national product (GNP) growth for China was 13%. Efforts by the government to curb the overheated economy slowed the GNP growth to 11.8% in 1994. In 1995, the soft-landing of China's economy achieved a GNP 10% mark, which is impressive by all standards (Figure 1).³

Additionally, the People's Republic is now a valued trade partner with most advanced countries. In 1994, China's trade surplus was \$5.2 billion. Along with Japan, the U.S. is one of China's best customers for its goods and services.⁴ The approval of China's WTO (World Trade Organization) membership status is pending. At the Asia Pacific Economic Cooperation (APEC) forum held in Japan last November, Chinese president Jiang Zemin announced China's intention to cut tariffs on imports by 30% for its market of 1.2 billion people on more than 4,000 of the 6,000 items imported in 1996.⁵ According to the *Chicago Tribune* on November 20, "Foreign companies will be allowed to set up joint venture trading operations instead of being required to use state-run companies. This step is China's biggest trade liberalization since it launched economic reforms in 1979."⁵ The impact of this policy change on China's industry and foreign investment will help foster future economic development. In 1994, foreign investors poured \$81.4 billion into China; \$6 billion by Americans, behind Hong Kong/Macao, but ahead of Taiwan (\$5.4 billion), a major investor in the mainland despite the recent political troubles.⁴

However, these tensions between China and Taiwan might cause hesitation on the part of entrepreneurs considering investing in China. But talks with businessmen and ordinary people living in Beijing did not reveal much worry about China's military maneuvers off the Taiwan Strait, although it seems to be a heated topic in the U.S. press.

Business is still operating normally there. China's economic growth and political stability rely heavily on foreign funds.⁶

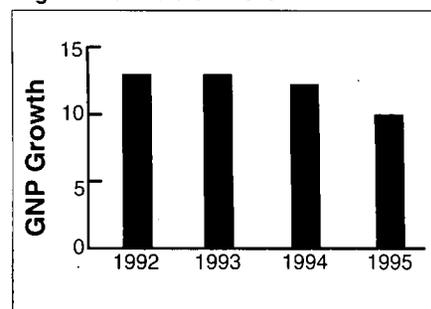
Issues that complicate China's foreign relations include the following⁷:

- ▲ The government's treatment of human rights dissidents;
- ▲ Violations of agreements on intellectual property (spurning the copyright laws);
- ▲ Nuclear technologies (the sale of bomb-making materials to Pakistan and Iran);
- ▲ The absorption of Hong Kong and Macao next year; and
- ▲ Political restrictions on the Internet.

Controls on population, pollution, corruption, and inflation remain problematic for the country. Regional disparities and the uneven economic and social development of urban versus rural areas present multiple dilemmas for Beijing under its new market advancement.⁸ Will an aggressive turn of events on the international level derail the economic boom achieved over the last 17 years? It remains to be seen if political borders will preoccupy the government at the cost of commercial orders from abroad. Much depends upon the influence of an increasingly belligerent Chinese military in the struggle over who will succeed Deng Xiaoping.⁹

PHARMACEUTICAL INDUSTRY —

During China's period of rapid economic growth, the pharmaceutical industry in China became a leading player. Pharmaceuticals account for 2.3% of China's total national industrial output, a figure expected to increase to 3% by the year 2000.¹⁰ Pharmaceuticals account for nearly 50% of current health care expenditures in China and constitute the largest single share of medical spending.¹¹ China is currently the second largest producer of pharmaceutical raw materials in the world. It has the world's seventh largest pharmaceutical market and is the second largest in Asia after Japan.¹² Its pharmaceutical market grows 10% every year. By the year 2000, pharmaceutical output is predicted to reach \$11 billion, 16 times the 1980s value.¹³ Although Chinese per

Figure 1. China's GNP Growth

capita consumption of medicines is still low compared with developed countries, the demand for western pharmaceuticals is increasing rapidly with improved living standards and the accumulation of wealth. International pharmaceutical manufacturers cannot ignore the lucrative potential of a 1.2 billion-plus person market.

Because of the complex distribution system and government policies in the health care sector, the best and easiest strategy for foreign-based companies entering the Chinese market is to form joint ventures with local companies.¹³ Otsuka, a Japanese firm, was the first foreign pharmaceutical manufacturer to enter a Chinese joint venture, in Tianjin in 1980. Since then, the pace of forming joint ventures has increased rapidly. In 1985, 15 joint ventures with foreign companies were set up; in 1992, the number increased to 232; in 1993, 612 joint ventures were formed, with a combined investment worth of \$600 million (see sidebar on foreign pharmaceutical joint ventures in China since 1990). Most of these ventures have been profitable. More than 3,000 pharmaceutical manufacturers operate in China. The top six joint ventures in this sector accounted for 7.3% of China's total pharmaceutical sales in 1989, 10.4% in 1990, and 13.6% in 1991. The sales growth of these ventures averaged 50% in 1989 and 1991.¹⁴ The State Statistics Bureau of China lists the leading pharmaceutical companies by pre-tax profit in 1992 (Table 1).

Table 1. Pre-tax Profits of Leading Chinese Companies

Company	Pre-Tax Profit(Yuan mill)
Xian Janssen ^a	199.0 (35.8 US \$)
Huabei-pharmaceutical General Works	183.0 (32.9 US \$)
Baiyunshan Group	137.0 (24.6 US \$)
Sino-US SKF ^a	123.0 (22.1 US \$)
Shenzhen Nanfang Pharmaceutical Factory	114.0 (20.5 US \$)
Shandong Xinhua Pharmaceutical Factory	83.7 (15.1 US \$)
Shanghai Squibb ^a	70.3 (12.6 US \$)
Zhuhai Lizhu Pharmaceutical Group	67.9 (12.2 US \$)
Shanghai Biological Products Research Institute	49.5 (8.9 US \$)
Changchun Biological Products Research Institute	36.8 (6.6 US \$)

^a Three joint ventures are among the top seven pharmaceutical companies (according to SmithKline document, the tax is around 33%.¹⁵

PRODUCT, PROMOTION, PRICE, AND PLACE

Several major advantages entice joint venture money to China, but barriers exist. Marketing's four "P's" provide a good framework for discussing both advantages and disadvantages.

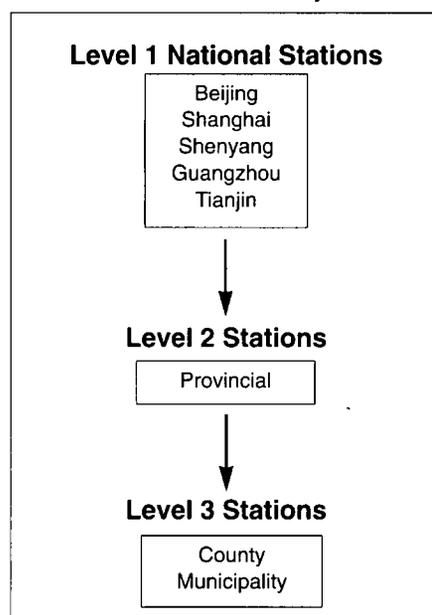
The first advantage for foreign joint ventures is *product*. The Great Wall protected the ancient Chinese from outside invasions for thousands of years. A symbolic wall blocked capitalism's entry into China since the Qing dynasty. In 1979, China reopened itself to outside investment. Western culture with its advanced technology has now been gradually accepted. Thousands of China's intelligent young men and women have been sent overseas, usually to study in Western universities. Foreign scholars have been invited to China for lectures and employment. In terms of science and technology, China has adopted an "open door" policy.¹⁶ But after being isolated for so many years and now suddenly facing advanced Western technology, many Chinese people fear the loss of national identity. One consequence of this is that most Chinese view foreign products as superior to their domestic counterparts, even though this is not necessarily so. Western medicine is very popular in China today. Foreign joint ventures' products are usually well-packaged and successfully marketed. Thus, even though the price of foreign medicines is at least twice as high as domestic varieties, they are often preferred by Chinese consumers, including physicians.

The second advantage is *promotion*. Promotion strategies of local manufacturers are distinctly different from those of joint ventures. Local companies rely heavily on the traditional distribution systems. In the traditional distribution system, pharmacists—especially directors of purchasing departments—determine ordering. By setting up good relations with these directors, local companies secure entry into targeted hospitals in which doctors prescribe medicines that are available in the pharmacy stocks only; however, China is reforming its health care system quickly, and the decision-makers are changing. Now that most hospitals are responsible for their own financing and profits, physician enthusiasm for prescribing is very important. Physicians are beginning to play a bigger role in determining which drugs will be stocked, and the amounts of ordering are based on how often the doctors prescribe particular drugs. In some large hospitals, physicians can prescribe out-of-stock drugs and the purchasing departments have to make the prescribed drugs available within a reasonable timeframe.

Although such changes are notable, most local companies' lay salespersons still visit pharmacists, instead of physicians. By offering the directors of the purchasing departments personal benefits, like cash or corresponding gifts per order of drugs, the local companies promote their sales.

In contrast with local companies, the promotion strategies adopted by foreign joint ventures are more fitting to

Figure 2. Three Tiers of the Chinese Pharmaceutical Distribution System



changing conditions. Every leading pharmaceutical joint venture hires many professional sales representatives (PSRs), typically graduates from colleges of medicine or pharmacy with more than three years of work experience. Manufacturers hire professional personnel to train salespersons at least three times each year, providing them with both selling skills and professional knowledge about the medicines. In addition to sales visits, the sales promotion strategies for foreign pharmaceutical joint ventures include seminars, promotional brochures, and a variety of prescribing incentives for physicians (i.e., free trips to scenic spots).

Beyond direct sales promotions, foreign pharmaceutical companies spend a lot on advertising in the mass media to create brand name awareness. Take SmithKline Beecham's common cold medicine, Contac, which is widely known in China. Contac is so distinguished from its competition that it gained a very high consumer loyalty. According to a SmithKline Beecham source, the company's mass media spending for Contac is 75% of its total promotion spending for the past four continuous years. Local companies'

Continued on page 245 ►

APPENDIX

Foreign Pharmaceutical Joint Ventures in the People's Republic of China (PRC) since 1989

1989

China's Imports:

1. *Daiichi Seiyaku Co. (Japan)/Harbin pharmaceutical company*
Supplied anticoagulant Pantosin. \$320,000. 10/89.
2. *NA (Austria)/Tangshan Starch Glucose Factory*
Sold equipment used to extract citric acid. Austrian government provided a loan for the sale. \$4.96 million. 1/89.

Investments in China:

1. *Finhe International Ltd. (Macao)/Tianjin Wine Co., Tianjin Foreign Trade, and Chemical Industry Co.*
Established Tianjin-Macao Emulsion Products Co., Ltd. Joint venture to produce condoms. \$2.15 million (reb 8 million). 10/89.
2. *NA (Finland)/Tongji-Hydron Joint Development Corp. (Joint venture between Hydron Co. [U.S.] and Tongji Medical University)*
Negotiating joint production of contraceptives. \$2 million. 9/89.
3. *NA (U.S.) Established Huirui Pharmaceutical Co., Ltd.*
To produce semisynthesized materials for antibiotics. 7/89.
4. *New World Co. (U.S.)/Chongqing, Sichuan Established New Hepar Biotechnology Develop-*

ment Co., Ltd.

Produced crude heparin sodium for further refinement in the U.S. and Sweden. \$600,000. 11/89.

5. *Xinli Pharmaceutical Import and Export Corp. (Hong Kong)/Shijiazhuang Zhongwing Industrial Corp.*

Established Union Pharmaceutical Corp., Ltd. Joint venture to produce 150 tons per year of sodium ampicillin. \$7.33 million. 11/89.

Other

1. *Yamanouchi Pharmaceutical Co. (Japan)*
Licensed eight Chinese firms to manufacture and market antibiotic josamycin. 9/89.
2. *The World Bank*
Provided loan to Suzhou No. 2 Pharmaceutical Factory to expand penicillin production. \$3 million.

1990

Investments in China

1. *Ciba-Geigy AG (Switzerland)*
Joint venture to manufacture and market products for treatment of diseases in poultry, sheep, and cattle. \$0.3 million. 2/90.
2. *NA (U.S.)/Qilu Pharmaceutical Plant*
Established joint venture to produce antibiotics mostly for export. \$6.6 million. 1/90.

3. *Pfizer, International, Inc. (U.S.)/Dalian Pharmaceutical Factory*

Began construction on Pfizer Pharmaceutical, Inc. Joint venture in Dalian ETDZ, to produce antibiotics and other medicines. \$35 million. 5/90.

4. *Akzo N.V. (Netherlands)/Nanjing No. 2 Pharmaceutical Co.*

Established equity joint venture to produce contraceptive devices. 7/90.

5. *Portugal*

Established joint venture to produce pharmaceuticals in Zhuhai, Guangdong Province. \$12 million. 9/90.

6. *NA (Hong Kong)/NA*

Established joint venture in Shanghai to produce caffeine primarily for export. 9/90.

7. *Huashan Co., Ltd. (Hong Kong)/Guangdong Pharmacy of Traditional Chinese Medicine No. 4.*

Established joint venture in Guang dong Province. \$260,000. 8/89.

8. *Marubeni Co. Ltd. (Japan) and Ciba-Geigy Corp. (Switzerland)/Changzhou Plant of Biochemical Pharmaceuticals*

Established joint venture in Jiangsu Province to produce protease. 8/90.

9. *Pfizer Pharmaceutical, Ltd. (U.S.)/Nanjing Pharmaceutical Plant*

Set up a workshop in Jiangsu Province to produce vitamin C for U.S. market. 8/90.

products have less loyalty. As Chinese consumers gradually get wealthier, people are more willing to pay for brand products out of their own pockets. Although such patients account for only a small proportion of the population today, the price for foreign OTC products is often 20 times or more than that of domestic competitors, so the sales value is still notable.¹⁷

The third major advantage for foreign pharmaceutical joint ventures in China is *distribution*. Understanding China's pharmaceutical distribution system is key to successfully marketing foreign drugs there. The Chinese pharmaceutical distribution system consists of three tiers: level 1, national stations in Beijing, Shanghai, Shenyang, Guangzhou, and Tianjin, which allocate products to the level 2 distributors at the provincial level, who sell to the third tier, level 3 stations within the counties or municipalities. At each level, a price mark-up is allowed (Figure 2).¹¹

Before Chinese health care reform was launched several years ago, hospitals and clinics purchased all products at their local level 3 stations,¹¹ but the shortcomings of the distribution system often resulted in supply disruption in the regions far away from the manufacturer's headquarters. Hospitals that faced frequent supply shortages would give up ordering certain products.¹¹

The changing health care situation makes this distribution system more flexible. Some foreign joint ventures sell their products directly to hospitals; thus, not only can they avoid supply disruption, but higher profits are generated by implementing higher price mark-ups. However, setting up one's own distribution network requires considerable effort and staff, and transport and bureaucratic obstacles must be overcome. Most foreign joint ventures and local companies prefer to rely on the traditional distribution system. Several larger foreign joint ventures market

their key products independently in key cities, while relying on the tiered system to reach other purchasers.¹¹

Price will be the last marketing issue discussed. The high price of foreign joint ventures' pharmaceuticals remains the primary disadvantage for them when competing with local companies. Chinese health care is not free. Only a minority of the population (mostly urban residents) have "free" or subsidized health care. Drug price is given a great deal of concern when Chinese physicians prescribe. Two major insurance schemes cover about 170 million people. About 140 million workers in state and collectively owned enterprises pay 11% of their salary into a labor insurance scheme; another 30 million employees of government, hospitals, universities, and other institutions receive "free" care under a state enterprise insurance system. An additional 90 million people are covered by rural cooperative schemes. The employees of private

10. *Shanghai Squibb Pharmaceuticals, Ltd., a Sino-U.S. joint venture*

Extended its manufacturing facilities, with emphasis on developing new products, upgrading equipment, and speeding up production. \$4.9 million. 8/90.

11. *Zhonghuya Commercial Co., Ltd. (Hong Kong)/Hangyu Microbiological Reagent Laboratory*

Established Zhejiang Dahua Pharmaceutical Industrial Co., Ltd. Joint venture to manufacture pharmaceuticals primarily for export. 8/90.

12. *Abbott International, Ltd., a subsidiary of Abbott Laboratories (U.S.)/Shanghai Medicine Industry Research Institute and Ningbo Pharmaceutical Factory*

Joint venture to produce reagents for clinical diagnosis went into operation in Ningbo, Jiangsu Province. \$4 million (U.S.: 50%-PRC: 50%). 11/90.

China's Investments Abroad

1. *Galenika Pharmaceutical Factory (Yugoslavia, YG)/Harbin No. 3 Pharmaceutical Factory*

Established Harbel Co., Ltd. Joint venture in Belgrade to produce natural tonics for European market. (YG: 50%-PRC:50%). 10/90.

Other

1. *Hong Kong Institute of Biotechnology (Hong Kong)/Yunnan Provincial Commission of Science and Technology*

Established Hong Kong-Yunnan Biotechnology Development Centre, a cooperative project designed to develop and commercialize biotechno-

logical products for export. 7/90.

2. *Glaxo Holdings PLC (U.K.)*

Opened Beijing office in the China World Trade Center. 9/90.

3. *World Bank*

Began construction of Central Plains Pharmaceutical Factory in Zhengzhou Province under World Bank Pharmaceuticals Project. \$98.2 million. 11/90.

1991

Investments in China

1. *Waterford Pharmaceuticals Ltd. (Ireland), a subsidiary of IVAX Corp. (U.S.)/National Institute of Pharmaceutical Research and Development*

Established joint venture in Beijing to develop, manufacture, and market inhalation products. (IR: 0%-PRC:50%). 2/91.

2. *Jialing Corp. (Hong Kong)/Sichuan Changzhen Pharmaceutical Plant and China Corporation for the Construction of Export Commodities Base*

Established Changzhen Pharmaceutical industry Co., Ltd. Joint venture to manufacture oxytetracycline. \$2.5 million. 1/91.

3. *Taisho Pharmaceutical Co., Ltd.*

(Japan)/Sichuan industrial Institute of Antibiotics, a branch of State Pharmaceutical Administration

Will jointly develop antibiotics. 1/91.

4. *Shenye Yihua Co., Ltd. (Hong Kong)/Dai Feng Pharmaceutical Factory and Zhaoqing No. 2 Chemical Raw Material Co.*

Established Kaifeng Sanhe Medicine Preparations Co., Ltd. To produce injection ampuls in Henan

Province. \$3.2 million. 4/91.

5. *SmithKline Beecham Corp. (U.S.) and NA (U.K.)/Tianjin Pharmaceutical Administration and Wuhan University*

Established joint venture to produce L-cystine. \$1.3 million. 4/91.

6. *Glaxo Co. (U.K.)/China National Pharmaceutical Foreign Trade Corp. and the Southwest No. 3 Pharmaceutical Factory*

Opened the Chongqing Glaxo Pharmaceuticals Ltd. joint venture to produce anti-asthma inhalers. \$10 million. 10/91.

7. *Cansia Trading Co. (Malaysia)/Beijing Huafeng Medicines Factory*

Beijing Liling Chinese Medicines Co., Ltd. Joint venture began production of drugs to cure impotence and other male sexual disorders. \$950,000. (Malaysia:20%-PRC:80%). 11/91.

8. *NA (Ireland)/NA Beijing Ji Ai Pharmaceutical Co., Ltd.*

Joint venture began production of sardine amine alcohol aerosol, a new cough medicine. \$150,000. 11/91.

Other

1. *NA (Spain)/Shanghai No. 3 and 4 Pharmaceutical Factories*

Provided Spanish technology to restructure pharmaceutical industry and to produce semisynthetic penicillin. \$8 million. 9/91.

1992

Investments in China

1. *Ivax Corp. (U.S.)/Kunming Pharmaceutical*

and joint venture companies are mostly reimbursed by their employers. Self-employed people pay all of their health care costs out-of-pocket.¹⁸

Because of their products' high prices, foreign pharmaceutical joint ventures mainly target those patients who are under the "free care" insurance scheme and a very small portion of wealthy people willing to pay for expensive brand products.

Medicines currently account for 60-70% of hospital costs in China, making this a large market as well.¹⁸ Government expenses for those under the "free care" scheme are huge, greatly exceeding budget every year. To limit the fast growth of government reimbursement, two major policies are gradually forming. First, some local governments are using many different techniques to connect hospital expenditures with hospitals' own interests, thereby attempting to reduce costs. Most hospi-

tals in China are responsible for their own financing and have expenditure ceilings set by the local government.¹⁹ If the hospital expenditure exceeds the ceiling, the hospital itself is responsible for the loss; if the expenditure is below the ceiling, the surplus is retained by the hospital. Thus, physicians are reluctant to prescribe expensive foreign products to patients under the free medical care scheme if cheaper domestic substitutes are available. These kinds of local policies are seriously curtailing foreign pharmaceutical joint ventures' sales volume and present a challenge for their salespersons.

The second policy designed to reduce government spending is a government reimbursement list. It is intended to limit the number of drugs that physicians can prescribe to patients. Only the drugs on the list can be covered by the "free care" scheme. According to James Fan, a Chinese pharmaceutical consul-

tant and general manager in JOINWIN, Beijing, the reimbursement list was based on several criteria: superseding old drugs with better, newer ones; encouraging development of new drugs locally; and excluding expensive foreign drugs with effects similar to those of locally manufactured drugs. No nonprescription products have been included on the reimbursement list. Because of the difference in consumption and salary levels, provinces, regions, and municipalities are permitted to "add up to 10% of the total number of drugs on the main state list to their own list of reimbursable products." This article also notes, "Shanghai's new system contains 1,400 pharmaceuticals, including 800 western products. Nanjing city's system includes restrictions on 140 expensive and imported products."²⁰

The reimbursement list was initially designed to restrict consumption by patients under the "free care" insurance

Factory

Signed agreement to establish the Kunming Ivax Pharmaceutical Co., Ltd. joint venture to produce six kinds of Ivax-patented medicine. \$8 million. (U.S.:51%-PRC:49%). 3/92.

2. IVAX Corp. (U.S.)/Kunming Pharmaceutical Factory (Yunan Province)

Formed Kunming Baker Norton Pharmaceutical Co. joint venture to produce and market tablets, capsules, and a line of pediatric and dermatologic products. \$2.1 million. (U.S.: 50%-PRC:50%). 10/92.

1993**Investments in China**

1. Epitec Inc. (U.S.)/China National Biological Products Corp.

Formed a joint venture to manufacture and distribute tests for AIDS virus. 2/93.

2. HB Co. (Germany)/Hunan Chinese Medicine Development Co., Hunan International Economic Development Co.

Formed the Hunan Wuma Pharmaceutical Co. Joint venture to research, produce, and market medicines. \$9.8 million. 3/93.

3. Merck & Co., Inc. (U.S.)/National Vaccine and Serum Institute (Beijing)

Opened joint-venture plant to produce hepatitis B vaccine. \$12 million. 10/93.

4. Sterling Drug, Inc. (U.S.)/Meiyou Pharmaceutical Factory (Shanghai)

Established joint venture to produce medicine. 10/93.

5. Upjohn Co. (U.S.)/NA (Suzhou)

Formed a joint venture to produce steroids and antibiotics. 10/93.

6. Cyanamid Co. (U.S.)/NA (Suzhou)

Establish joint-venture pharmaceutical company. \$13.2 million. 9/93.

7. Hoffmann-La Roche, Ltd. (Switzerland)/Sanwei Pharmaceutical Co. (Shanghai)

Launched joint venture to manufacture anti-cancer and cardiovascular products. \$30 million. (Switzerland:70%-PRC:30%). 9/93.

8. Ciba-Geigy, Ltd. (Switzerland)/Beijing General Pharmaceutical Corp., Beijing No.3 Pharmaceutical Factory

Opened Beijing Ciba-Geigy Pharma, Ltd. Plant to produce antirheumatic and anti-inflammatory medicines, as well as drugs for the central nervous and cardiovascular systems. \$21 million. (Switzerland:60%-PRC:40%). 12/93.

1994**Investments in China**

1. Calcol, Inc. (U.S.)/Shenzhen Changbaishan Co.

Formed Shenzhen Calcol Changbaishan Pharmacy Co., Ltd. to produce medicines for the domestic and international markets. \$25 million. (U.S.:60%-PRC:40%). 2/94.

2. Takeda Chemical Industries (Japan)/Tianjin Lisheng Pharmaceuticals

Established joint venture to produce medicines for the domestic and international markets. \$26 million. 2/94.

3. Hoffmann-La Roche, Inc. (Switzerland)/Shang-

hai San Wei Pharmaceutical Corp.

Established Shanghai Roche Pharmaceuticals Co. joint venture to produce drugs. \$30 million. (Switzerland:70%-PRC:30%). 1/94.

4. Cambrex Corp. (U.S.), Nichimen (NA)/Beijing No. 2 Pharmaceutical Factory

Formed joint venture to manufacture and market niacin and niacinamide. 6/94.

5. Copley Pharmaceutical Inc. (U.S.)/Chia Tai Health Care Group

Established joint venture to distribute and produce generic drugs in China. (U.S.:49%-PRC:51%). 6/94.

6. Merck & Co., Inc. (U.S.)/Shenzhen Kangtai Biological Products Co., Ltd.

Opened plant to manufacture hepatitis B vaccine. 6/94.

7. Yamanouchi Pharmaceutical Co.

(Japan)/Sheyang First Pharmaceutical Factory (Liaoning)

Established Shenyang Yamanouchi Pharmaceutical Co., Ltd. joint venture to manufacture and sell medical supplies for the Chinese market. \$29 million. (Japan:80%-PRC:20%). 6/94.

8. Zeneca Group PLC (U.K.)/Sino Farm, part of the State Pharmaceutical Administration of China

Established Zeneca Sino Farm Development Consulting Co. Joint venture to provide quality control, clinical practice, and technology transfer services to China. 6/94.

9. Hoechst AG (Germany)/North China Pharmaceuticals Corp.

Established joint venture to manufacture antibiotics and cardiovascular drugs in China. \$23.3 million. (Germany:50%-PRC:50%). 8/94.

scheme—people who were the major targets of foreign joint ventures. Observers believed that the government reimbursement list would seriously curtail sales by the foreign joint ventures. However, almost all the prescription drugs produced by joint ventures have been included on the government list as a result of heavy detailing by pharmaceutical sales representatives to relevant departments. Since nonprescription products are not included on the list, even cheaper domestic nonprescription drugs are not covered by free government insurance; patients must pay for all OTCs out-of-pocket. However, physicians can prescribe expensive foreign joint ventures' products—including nonprescription ones—without the reimbursement restrictions set by their local governments. Thus, for products shelved in drug stores, nonprescription agents with better brand awareness and consumer loyalty lead the market, and

these are typically foreign joint ventures with stronger sales promotion, financial support, and marketing experience. Considering the extensive advertising in the mass media, patient education, and successful sales visits, the foreign joint ventures' sales volume of nonprescription products could be even higher when the reimbursement list is formally and completely implemented.

FUTURE DEVELOPMENTS

Foreign pharmaceutical joint ventures have been playing a notable role in China's health care. According to Swanson, "Imported or joint venture products account for up to 20% (by value) of gastrointestinal and cough and cold remedy sales, and around five percent of painkiller sales in Beijing, Guangzhou, and Shanghai."¹⁷ Several Sino-Western pharmaceutical joint ventures have been singled out for criticism that they have

seriously damaged the growth of Chinese pharmaceutical industry.²¹

Although Chinese officials do not like to rely on foreign investment to develop the Chinese pharmaceutical industry, the national technology still lags some 10 or more years behind that of Western countries. A positive response by the Chinese authorities would be to hasten reform so that their own industry would become less dependent on the foreign investment.⁶ China will likely keep its door open to investment in the development of new products and related high technology, while cooperation involving products already manufactured locally in sufficient quantities will be discouraged.²² The five major causes of death in China in 1985 were: heart diseases; cerebrovascular diseases; malignant tumors; respiratory diseases; and digestive diseases.¹⁶ Any investment related to these conditions will continue to be welcomed. Other priority areas include transferring manufac-

10. Schering-Plough Corp. (U.S.)/Shanghai Corp. of Pharmaceutical Economic and Technical International Cooperation, Shanghai Pharmaceutical Industry Corp.

Established Shanghai Schering-Plough Pharmaceutical Co., Ltd. joint venture to manufacture drugs. \$15 million. (U.S.:55%-PRC:45%). 8/94.

11. Unigene Laboratories, Inc. (U.S.)/Qingdao General Pharmaceutical Co.

Formed joint venture to manufacture and sell injectable and nasal formulations of calcitonin, a drug used to treat osteoporosis. 8/94.

12. Bayer AG (Germany)/Beijing Economic Technological Development Corp.

Established joint venture to produce Bayer prescription and nonprescription drugs for the Chinese market. \$30 million. 7/94.

13. Dermik Laboratories (U.S.)/Shandong Medical University Yunmen Pharmaceutical Factory

Launched Shandong-Dermik Pharmaceutical Co., Ltd. joint venture to produce medicine for skin diseases. \$7.24 million.

(U.S.:75%-PRC:5%). 10/94.

14. Novo Nordisk Biotechnology Co., Ltd. (Denmark)

Set up a branch in Tianjin to produce enzymes and insulin for industrial use. \$243 million. 10/94.

15. Yamanouchi Pharmaceutical Co.

(Japan)/Shenyang No. 1 Pharmaceutical Factory

Established joint venture to produce ulcer treatment and other drugs. \$37.5 million.

(Japan:80%-PRC:20%). 10/94.

16. Becton Dickinson & Co. (U.S.)/Suzhou Pharmaceutical General

Established joint venture in the Suzhou Singapore Industrial Park to produce disposable syringes. \$1.7 million. 9/94.

17. Hafsund Nycomed AS (Norway)/Shanghai Huaihua Pharmaceutical Factory

Established Shanghai Nycomed Pharmaceutical Co. joint venture to manufacture nonionic contrast agents. (Norway:60%-PRC:40%). 9/94.

18. Ciba-Geigy, Ltd. (Switzerland)/Institute of Microbiology and Epidemiology (Beijing), Kunming Pharmaceutical Factory (Yunnan), NA

Jointly developed an antimalarial drug. 12/94.

19. Faulding China, Ltd., a subsidiary of F. H. Faulding Co. (Australia)/Foshan General Pharmaceutical Co., Ltd. (Guangdong).

Formed joint venture to produce cancer medications. \$29.8 million. (Australia:90%-PRC:10%). 12/94.

20. Hoffmann-La Roche, Ltd. (Switzerland)/Shanghai Sanwei Pharmaceutical Corp.

Established Shanghai Roche Pharmaceuticals, Ltd. To produce drugs. \$30 million. (Switzerland:70%-PRC:30%). 1/94.

Other

1. Amgen, Inc. (U.S.)

Opened office in Beijing to provide technical and promotional support for sales of its biotechnology products. 2/94.

2. Upjohn Suzhou Pharmaceutical Co., Ltd., a joint venture between Upjohn Co. (U.S.) and

Suzhou Pharmaceutical Factory

Established representative office in Shanghai. 6/94.

3. Louisiana Education Quality Support Fund (U.S.)

Provided grant to Louisiana biotechnology and pharmaceutical firms seeking to commercialize Chinese pharmaceuticals in the United States. \$50,000. 5/94.

4. Wellcome Group (U.K.)

Opened representative offices in Beijing, Guangzhou, and Shanghai. 8/94.

5. Wellcome Group (U.K.)

Funded AIDS education program in China. \$175,000. 8/94.

1995

Investment in China

1. Pfizer, Inc. (U.S.)/Chinese Academy of Traditional Chinese Medicine

Jointly studied Chinese herbs for potential medicinal use. 1/95.

2. Ethypharm (France)/Shanghai Tianpin Medicine Plant

Formed joint venture to produce several types of drugs. \$15 million. (France:60%-PRC:40%). 4/95.

Prepared by Amy Yudan Luo. Extracted from The China Business Review. 1990-95.

turing technology for antibiotics, "amino acid synthesis, analgesics/antipyretics, anticancer, cardio/cerebrovasculars, osteoporosis products, and drugs for senile dementia. Packaging technology, and the development of sustained-release, targeted-release, and transdermal formulations are other areas where international cooperation is

being promoted."²² The production technology for skin patches, nasal sprays, and inhalation preparations is also needed by Chinese pharmaceutical companies.¹¹

Foreign pharmaceutical joint ventures have certain advantages on product quality, brand name awareness, suitable promotion strategies, and flexible

distribution systems, but the high prices of their products remain the major disadvantage for them in competing with the local Chinese manufacturers. The door for foreign investors will be open as long as the investment can aid the Chinese economy in updating its technology and addressing social epidemiologic needs in the population. ■

References

1. Salmon JW. Health services developments: innovative strategies in the People's Republic of China. *J Allied Health* 1976; 5 (3): 5-9.
 2. Garfield R, Salmon JW. Struggles over health care in the People's Republic of China. *J Contemp Asia* 1981; 11 (1): 91-103.
 3. Lau A. Can change come with consolidation? *China Comm News* 1996; 3(1): 7-12.
 4. Lii JH. Boom-at-a-glance. *NY Times* 1996 (Feb 18): 26-7.
 5. Anonymous. China unveils plan to cut import tariffs. *Chicago Trib* 1995(Nov 20): 10.
 6. Roche D. Faltering investment haunts China's leaders. *Wall St J* 1996 (Feb 12): A14.
 7. McNulty TJ. China: America's partner and rival: market, morals split U.S. policy. *Chicago Trib* 1996 (Feb 19): 1, 10-1.

8. Barnathan J, Crock S, Einhorn B. Cover story: rethinking China. *Bus Week* 1996; (Mar 4): 56-65.
 9. Schmetzer U. China: the next superpower, new muscle, new boldness. *Chicago Trib* 1996 (Feb 18): 1, 16-7.
 10. Anonymous. Chinese pharma sector growth. *Scrip* 1994 (Oct); 1350: 5.
 11. Swanson M. A prescription for success. *China Bus Rev* 1992 (Jul/Aug): 26-30.
 12. Anonymous. Astra in Chinese joint venture. *Scrip* 1994 (Feb); 1894: 10.
 13. Anonymous. China—a rapidly evolving market. *Scrip* 1993 (Jan); 1800: 15.
 14. Anonymous. Chinese production to quadruple? *Scrip* 1993 (Nov); 1872: 20.
 15. Anonymous. Pharma jvs lead in China. *Scrip*

1992 (Nov); 1772: 21.
 16. Roemer MI. National health systems of the world. New York, Oxford: Oxford University Press, 1991.
 17. Swanson M. Unofficial and untapped: China's over-the-counter drug market. *China Bus Rev* 1994 (Mar/Apr): 34-5.
 18. Anonymous. China's health care proposals. *Scrip* 1994 (Dec); 1984: 19.
 19. Anonymous. Shanghai's pharma aims. *Scrip* 1994 (Jun); 1500: 24.
 20. Anonymous. China's first reimbursement list. *Scrip* 1994 (Apr); 1910: 17.
 21. Anonymous. Joint ventures in China under fire. *Scrip* 1994 (Nov); 1940: 20.
 22. Anonymous. Chinese pharma consumption rising. *Scrip* 1994 (Oct); 1967: 10.