OVERVIEW

Population: 1,338,299,511
Life expectancy: 73
Male: 71
Female: 75
GDP Growth (annual): 10.4%
GNI per capita ($) : $4,270
Healthcare expenditure total of GDP: 4.6%
Capital: Beijing
Head of government: President Hu Jintao
Health Minister: Dr Chen Zhu
Language: Mandarin Chinese
Currency: Renminbi
(Source: World Bank 2010)

EXECUTIVE SUMMARY

- According to the World Bank, China became the world’s second largest economy in 2010
- In 2009, the Chinese government announced an unprecedented healthcare reform plan to support universal healthcare coverage for China’s population of 1.3 billion
- The introduction of universal healthcare means China will have to invest heavily in improving its infrastructure in order to extend services to difficult-to-reach rural areas
- Efforts have also been made by the government to establish a transparent purchasing system of essential drugs. An open tender and bidding system is now the standard drug procurement mechanism for reimbursed drugs
- In 2011, China overtook Germany to become the world’s third-largest pharmaceutical market with sales of approximately $52.3bn
- Generic drugs are the mainstay of China’s pharmaceutical industry. The value of the generic drug sector was an estimated $33bn in 2010
- Almost half of the top 10 pharmaceutical companies in China are multinationals but none of them controls more than 2.5 per cent of the total market
- The government actively promotes innovation in traditional Chinese medicine, which continues to enjoy growing support in China and globally. These innovations include building an R&D system, facilitating technology transfers into the industry and improving R&D management and quality control
- China has the world’s most attractive emerging medical device market. Demand is driven by increasing prevalence of chronic diseases, modernisation of healthcare facilities, a greater uptake of diagnostic procedures and an ageing population.
MACRO OPERATING ENVIRONMENT
The People’s Republic of China is the world’s most populous country with a population of more than 1.3 billion. China is governed by the Communist Party of China. It exercises jurisdiction over 22 provinces, five autonomous regions, four directly controlled municipalities (Beijing, Tianjin, Shanghai and Chongqing) and two mostly self-governing special administrative regions (SARs), Hong Kong and Macau.

According to the International Monetary Fund (IMF), China’s annual average GDP growth between 2001 and 2010 was 10.5 per cent and the economy is predicted to grow at an average annual rate of 9.5 per cent between 2011 and 2015. Between 2007 and 2011, China’s economic growth rate was equivalent to all of the G7 countries’ growth combined. As of 2012, it is the world’s second-largest economy, after the US, by both nominal GDP and purchasing power parity (PPP).

Since the introduction of market-based economic reforms in 1978, China has become the world’s fastest-growing major economy. Today, it is estimated that more than 1 million of its population has a net worth of more than $1.5m. In 2010, healthcare expenditure in China reached $249bn. It has been forecast that this sum will rise to $446bn by 2015.

HEALTHCARE SERVICES
The provision of healthcare services is mainly based on government-managed public hospitals. Currently, 90 per cent of all hospitals are public hospitals, which are under the China Ministry of Health, provincial health bureau or municipal health bureau. Public hospitals are further categorised into three separate tiers by the Ministry of Health, where tier 1 is the lowest tier and tier 3 is the top tier in terms of facility, level of service provided and type of hospital administration available. Teaching hospitals and military hospitals are usually tier 3 institutions.

HEALTHCARE REFORM
Healthcare reform plans to expand medical insurance coverage, strengthen public health infrastructure and improve rural healthcare services will increase access to newer therapies. For the pharmaceutical industry, the single biggest factor shaping the landscape is the healthcare reform plan of 2009. This reform plan is anchored on the two pillars of accessibility and affordability, wherein the government has pledged approximately $124bn over three years to undertake a two-phase plan.

“The reform of hospitals in China is expected to accelerate, driven by the emergence of clearer policies governing the payment mechanism between payers and providers”

The first phase aims to increase accessibility through: the building of a network of basic healthcare facilities; expansion of the public medical insurance system to cover 90 per cent or more of the population and reform of the drug supply system. To date, at least 1,000 county hospitals have been modernised, while another 1,000 have been upgraded. Plans are in place for the development of a further 30,000 hospitals, care centres and clinics across the country. The reform of hospitals in China is expected to accelerate, driven by the emergence of clearer policies governing the payment mechanism between payers and providers. In addition, it is expected that an increase in funding from both local and overseas sources will lead a wave of hospital privatization involving new as well as existing assets.

The second key aspect of the healthcare reform is the over-
hailing of the National Essential Drug List (NEDL) and the National Reimbursement Drug List (NRDL) by the government. In the past, hospitals were paid a commission based on the cost of drugs prescribed. This commonly led to patients receiving medicines unnecessarily. Furthermore, between 1990 and 2000, price-fixing practices by drug manufacturers resulted in the cost of medicines soaring. Such practices have since been curbed and medicines sold in China, primarily those listed on the NEDL, are subject to price control by the government. In addition, hospitals and retail pharmacies are prohibited from adding margins to drug product sales; a pharmacy fee is added to each physician’s prescription instead.

The National Development and Reform Commission (NDRC) is charged with defining drug pricing. In August 2009, the Ministry of Health released a list of 307 essential medicines that would be available at heavily subsidised prices; some two months later, the NDRC had slashed the prices of 45 per cent of these essential medicines, including those used to treat colds, fever, hypertension, heart disease and diabetes. In a more recent further shake-up, the NDRC announced plans to curb the prices of essential drugs produced by foreign-funded firms. This category had, in the past, been excluded from price reductions as a way to encourage research and development investment in China.

REIMBURSEMENT

The governance of healthcare reimbursement and insurance policies in China is both diverse and complex. One explanation for the complexity is that local governments are entrusted with significant power to make decisions on the use of drugs. When a drug is listed on the NRDL, it means that it becomes available to the mass population and is also covered by various medical insurance schemes. Reimbursement by the government means drugs are more affordable to patients and there is a high willingness among physicians to prescribe.

Efforts have also been made by the government to establish a transparent purchasing system for essential drugs. An open tender and bidding system is now the standard drug procurement mechanism for reimbursed drugs. The selection of products is made by tendering committees of each province in China and tenders are usually issued annually or biennially for clusters of hospitals within a province. It is estimated that more than 80 per cent of all drugs sold through hospitals are now being purchased through the bidding process.

DISEASE BURDEN

China is currently contending with a range of communicable and non-communicable diseases. It is estimated that by 2030, more than 17 million disability-adjusted life years (DALYs) and more than 141 million DALYs will be lost to communicable and non-communicable diseases, respectively.

Leading public health issues include HIV/AIDS, cancer (stomach, lung, liver, cervical, breast) and heart diseases. In addition, infectious diseases such as hepatitis and tuberculosis present major problems in some areas. Furthermore, the National Centre for Sexually Transmitted Diseases Control estimates that the number of syphilis cases has increased 10-fold over the past decade. The World Health Organisation (WHO) has indicated that China is threatened with one of the most rapidly expanding HIV epidemics in the world. It is estimated that there are more than 10 million HIV sufferers in China today. Between 2006 and 2011, the cost to the country as a result of HIV/AIDS has been put at $40bn.

“As the population ages and increasingly adopts Western lifestyles, the burden of chronic disease as well as cardiovascular and metabolic disease will rise”

China also has the world’s second largest incidence of cancer. Each year, 2.2 million new cancer patients are diagnosed, with the main target organs being liver, lungs and stomach. Approximately 400,000 patients are newly diagnosed with stomach cancer annually, with a rising prevalence in the number of younger patients diagnosed with the disease.

As the population of China ages and increasingly adopts Western lifestyles, the burden of both chronic disease as well as cardiovascular and metabolic diseases will rise significantly. A study undertaken by the China National Diabetes and Metabolic Disorders Study Group reported that the prevalence of diabetes in China was approximately 10 per cent, accounting for more than 92 million people. In 2005, cardiovascular disease was estimated to account for one third of all deaths in China. By 2020, it is estimated that the number of deaths due to cardiovascular disease will have doubled. Forecasts estimate that the country will lose $556bn between 2005 and 2015 as a result of direct and indirect costs imposed by heart disease, stroke and diabetes. Indeed, one of the most important growth areas in the pharmaceutical market will be hypertension drugs, with the market expected to double by 2014, due to greater disease awareness and the increasing prevalence of contributory factors such as obesity.

Chronic obstructive pulmonary disease (COPD) is predicted to cause tens of millions of deaths over the next 25 years. Experts are of the opinion that if the current trends for tobacco smoking and solid fuel use continue, deaths from respiratory causes could top 65 million over the next two decades.

Another important and serious health problem in China is hepatitis. The carrier rate of hepatitis B in China is approximately 10

IMPLICATIONS OF HEALTHCARE REFORM PLANS

| **Reduce the cost of medical services** | • The NEDL is applicable to government-funded hospitals, grass-roots clinics and other health institutions
| • The 2009 list contains 307 ‘essential drugs’, of which 102 are traditional Chinese medicines
| • Medicines listed in the National Essential Drug System are subject to price control by the government |
| **Upgrade of infrastructure** | • The building or modernisation of 30,000 hospitals, care centres and clinics by the end of 2011 |
| **Enlarge insurance coverage** | • Insurance coverage to reach more than 90 per cent of the population by end 2011; and everyone by 2020 |
| **Reform of the distribution model** | • All listed essential drugs are included in China’s National Reimbursement Drug List (NRDL) and enjoy higher reimbursement rates than non-essential drugs
| • The NRDL sets the percentage of drug costs reimbursed under national insurance |
per cent, which is among the highest levels in the world. Despite the availability of a vaccine, uptake in China has been slow. With regard to hepatitis C, the WHO estimates that more than 40 million of the population carry the virus.

“Senile dementia is a common disease among the elderly and it has been conservatively estimated that there are between 6 and 8 million sufferers”

China’s ageing population is another significant healthcare concern. In 2009, 12.5 per cent of the total population (approximately 167 million people) was aged 60 or older and almost 19 million were octogenarians. Senile dementia is a common disease among the elderly and it has been conservatively estimated that there are between 6 and 8 million sufferers, including those with Alzheimer’s disease, vascular dementia and other clinical manifestations. Worryingly, recent figures show that more than 300,000 new cases of Alzheimer’s disease are diagnosed in China annually. Industry experts have drawn attention to the need for early detection and prevention of the disease.

It is estimated that China will complete the urbanisation process in the next few decades if the urbanisation rate achieves the expected rate of more than 50 per cent over the next 10 to 15 years. Its socioeconomic development has been accompanied by lifestyle and demographic changes such as Western dietary habits, reduced levels of physical activity, urbanisation and high prevalence of smoking. The emergence of medical conditions resulting from improved socioeconomic status poses a serious health threat given that the country is still coping with infectious diseases and malnutrition.

PHARMACEUTICAL MARKET

China’s status as one of the world’s largest pharmaceutical markets rests primarily on its population size, rather than its maturity. The Chinese drug market comprises a complex system of regional markets where manufacturing is dominated by generics and the majority of sales from over-the-counter (OTC) drugs.

Combined sales of prescription drugs and OTC medicines have increased by 22 per cent from $52bn in 2010 to $67bn in 2011. Strong growth in government funding of healthcare and a rise in spending by an increasingly affluent middle class are expected to help China overtake Western markets.

In 2011, China overtook Germany to become the world’s third-largest pharmaceutical market behind Japan. With its volume and 20 per cent annual growth projection, China is set to become the world’s second largest pharmaceutical market by 2015.

Prescription drug sales are set to reach $70bn by the end of 2014. The OTC medicine sector, which was approximately $15bn in 2010, is also set to continue to grow, albeit more slowly. In 2009, the average annual growth was a relatively modest 7.7 per cent. The key driver for the OTC market is the popularity of preventive medicine coupled with the growing numbers of health-conscious Chinese people in urban populations. This has resulted in more people visiting drug stores and bypassing physicians altogether.

“Generic drugs form the backbone of China’s pharmaceutical industry. Approximately 98 per cent of the pharmaceutical companies in the country manufacture generic drugs”

GENERIC DRUGS MARKET

Generic drugs form the backbone of China’s pharmaceutical industry. Approximately 98 per cent of the more than 5,000 pharmaceutical companies in the country manufacture generic drugs. The low per capita income and the insufficient health insurance coverage continue to limit access to healthcare and drug affordability for a large proportion of the population. The lack of reimbursement leads to limitations in the uptake of many novel, premium-priced therapies. Consequently, the uptake of cheaper, generic therapies shows no signs of slowing. It is forecast that the generic drugs market will continue to grow rapidly at a Compound Annual Growth Rate (CAGR) of 12.9 per cent to a value of $57.1bn by 2014.

As patents expire for major products, especially blockbuster drugs, Chinese companies are waiting to capitalise on the opportunities afforded by the loss of patent protection. Nevertheless, the expected decrease in the prices of generic drugs (by 20-25 per cent) is likely to leave many smaller players unable to compete, thus resulting in market consolidation over the longer term. For multina-

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![MARKET SEGMENTATION](chart.png)

Source: 2009 Information Explorer Ltd (IEL)/BMI
tionals, loss of income from expiring patents is a key competitive issue that will probably dictate the formation of strategic plans to acquire new revenue streams.

**COUNTERFEIT MEDICINES**
The counterfeit medicines industry continues to proliferate. It is estimated that the street value of the products, if sold as genuine goods, stands at $315m. Several reasons have been postulated for the growth in the sale of fake medicines in China. These include shortage of manpower for law enforcement agencies and lenient sentencing for those convicted that have failed to act as an effective deterrent.

“The penetration of counterfeit medicines into mainstream dispensing facilities has also been confirmed with the discovery of fake products in one top-tier hospital”

“People will always find alternative ways of getting inexpensive drugs,” stated Nathan Sigworth, CEO of PharmaSecure. The penetration of counterfeit medicines into mainstream dispensing facilities has also been confirmed with the discovery of fake products being used in one top-tier hospital in China.

“Fake Pfizer medications have breached the legitimate supply chain in China,” confirmed John Clark, chief security officer for Pfizer. Such developments have driven the implementation of aggressive anti-counterfeiting campaigns by pharmaceutical companies operating there. These activities include raising awareness of the problem, education and training for enforcement authorities on distinguishing between genuine and counterfeit pharmacological products, as well as the detection and disruption of the manufacturing and distribution processes.

In recognition of the growing problem of counterfeit medicines, the Ministry of Public Security spearheads national campaigns to combat the counterfeiting of medicines. Seizures to date range from prescription medicines to traditional Chinese medicines and health-enhancement products.

**TRADITIONAL MEDICINES**
Traditional Chinese Medicines (TCMs) continue to enjoy high popularity in China. TCMs are considered effective and safe and can be administered without conflict alongside Western medicine. This is because Western medicine is seen as treating the symptoms of the disease, while TCMs go to the root of the cause. As a result, it is not uncommon for patients in China to seek and receive Western medication and traditional medicines simultaneously to treat serious conditions including diabetes and even oncological disease.

**MEDICAL DEVICE MARKET**
The medical device market in China is expanding rapidly. It is consistently reporting double-digit annual growth. In 2009, its market size was valued at approximately $25bn. This represents great potential for the future since the current market in China accounts for only approximately 5 per cent of the world’s medical device market. A key driver of the medical equipment market is the increase in private insurance and the sale of state-owned healthcare facilities to private equity.

**HEALTHCARE COMMUNICATIONS**
Digital healthcare is an increasingly important communication tool that continues to offer unlimited potential for further growth. Consumers are proactive in utilizing the internet for research into medicines as well as specific diseases and their treatment options. Indeed, more than 50 per cent of ‘netizens’ in China use the internet to search for information on new medicines, including pricing, drug efficacy and side effects as well as for patient testimonials.

Large online communities are already well established for both the lay public and for healthcare professionals. Social media also continues to grow in popularity and plays an increasingly influential role for users to decide their healthcare practices, through physician-patient discussion forums, patient groups, disease forums, blogs and video testimonials, among many others.

In response to the changing needs of the consumer, healthcare companies have embarked on building the necessary digital platforms to support a diverse range of tailored communication programmes. The use of digital channels in China spans all major disease areas, including hypertension, diabetes, dementia and COPD. Innovations in mobile healthcare applications have led to the development of a diverse range of consumer-friendly digital healthcare programmes and applications.

**MEDICAL EDUCATION**
China’s booming economy has put the country firmly in the sights of global pharmaceutical companies for further growth. As a result, the demand for product differentiation is particularly important in a crowded and highly competitive market. No matter how pharmaceutical companies decide to promote their brands, they need to help physicians and other influencers understand brand attributes and use them to select pharmacological interventions.

The pharmaceutical industry spends huge sums of money on clinical...
trials but, even when they are highly successful, often the evidence from these trials is not effectively translated into timely changes in practice. The problem of healthcare practitioners not implementing the evidence of research is a longstanding one. In spite of the availability of published guidelines and the efforts put into continuing medical education, many physicians simply do not follow guidelines even when they accept the value of an evidence base.

**COMMON BARRIERS TO IMPLEMENTATION OF LATEST EVIDENCE AND GUIDELINES**

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“Medical education, when executed under an overarching communication platform, has the potential to cohesively drive an integrated communications package”

Medical education, when executed under an overarching strategic communication platform, has the potential to cohesively drive an integrated communications package. It can be used both to raise awareness of specific conditions and their treatment as well as more directly raising awareness of a particular product. Activation of evidence can be seen as a legitimate approach by pharmaceutical companies to address challenges of knowledge translation through the provision of benefits to all participants and stakeholders.

“Activation of evidence initiatives will increase return on the investment that goes into clinical trial design and execution by applying findings in real-world clinical settings”

For patients, the programmes help to provide optimal evidence-based treatments that have shown the best outcomes for similar patients. Healthcare providers will get the tools, support and feedback mechanisms they need to appropriately implement and accurately assess the impact of new treatment practices, instead of relying on the traditional ad hoc approach of trying newer treatments on a few suitable patients to informally assess their benefits. From the pharmaceutical company’s perspective, activation of evidence initiatives will increase return on the investment that goes into clinical trial design and execution by applying findings in the real-world clinical setting. Furthermore, expert usage of strategic medical education can aid pharmaceutical companies to develop and strengthen relationships with key Opinion Leaders, improve access, and enhance the image of the company and its products.

**SUMMARY**

China’s economic and social reforms over the past two decades have been met with tremendous success. The importance of modernizing the national healthcare system has been recognised with the recent radical healthcare reform plan and heavy investment by the government. The implication of these reforms is that the healthcare market in China remains one of the hot spots for investment for the foreseeable future.

“The market share for prescription drugs is likely to rise, at the expense of OTCs ... however, the significance of traditional medicines cannot be overstated”

As the most attractive emerging pharmaceutical market, China continues to enjoy strong growth. The market share for prescription drugs is likely to rise, at the expense of OTCs. Furthermore, the expected increase in demand for treatments in specific therapeutic areas such as cardiovascular disease and neuroscience, combined with the rising health expenditure and the continued perception of hospitals as the primary source of treatment, are set to be key drivers of growth. However, the significance of traditional medicines cannot be overstated, given that these interventions have a firmly entrenched position in Chinese society and continue to generate huge revenues for manufacturers, TCM practitioners and retailers.

The country also has the world’s most attractive emerging medical device market. Demand will be driven by more chronic diseases, the modernisation of healthcare facilities, a greater uptake of diagnostic procedures and an ageing population.

With the increasing sophistication and maturation of the healthcare infrastructure and system, effective communication and communication channels between different healthcare stakeholder groups have become a top priority. Medical education has evolved greatly in improving its effectiveness and remains firmly relevant throughout the life cycle of a product, from pre-product licence application to maturity. However, to ensure maximum efficacy and cost-effectiveness, it is essential that the appropriate tactic is used at the right time.

The future for the digital healthcare industry in China also looks extremely bright. It is expected that innovations in the digital space will uncover e-solutions for key areas pertinent to the healthcare sector, including business strategy, market access matters as well as regulatory and legal considerations.

With the ongoing input and commitment of multifunctional key stakeholders, the vision of every Chinese citizen enjoying affordable, high quality healthcare appears both highly laudable and achievable.

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