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Executive Insights

Opportunities and Patient Insights into the China Oncology Market

China is now the second largest pharmaceutical market in the world.¹ China's oncology market alone represents 37% of all lung cancer, 44% of stomach cancer and 52% of liver cancer patients globally.² Large multinational pharma companies are carrying out initiatives to succeed in the market, and more biotech companies are entering China through either partnerships or greenfield strategies.³ Diagnosis and treatment patterns in China continue to be diverse due to the variation among different levels of hospitals. A comprehensive view of the oncology market is needed to design a winning strategy. In this introduction, we highlight opportunities for international market entrants and provide an overview of the patient and physician landscape in China using LinkDoc's disease database. The lung cancer market is featured as an illustrative example.

China has led emerging markets in oncology therapeutics spending and growth, growing by 24% in 2018 to reach U.S. \$9 billion in

spending.⁴ Furthermore, China has the largest number of cancer patients globally, with 4 million newly diagnosed cancer cases per year in 2018, more than double the number of new cases per year in the U.S.² In addition, China's cancer mortality rate is 40% higher than that of the U.S.⁵ Lung cancer rate, and is the most common cancer type in China, with an overall five-year survival rate of 36%.⁶ This results in an urgent medical need and continued demand for better lung cancer treatment options in China.

Innovation and reimbursement trends

To address the high cancer disease burden, China has made efforts to drive innovative oncology drug development, which have seen significant results:

- More than 700 cancer therapeutics from international companies and local Chinese companies underwent nearly 1,500 clinical trials in China between 2009 and 2018.⁷ Approximately 40% of these cancer therapeutics are targeted small molecules, similar to global market trends.^{4,7}
- Although China had only 10% of the clinical trial volume of the U.S. over the past nine years and its immuno-oncology therapeutics development outside of PD-1/PD-L1 targets is lagging behind the global landscape, recent China policies that enable innovative drug development are expected to further increase the number of clinical trials and innovative immuno-oncology drugs in the future.^{7,8}
- More International Multicenter Clinical Trials are being registered and conducted in China for parallel drug launch

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in the U.S. and China market.⁹ Pharma companies now leverage patient resources in China to accelerate enrolment.

As top clinical sites and principal investigators are in high demand, pharma companies need to think about how to strategically design drug development pathways to launch in the China market with first-mover advantage.

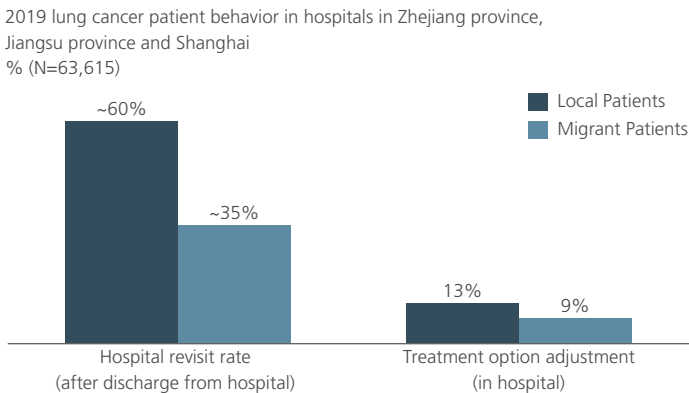
China is also accelerating patients' access to innovative oncology drugs through reimbursement expansion. Forty-one innovative oncology drugs (including PD-1) have been included in the national reimbursement drug list (NRDL) through reimbursement negotiations in 2018 and 2019,¹⁰ with price concessions averaging 44% to 61%.

Significant increase in volume can take place after reimbursement. For instance, Roche's revenue has grown at ~28% from 2017 to 2018 with the inclusion of three key products (Herceptin, Avastin and MabThera/Rituxan) on the NRDL in 2017. However, not every reimbursed drug can reach the sales volume necessary to offset the sharp price decline. Therefore, pharma companies with innovative drugs in the China market need to define an appropriate pricing strategy for reimbursement and identify how to optimize the drug's value proposition after entering the reimbursement list.

Targeting patients

To optimize the value proposition, pharma companies need to be aware of where their target patients are. Given the unequal distribution of healthcare resources in China, lung cancer patients typically go to affluent cities with better hospitals for initial diagnosis and treatment. In Beijing and Shanghai, for example, about 70% and 45% of the respective patient populations are nonresidents.¹¹ Most patients subsequently return to their hometown for ongoing treatment. The percentage of on-time follow-up visits is significantly lower for migrant patients than for local patients (see Figure 1). To ensure patient compliance and to

Figure 1
Percentage of local and migrant patients who follow up with the original treating hospital within 180 days



Source: LinkDoc database

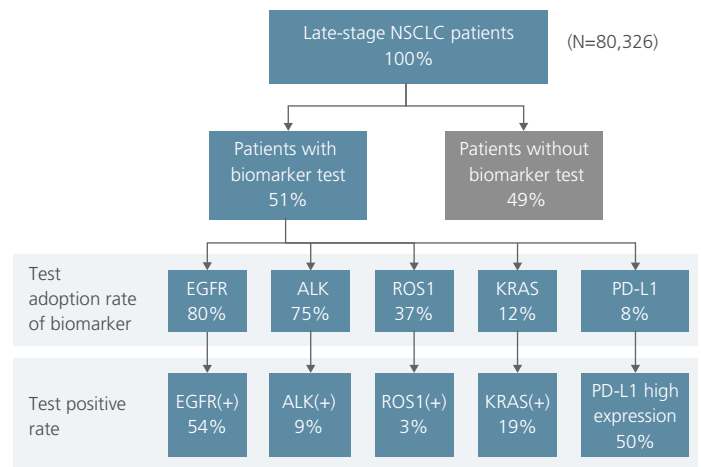
maximize drug efficacy, companies and hospitals need to work together on continuous follow-up with patients, both inside and outside the hospital.

We further examined the patient flow and treatment paradigm for lung cancer. China's lung cancer patients are diagnosed and treated in different departments, mainly the departments of respiratory medicine, thoracic surgery and oncology. Although physicians in top-tier hospitals are more likely to prescribe Western medicine, it is common for physicians to prescribe traditional Chinese medicine (TCM) to complement Western medicine. Advanced non-small cell lung cancer (NSCLC) patients often receive TCM concurrently with Western medicine, with TCM adoption at a high rate of about 90%. Pharma companies need to be aware of the prescribing practices, particularly because there is a lack of robust clinical studies that examine how TCM may affect the efficacy of Western cancer therapies.

With the national precision medicine initiative, physicians also have increased adoption of biomarker testing prior to prescribing targeted or immuno-oncology therapies.^{12,13} Physicians in leading hospitals decide on the treatment option after evaluating the biomarker test results. However, in lower-level hospitals where the biomarker test adoption rate is low, physicians may prescribe drugs without considering the gene mutations (see Figure 2). The lack of national reimbursement for biomarker tests has been the primary cause of low adoption rates. Promisingly, Beijing's Medical Security Bureau announced official policies in 2019 to reimburse cancer biomarker testing and other cities may eventually follow suit, with national reimbursement expected in the longer term.¹⁴ This may drive higher adoption rates in the future.

Figure 2
Biomarker diagnostic tests and therapy types received by advanced NSCLC patients

2018-19 Biomarker test results of late-stage NSCLC patients



Source: LinkDoc database

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Taking the first step

With a significant market size and policies that are increasingly favorable for innovative oncology therapeutics, China presents attractive opportunities for international companies. Although there are some challenges in patient access to and physician awareness of biomarker testing in lower-tier cities, the overall oncology market environment in China continues to mature and improve. To seize the business opportunities in China, innovators should consider the following:

- How should we organize our drug development strategy in China?
- Which patient segments should we target based on China's competitive landscape and our portfolio mix?
- Which hospitals and physician segments should we prioritize in our go-to-market strategy?
- How do we optimize drug accessibility and affordability for our target patient population?
- How do we improve biomarker testing adoption of our companion diagnostics to ensure our therapeutics are reaching the appropriate patient population?
- What types of real-world evidence are needed to expand the usage of our therapeutic across indications, differentiate itself from existing drugs, and influence key opinion leaders' behavior?
- How can we optimize pricing strategies, design of Patient Assistance Programs, and set NRDL negotiation tactics to maximize revenue potential?
- What is the best mode of entry for a company that is not yet present in the market?

Endnotes

¹ The Global Use of Medicine in 2019 and Outlook to 2023, IQVIA, 2019

² Global Cancer Observatory (GLOBOCAN), 2018

³ "Heading East: Biopharma International Expansion to China and Asia", L.E.K. Consulting, 2018

⁴ Global Oncology Trends 2019: Therapeutic, Clinical Development and Health System Implications, IQVIA, 2019

⁵ "Current Cancer Situation in China: Good or Bad News from the 2018 Global Cancer Statistics?", Cancer Communications, 2019

⁶ LinkDoc lung cancer database

⁷ Changes in Clinical Trials of Cancer Drugs in Mainland China Over the Decade 2009–18: A Systematic Review, *The Lancet Oncology*, 2019

⁸ L.E.K. analysis of data from Clinicaltrials.gov over 2009-2018

⁹ Center for Drug Evaluation (CDE) of National Medical Products Administration (NMPA)

¹⁰ State Medical Insurance Administration (SMIA)

¹¹ LinkDoc analysis of proprietary Clinical Data

¹² "The Promise of Precision Medicine in Asia-Pacific", L.E.K. Consulting, 2019

¹³ "Unlocking the Opportunities for Companion Diagnostics in Asia-Pacific", L.E.K. Consulting, 2019

¹⁴ "Announcement on Price Regulations for Medical Services Including Pathology", Beijing Medical Security Bureau, 2018



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About LinkDoc

LinkDoc is a healthcare technology company focused on accelerating oncology drug development and commercialization. To date, LinkDoc is the largest digital oncology platform with Contract Research Organization and Contract Sales Organization businesses in China, and it is rapidly expanding its services into the rare disease sector. LinkDoc's offerings include patient recruitment for clinical trials, real-world study and analytics, a digital patient care platform integrated with the patient community, an internet hospital, a direct-to-patient pharmacy, and insurance solutions. Founded in 2014, LinkDoc employs more than 1,100 healthcare and technology professionals in China.

For more information, go to <https://www.LinkDoc.com/>.

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L.E.K. APAC Life Sciences Centre of Excellence is an initiative developed by L.E.K. and supported by Singapore's Economic Development Board to drive thought leadership and innovation to elevate the APAC life sciences ecosystem.

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