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Editorial

U.S.-China Phase I Trade Deal – An Opportunity Window MNCs Must Not Miss

James J. Shen

Yes, the Chinese government continued to expand the national level volume-linked centralized drug purchase trial (the expanded 4+7 trial), but it wasn't the biggest news of December.

The most influential event of last month was not even directly in the healthcare sector, although the sector is to be seriously impacted. As indicated by the title of this editorial, what I am referring to is the Phase 1 Trade Agreement between the U.S. and China, which is surprisingly more comprehensive than expected.

On December 13, the USTR Office released a "fact sheet" about the Phase 1 U.S. – China Trade Deal that it had just announced. Reports suggest that the deal will be signed in early January, with the text released sometime after that. A full analysis of the deal will have to wait until then, but for now, I will quote selected comments from the Cato Institute which are relevant to the pharma industry.

"The first issues mentioned (in the agreement) are intellectual property and technology transfer. The fact sheet addresses these as follows:

- *Intellectual Property*: The Intellectual Property (IP) chapter addresses numerous longstanding concerns in the areas of trade secrets, pharmaceutical-related intellectual property, geographical indications, trademarks, and enforcement against pirated and counterfeit goods.
- *Technology Transfer*: The Technology Transfer chapter sets out binding and enforceable obligations to address several of the unfair technology transfer practices of China that were identified in USTR's Section 301 investigation. For the first time in any trade agreement, China has agreed to end its long-standing practice of forcing or pressuring foreign companies to transfer their technology to Chinese companies as a condition for obtaining market access, administrative approvals, or receiving advantages from the government. China also commits to provide transparency, fairness, and due process in administrative proceedings and to have technology transfer and licensing take place on market terms. Separately, China further commits to refrain from directing or supporting outbound investments aimed at acquiring foreign technology pursuant to industrial plans that create distortion.

With regard to these issues, two points are worth noting. First, there are already rules on these issues at the WTO. When the text of the U.S.-China deal is released, it will be interesting to compare and see if there is anything new here, or if the deal just restates existing WTO obligations. Second, China was in the process of making domestic law changes in these areas anyway, so the commitments in this deal will not necessarily lead to any new legislative actions.

And then there is a section indicating that China will buy a massive additional amount of U.S. exports of goods and services, as follows:

- *Expanding Trade*: The Expanding Trade chapter includes commitments from China to import various U.S. goods and services over the next two years in a total amount that exceeds China's annual level of imports for those goods and services in 2017 by no less than US$200 billion. China's commitments cover a variety of U.S. manufactured goods, food, agricultural and seafood products, energy products, and services. China's increased imports of U.S. goods and services are expected to continue on this same trajectory for several years after 2021 and should contribute significantly to the rebalancing of the U.S.-China trade relationship.

Notably, there is dispute resolution. The fact sheet tells us this:

- Dispute Resolution: The fact sheet details are vague, but based on other statements by the Trump administration, it seems like this process will not involve neutral adjudication of disputes about compliance. Rather, if consultations fail, the U.S. will simply decide on its own whether China is in violation of the agreement, and then decide on its own what tariff penalties are appropriate."

Despite all the positive signs lately, before all paperwork is done and the agreement is duly signed in early January, no one including myself can say for sure if it is really going to happen. Indeed, on the date of announcement, the stock market didn't even blink. Even if it is signed eventually, its fate remains questionable and I may wonder about how long it will last. Alas, there have been just too many promises made and broken by the Chinese, but I've yet to see any willingness to make fundamental changes.

The Phase 2 Agreement, which is supposed to start immediately after signing of the Phase 1 Deal, is to be digitally focused, according to a *China Briefing* article by Chris Devonshire-Ellis. Senior US administration officials have stated that various issues ranging from digital trade to cross border data sharing and cyber intrusions will be addressed by the "phase two" negotiations between the two countries. "There are a number of issues that we could address moving forward. We have mentioned the localization of cross border data transfer. There are issues related to subsidies and some disciplines that could be likely areas that we would want to address – and cyber intrusions as well."

Phase 2 can also be expected to deal with US concerns that China effectively steals US intellectual property by forcing US companies to transfer their technology to Chinese rivals. This is especially an issue with Sino-Foreign Joint Ventures in strategic and foreign-investment restricted industries in China.

However, the US-China Business Council President, Ambassador Craig Allen, in comments made to Fox News stated that he felt the Chinese would be changing aspects of their attitude towards IP with particular benefit to the US pharmaceutical and software industries, even suggesting that China might "change its laws" to accommodate this.

That could involve increasing punishments for patent infringements, as well as raising the threshold for US companies to obtain revenues from royalties – an issue that could mean introducing a US-China bilateral trade agreement (BIT) to cover this area.

Indeed, an opinion document released by the State Council on November 24 called for a strengthening of protections through both the civil and criminal justice systems and an effective enforcement of penalties. Specifically relating to the pharma sector, it provides the exploration and establishment of the patent linkage system and the patent term restoration system in China.

Both phases of the deal will have serious and far-reaching impacts on Chinese pharma, not only to its IP theme, but also the entire pharmaceutical market landscape. At least during the life of this deal, MNC pharma companies, especially U.S. players, are set to benefit from it. But don't take anything for granted and the tide may change anytime if the phase 2 trade deal cannot be reached, which may trigger renewed tension and even scrapping of the phase 1 deal. Even if both phases of the deal are reached, before serious structural changes are implemented and without the rule of law taking roots, vigilance is necessary for unexpected swings.

Chinese drug market expected to grow 4.2% in 2019

A host of new Chinese drug market data has been released recently. The overall Chinese drug market is forecasted by PHIIC to rise 4.2% to CNY 17,141 billion in 2019. The center also projects the sales of 25 drug products covered by the 4+7 trial to shrink 1.18% by value and rise 12.16% by volume in 2019 in representative hospitals covered by PHIIC.

PHIIC also projects the Chinese sales value of innovative drugs to be CNY 11.12 billion in 2018, a 40% jump from CNY 8.06 billion in 2017. Such sales were equally shared by novel chemical drugs and biologics in 2018.

On the other hand, Chinese cancer drug market will surpass US$30.5 billion by the year end of 2025, according to a new report from ResearchAndMarkets.com.

IQVIA also published latest topline data. The Chinese urban hospital drug sales were up 9.7% in the MAT Q3/2019, reaching nearly CNY 221.3 billion, according to IQVIA's CHPA (≥100 beds). In the third quarter of 2019, Chinese hospital drug sales reached CNY 221.3 billion, rising at 10.1% compared with the third quarter of 2018. Growth rate fell slightly.

The sales of Chinese prefecture-level urban retail pharmacy market reached CNY 191.7 billion in the MAT Q3/2019 (12 months ending the end of September 2019), growing 1.9% at slightly faster pace than MAT Q2/2019, according to IQVIA PharmaTrend.

Finally, insomnia is a growing problem in China but sales were only up by 3% as consumers look to methods beyond medical treatments to deal with the issue, according to latest market data from Nicholas Hall & Co.

MNCs won more new drug approvals as domestics firm up the CMDO sector

MNC pharma companies continued to win new approvals of innovative drugs with AstraZeneca being a big winner. Its triple-combination therapy, budesonide / glycopyrronium / formoterol fumarate (BGF), has been approved most recently in China as a maintenance treatment for COPD. AZ also announced on December 12 that it has received marketing authorisation from the NMPA for its Imfinzi (durvalumab) for the treatment of patients with unresectable, stage 3 non-small cell lung cancer (NSCLC), whose disease has not progressed following concurrent platinum-based chemotherapy and radiation therapy (CRT). Earler, AZ and MSD received marketing authorization from the NMPA for Lynparza (olaparib) as a 1st-line maintenance treatment of adult patients with newly diagnosed advanced germline or somatic BRCA mutated (gBRCAm or sBRCAm) epithelial ovarian, fallopian tube or primary peritoneal cancer who are in complete or partial response to 1st-line platinum-based chemotherapy. The company also formed a strategic partnership in China with Abcodia with focus on the early detection of ovarian cancer.

Sanofi China received NMPA approval of the import application for Genzyme Europe B.V.'s orphan drug injectable agalsidase beta (Fabrazyme) was approved recently. The product was listed in China's second batch or urgently-needed new drugs for priority review backed with overseas clinical data. This is China's first approved drug in China for Fabry Disease patients aged eight and above. Besides, Sanofi China's new drug application for Dupiluma (acceptance #JXSS1900067), sold under the trade name Dupixent, has been accepted by the CDE on December 25.

Eisai said on December 2 that LENVIMA (lenvatinib), the orally available kinase inhibitor discovered by Eisai, has been accepted by the NMPA for an application for the additional indication of differentiated thyroid cancer.

Gilead Sciences announced on December 20 that the NMPA has approved Vosevi (sofosbuvir 400mg / velpatasvir 100mg / voxilaprevir 100mg) for the treatment of chronic hepatitis C virus infection in adults without cirrhosis or with compensated cirrhosis who have failed prior treatment with a direct-acting antiviral therapy.

The NMPA recently approved the import registration application of Janssen-Cilag International NV's guselkumab injection (brand name: Tremfya) for adults with moderate to severe plaque psoriasis suitable for systemic treatment patient.

Roche entered a massive US$1.2 billion collaboration with Sarepta Therapeutics for the biotech's experimental Duchenne muscular

dystrophy gene therapy. With Roche, Sarepta believes it can reach markets that it couldn't have on its own, such as China.

There were more alliance and licensing deal among MNCs, smaller foreign firms and domestic companies.

Janssen Biotech and Shandong Fontacea Pharma announced on December 17 an exclusive license, development and commercialization agreement to develop and commercialize drugs containing a human IgG1λ anti-human IL-17A neutralizing monoclonal antibody in mainland China, Hong Kong, Macao, Taiwan and South Korea.

The NMPA also approved the import registration application of Janssen-Cilag International NV's guselkumab injection (brand name: Tremfya) for adults with moderate to severe plaque psoriasis suitable for systemic treatment patient.

HitGen announced on December 18 that HitGen and Mitsubishi Tanabe Pharma Corporation have entered into a license agreement to develop a novel class of drugs. The licensed compounds were identified using HitGen's leading technology platform.

Japan Tobacco Inc. (JT) announced on December 25 that it has signed an exclusive license agreement with Shenzhen Salubris Pharmaceuticals Co., Ltd. for the development and commercialization in Mainland China, Hong Kong, Macau and Taiwan of JT's original compound JTZ-951 (enarodustat), a hypoxia inducible factor prolyl hydroxylase (HIF-PH) inhibitor.

TRACON and 3D Medicines and Jiangsu Alphamab entered into a product development collaboration whereby TRACON will be responsible for the clinical development and commercialization of envafolimab in soft tissue sarcoma in North America, with the majority of the development activities expected to occur in the U.S.

Interpace Biosciences announced on December 5 that it is continuing to expand a previously announced partnership agreement to jointly develop, promote and offer translational studies and clinical trial solutions to biotech and pharma companies with Genecast (Beijing) Biotech of China.

Numab Therapeutics and 3SBio announced on December 12 that latter's subsidiary Sunshine Guojian Pharmaceutical (Shanghai) Co., Ltd. and Numab have formed a partnership focusing on the development and commercialization of a portfolio of novel multi-specific antibodies for the therapy of cancer based on Numab's technology platform.

Merck Group and PingAn Good Doctor signed an agreement to explore integrated health solutions in China. The collaboration will leverage PingAn Good Doctor's extensive experience in AI medical technology, insurance provision and online and offline healthcare resources and Merck's medical expertise, high-quality medicines and innovative solutions and to develop an integrated one-stop healthcare solution.

GI Innovation said that it has licensed out GI-101, a bispecific fusion protein for treating solid tumors, to Simcere, a Chinese pharmaceutical company. GI-101 is a bispecific immunotherapy agent made using the GI-SMART platform, a technology for developing bispecific fusion proteins owned by GI Innovation.

A few Chinese pharma related M&A deals have been on the horizon. Harbin Pharmaceutical Group is poised to take over and privatize US vitamin and retailer supplier GNC. The firm acquired a 40% shareholding in the company last year, initiating an e-commerce business in joint venture with GNC in China.

CRO Frontage Holdings Corporation announced it will acquire 100% of BRI Biopharmaceutical Research through an indirectly wholly-owned subsidiary.

Achaogen Inc., the bankrupt biotech developer of antibiotic Zemdri, has agreed to sell its China assets for US$4.5 million to a Hong Kong buyer after a licensing deal fell apart.

On the contrary, Granules India is selling its entire stake in Granules-Biocause Pharmaceutical Co., an equal joint venture in China, to JV partner Hubei Biocause Heilen Pharmaceutical Co for CNY 109 million.

The Chinese CDMO sector saw many developments in the past month. Through its collaboration with BeiGene, Ltd. and the provision of manufacturing services for their monoclonal antibody tislelizumab, Boehringer Ingelheim Biopharmaceuticals China became the first company to successfully apply the adopted MAH system.

GenScript's plasmid and virus facility was put into operation on December 18. It is a milestone on the path to industrialization of the gene and cell therapy industry, pioneered by GenScript.

East China's Shanghai launched a factory on December 18 to engineer human immune cells to provide personalized therapies for certain types of cancer patients. Located in the Zhangjiang High-Tech Park, the facility is expected to have commercial production capacity around 2020.

WuXi Biologics (2269.HK) and Convalife jointly announced that the two parties have reached a cooperation on the development of an innovative anti-tumor bispecific antibody.

CRO George Clinical and Guangdong Provincial People's Hospital (GDPH) have executed a memorandum of understanding laying out broad collaboration in the area of clinical research in China.

Avantor opened a laboratory in Shanghai, which will help biopharma companies accelerate the development of life-changing treatments for patients in the region. It will specifically focus on enhancing industry capabilities in the development and manufacture of safe and effective biological medicines such as mAbs and cell & gene therapy.

Besides, a few domestic players continued the rush to raise more money to facilitate pipeline building and expansion.

JOINN Biologics has raised US$60 million in a series A round of financing led by the country's private equity investment firm Huagai Capital, while EOC Pharma secured nearly CNY 500 million (US$71 million) in a Series C round of financing led by Tigermed.

Alphamab Co. Ltd. is the latest money-losing Chinese biotech company planning to list on the Hong Kong Stock Exchange (HKEx), where it hopes to raise HK$1.8 billion (US$230 mln) with an IPO in December.

Meanwhile, investment return of Chinese biotech startups is becoming an increasing concern. So far, a total of 12 pre-profit Chinese biotech startup companies have won listing at the Hong Kong Stock Exchange (HKSE) from April 2018, when HKSE altered its rules to allow listing of startup companies which have yet to turn profitable. Seven of them saw their share prices falling below their IPO level with Ascletis dropping as much as 75%.

Last but not the least, Zai Lab announced on December 27 the NMPA approved the New Drug Application for ZEJULA (niraparib), an oral, once-daily PARP inhibitor as maintenance therapy for adult patients with recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer, who are in a complete or partial response to platinum-based chemotherapy.

Cautious optimism on November figures and trade deal amid plenty of downside risks

The pickup in China's economy in November adds to the optimism from the trade deal announced last week, though plenty

of downside risks remain as the nation heads into 2020.

Beijing and Washington agreed on December 13 on the text of a phase one trade deal that will halt the introduction of new tariffs and lower some already in place, providing a slight boost in confidence for the Chinese economy.

Alongside the breakthrough in trade negotiations, China's industrial production and retail sales both grew faster than expected last month, data from the National Bureau of Statistics showed, although economists were divided on whether it signaled the growth rate had bottomed out or it was simply a seasonal rebound.

Industrial output and private consumption were both much stronger than expected, with production jumping 6.2% from a year earlier and retail sales climbing 8%, data released on December 15 showed. At the same time, fixed-asset investment in the first 11 months of this year grew at 5.2%, the slowest pace since at least 1998.

If the trade deal is signed early next year as the U.S. has indicated and tariffs on some Chinese goods are lifted, it would go some way to dispel some of the uncertainty that has been hanging over the economy. Domestically, policy makers still face questions about the sustainability of debt and rising defaults, but the government has emphasized policy stability and there is little chance of a change until at least March next year, when authorities meet to approve 2020's broad policy guidelines.

Whether there will be a rebound in sluggish investment will be closely watched going into next year. There was a slight pickup in fixed-asset investment by private companies, according to the November data. But growth was still weaker than expected for state-owned firms, indicating that private companies are still less confident about the economy. This may also reflect the increased difficulty they have in accessing credit.

To boost growth, the central government is encouraging local governments to sell more bonds earlier in 2020 to pay for infrastructure spending.

For 2020, the nation's leaders said last week that they want to prioritize stability and keep growth within a "reasonable range." Fiscal policy should be more proactive and effective, while prudent monetary policy should be "flexible and appropriate," according to a statement released after the Central Economic Work Conference.

"For current and future periods, the basic trend of the Chinese economy remains unchanged … [it is] making progress in the long term while maintaining overall stability," said Meng Wei, spokeswoman of the NDRC.

Debate has been heating up in recent weeks about whether Beijing should set a GDP growth target above 6% in 2020. Domestic growth is expected to slow further in the fourth quarter and into next year from the 6% growth posted in the third quarter of 2019, which was the lowest in nearly three decades.

China continues drug regulatory reform with NHSA firing the first shot on drug pricing

First thing first, the People's Congress of China adopted the *Law on Promoting Basic Medical and Health Care*. As the country's first fundamental and comprehensive law on basic medical and health care, the law will take effect from June 1, 2020.

In addition, central government agencies moved to introduced a range of new regulations affecting various fronts of drug regulation in the past month.

The National Healthcare Security Administration (NHSA) issued a new policy, *Opinions for Perfecting Contemporary Drug Price Regulation (Yi Bao Fa 2019#67)*, on December 6 for immediate effect.

Earlier, the NMPA and the NHC jointed issued the *Provisions for Drug Clinical Trial Institutions (2019#101)* on November 29. The regulation becomes effective on December 1, 2019. The regulation has 28 articles in five chapters covering the generic principles, conditions & filing,

The General Department of NMPA and the General Office of NHC jointly issued a new document, *Notice for Vaccine IT Tracing Infrastructural Building*, on December 12. A summary of key provisions is provided.

The NMPA issued a notice (2019#103) announcing relevant matters relating to implementation of the *Drug Administration of PRC* on November 29. According to the notice, the NMPA is currently working on relevant complementary rules, documents and technical guidelines which will be issued in due time.

The NMPA has jointly built a drug import & export permit management system with the Chinese Customs on the international trade "single window" public platform. The system was initiated on December 25, 2019.

The NMPA, the Ministry of Public Security and the NHC announced on December 27 that remazolam (including its possible salts, unilateral preparations and isomers) will be regulated as class 2 psychotropic (No. 108 of 2019) with effective from January 1, 2020.

The agency released a notice (2019#102) on November 29 to announce the withdrawals of 68 certificate requirements (third batch) for various types of applications stipulated in its departmental regulations and normative documents, many are related to drug registration.

In an effort to streamline drug quality sample inspection, the General Department of NMPA issued, the *Principles and Procedures for Drug Sampling*, following public comment seeking in November.

The NMPA/CDE reportedly pledged commitments to CDISC Standards for electronic data submission in China. The new eCTD stipulates the use of SDTM, CDISCs standard for formatting and organizing study data, and ADaM, CDISCs standard for data analysis, for pharmaceutical sponsors submitting datasets in clinical trial databases and related materials.

The NMPA issued the *Technical Guidelines for Clinical Comparability Studies of Preventative Vaccines (2019#94)* on December 24 to guide R&D and evaluation of non-innovative vaccines and ensure similar safety and efficacy of vaccines in the same category.

The NMPA introduced the *Technical Guidelines for Aluminum Adjuvant in Preventative Vaccines*, which was formulated and finalized referencing relevant international guidelines and following expert panel discussions and public comment seeking.

The NMPA Issued the *Guiding Principles for Classification Standards for ADRs of Clinical Trials for Preventative Vaccines (2019#102)* on December 31, replacing the same document issued by the CFDA previously in 2005.

NMPA announced the initiation of its drug business application system on December 31. The system was developed to handle regulatory certification relating to drug import and export, including the drug export sales certification, API export certification for the EU, import and export licenses for narcotics and mental health drugs, as well as permits for initial import of TCM crude drugs.

The NMPA has jointly built a drug import & export permit manage-

ment system with the Chinese Customs on the international trade "single window" public platform. The General Office of NMPA announced recently to initiate this system (NMPA Announcement 2019#631).

Besides, agencies released a few draft documents for public comments. With the newly amended *Drug Administration Law of PRC* and the *Vaccine Administration Law of PRC* going into effect on December 1, the State Administration of Market Regulation, the superior agency of the NMPA, issued a draft revision of the *Provisions for Registration of Drug Products* for public comments before December 17.

The CDE released the draft *Guidelines for Clinical Protocol of Biosimilar of Liraglutid Injection* on December 25 and is now seeking public comments on it within one month from the date of publication.

In an attempt to improve the naming principle of the generic names of biological products, streamline generic names of recombinant therapeutic biologics, the ChP Commission published a draft revision to the No.1 Addendum of the *Chinese Pharmacopoeia 2015* – the *Naming Principles of the Generic Names of Biological Products*, for public feedbacks.

Separately, the number of licensed pharmacists totaled over 1.03 million in China by the end of November, data from the NMPA showed. Over 460,000 licensed pharmacists were registered in retail drug stores.

Chinese government remains preoccupied with healthcare cost containment despite worrisome shortages

The Healthcare Reform Leaders Group of State Council released on November 29 a new policy document, *Certain Policy Measures for Further Deepening Pharmaceutical and Healthcare System Reform through Centralized Drug Purchase and Use*, to deepen and expand the experiment of national level centralized drug purchase and use trial (4+7 trial) nationally.

The NHSA and NHC issued thereafter a joint notice recently to facilitate BMI access of 97 negotiated drug products. The notice requires all provincial level healthcare security and health departments to ensure direct online drug purchase listing of 97 drug products which prevailed in the BMI reimbursement access negotiation earlier.

Similarly, the General Office of the NHC issued a notice for to facilitate inventory and use of tender prevailing drugs at the national level centralized drug purchase trial (expanded 4+7 trial).

Later, the Allied Purchase Office of the National Level Centralized Drug Purchase Trial (expanded 4+7 trial) released the national level centralized drug purchase document (for second round of centralized purchase) (GY-YD2019-2) on December 29.

In an attempt to further streamline the clinical use of new anti-cancer drugs, the NHC issued the revised 2019 edition of the *Clinical Application Guidelines for New Anticancers* on December 20.

Besides, the NHSA Issued the *Interim Regulation for Government Information Publication* on December 17 with effect from the date of issuance. The document has a total of 47 articles in seven chapters.

The National Drug Usage Monitoring Platform is now online, according to the Information Center under the NHC. It is reported that 8,840 medical institutions have registered on the platform, which already has 600,000 average daily visits.

China will take comprehensive measures to control HIV transmissions in a bid to keep HIV/AIDS prevalence in the country at a low level, the NHC said on Nov 30, the day before World AIDS Day.

The country also plans to enable all schools to offer psychological services for students by the end of 2022 as part of an action plan targeting the mental health of children and adolescents.

At the provincial level, the Health Department of Shanghai issued a new document, *Implementation Plan for Stepping Up Clinical Research of Medical Institutions in Shanghai to Support Development of Biopharmaceutical Industry Development*, on December 16.

The Godsend window of opportunity for MNCs to recalibrate China strategy and reallocate resources

Enough about the agreement details. Let me tell you what I really think about this deal and how R&D-based MNC pharma companies should make the best use of this Godsend opportunity window for long term strategic positioning.

Before I start, let me reinstate my view all along – that is MNCs will always have a share of the Chinese market they deserve for the sake of their innovative product pipelines, in good or bad times of Chinese economy or international politics. After-all, elites and their confidants want reliable and innovative medicines. Don't underestimate this business, I believe the population base we are talking about is in the region of at least 100 million privileged and somewhat privileged people. MNCs can safely bet on the smartness of the *Mandarins* to steer away from jeopardizing the bread & butter business of MNC pharma companies in China, for the sake of their own health and benefits of course. Pharmaceutical companies are not bean growers, anyone in the right state of mind won't mess with supply of drug products they can trust.

The bottom-line lies with the strength of core innovative product portfolios of MNCs, rather than excessively-paid super CEOs, whose skill is useful for spinning off-patent originator drugs to the last minute of their product lives.

There may still be desirable opportunities in future above the base, by way of opportunist and longer-term prospects. Allow me to further discuss my thoughts below about taking advantage of the opportunity window created by the Phase 1 U.S.-China Trade Deal.

First and foremost, I think the current trade deal is more of a temporary truce than a reliable sustainable agreement. The halt happens to be needed at present by both sides to take a break and reposition. As the U.S. has a clear upper hand back by a robust domestic economy and China is in urgent need to stabilize its home front, the latter is forced to buy the interval with unwilling promises for substantial immediate purchases and low-level structural reform. In my opinion, both sides know such a deal won't last long. For the time being, China will need to deliver some of its promises right away to keep the U.S. happy and at bay, but the first potential flop point down the road may come around the third quarter of next year, when the U.S. presidential race reaches its critical phase. If China concludes then that its best interest is with Trump, we may see a prolonged opportunity window, which may even lead to some painstaking but meaningful reform eventually. Otherwise, expect turbulences.

Some experts argue that the Phase 1 Deal has set the Chinese purchase goal too high at US$200 billion for the next two years and there is no way China can achieve this. To this, I would say opportunity knocks for the MNC pharma companies, although such luck may not be sustainable. But who knows, it's China.

Additionally, the pharmaceutical market is one area China can demonstrate some concrete changes to appease the U.S. for now. In fact, many reforms, both regulatory and IP, are to the

country's own benefit, which include enhanced access to better medicines by at least some of its population and more incentives for domestic drug innovation.

While such are positive developments for MNC pharma companies, it is important not to fall for the trap one more time. As I said, the Chinese market opportunities due to the MNCs are driven more by their product portfolios than the size of their presence or investment in China. Yes, MNCs may need to have at least some manufacturing and product development capacity in China, given it is a larger market even at the barebone, but such should be business decisions made on top of long-range strategic vision, rather than market access quid pro quos.

When the baggage of off-patent originator drug is disposed, the premise of "exchanging investment or advanced technology for market access" will lose its merit, let alone this is exactly what a critical part of the Phase 1 trade deal is about. MNC pharma companies should focus more attention on fostering a dignified, fair and balanced long-term relationship with the Chinese government. It is pathetic to negotiate prices of advanced medicines like housewives pushing cabbages in country farm markets, not to mention the short-sightedness and unsustainability of such businesses and relationships.

The biggest catch for long term success of MNCs in China is whether their core products are innovative, competitive and differentiated enough against their peers and domestic rivals? I guess what's tied with this is whether these companies are prepared to make the absolutely best effort protecting/policing their own IPs and are vigilant/smart enough not to create and foster their own competitors. I would strongly urge companies to start by reviewing and recognizing their past mistakes with China business.

The historical window of opportunity is now at the door for MNCs that are ready to recalibrate their China strategies and reallocate resources. The window could be just a few months or a bit longer, during the timeframe forex control may become more relaxed and reactions to major business decisions are expected to be more benign. In any event, I would advise companies to plan and act sooner than later.

Well, should any deal breaker surfaces between now and early January, when the agreement signing is planned, all-out trade war may be back on again. If that's the case, we will discuss the scenarios next month.

On the other hand, sharply lower prices outside of the U.S. is only possible on the back of high U.S. drug pricing which is not sustainable and sooner or later U.S. politicians will succeed in regulating drug pricing in one way or the other. Shouldn't MNCs be prepared for that and short-sighted impulses to cooperate with China's aspiration for the lowest drug prices worldwide will eventually backfire.

News in Focus

China Adopts New Law to Promote Basic Medical and Health Care

The People's Congress of China adopted the Law on Promoting Basic Medical and Health Care. As the country's first fundamental and comprehensive law on basic medical and health care, the law will take effect from June 1, 2020.

The law aims to promote the medical and health care development in China, ensure its citizens have access to basic medical and health care services, improve the health of its citizens and build a "healthy China". The medical and health care industry shall take a people-centered approach and always serve the public, says the law.

The law stresses empowering grassroots medical institutions and channeling more resources to the grassroots. The country should give priority to developing community-level healthcare facilities and better supporting medical workers in local communities and poor remote areas, says the law. It also requires the establish-ment of a system in which medical staff are dispatched to work in local communities and remote areas with harsh conditions on a regular basis.

The law says special preferential treatment shall be given to medical personnel working in local communities and remote areas in terms of remuneration, allowances, career development opportunity and awards, among others. The law also highlights the importance of medical and health care education. It incorporates health education in the national education system and encourages schools and universities to carry out health education in various forms.

According to the law, governments at all levels should strengthen health care education and professional personnel training, establish a system for releasing key information on health care knowledge and skills, and provide scientific and accurate health care information to the public.

State Council Issues New Centralized Drug Procurement Purchase and Use Policy

The Healthcare Reform Leaders Group of State Council (HRLGSC) released on November 29 a new policy document, *Certain Policy Measures for Further Deepening Pharmaceutical and Healthcare System Reform through Centralized Drug Purchase and Use*, to deepen and expand the experiment of national level centralized drug purchase and use trial (4+7 trial) nationally. The document includes the following 15 major provisions:

1. Comprehensively deepening the national level drug purchase and use reform to orderly expand the territory and product scope of the 4+7 trial with priority given to those originator drugs with prices higher than leading and surrounding countries and those with large price gaps between originator and generic products. (Responsibilities of NHSA, NHC and NMPA)
2. Building the national public procurement market for drug products with the coordination of multiple stakeholders, and on the basis of uniform coding, standards and guidelines, as well as connectivity and sharing of information (e.g. drug price) and resources. (Responsibilities of NHSA, NHC and NMPA)
3. Elevating drug quality level with active promotion of GQCE evaluation and IT drug tracing, prioritizing with vaccines and drug products under the expanded 4+7 trial before the end of 2020. (Responsibilities of NMPA, NHC and NHSA)
4. Securing stable supply of drugs through improving survey, assessment, performance evaluation and surveillance of pharmaceutical manufacturers, starting with products under the expanded 4+7 trial. (Responsibilities of NDRC, MIIT, The People's Bank, NHC, SAMR and NHSA with participation of NMPA)

5. Improving the efficiency of drug purchase payments and encouraging direct settlement among BMI agencies and pharmaceutical manufacturers & distributors with strengthened drug purchase payment surveillance. (Responsibilities of NDRC, NHC, State Audit Administration (SAA), and SATCM)
6. Promoting and building a nationally uniform open pharmaceutical distribution market landscape through encouraging fair competition, breaking down local protectionism and boosting industry consolidation. (Responsibilities of MIIT, MOFCOM, NHC, State Taxation Administration (STA), NHSA and NMPA)
7. Advancing coordinated reform including dynamic adjustment of medical service prices, without increasing individual financial burden. 2020-2022 is a key window period for reform. (Responsibilities of HRLGSC, NHSA, NHC, MOF and SATCM)
8. Beefing up the reform of remuneration system of public hospitals. (Responsibilities of MOHRSS, MOF, NHC and SATCM with participation of NHSA)
9. Strengthening regulation of drug application in medical institutions through upholding the leading role of essential drugs and optimization of drug consumption structure, as well as prioritized inventory and use of NEDL-listed and NRDL-listed drug products. (Responsibilities of NHC, NHSA and SATCM)
10. Pushing forward the implementation of BMI drug payment standards, beginning with drug products purchased under the expanded 4+7 trial and through NRDL access negotiation. In principle, originator, reference and GQCE products under the same generic drug name with the same dosage form and specification shall be paid under the same uniform BMI payment standard. GQCE drug products shall be added to the list of mutual substitution with originator drugs. Physicians are encouraged and guided to use GQCE products, and they are required to inform patients about generics when available. Drug products purchased under the expanded 4+7 trial shall be prioritized for purchase and use. Pharmacists shall be entitled to Rx verification according to relevant rules and regulations. (Responsibilities of NHC and NHSA)
11. Deepening reform of BMI payment system with steady expansion of DRG trial and exploring the TCM payment schemes of special characteristics. Global control budgets of designated medical institutions shall not be reduced for rationalizing the use of drug products purchased through the expanded 4+7 trial. (Responsibilities of NHSA, NHC, SATCM and MOF)
12. Improving BMI fund regulatory mechanism to control excessive medical treatment, irrational drug use and other BMI abuses. Commercial health insurance and social capital are encouraged to participate in businesses under the BMI, critical illness insurance and medical assistance programs. (Responsibilities of NHSA and CIRC)
13. Advancing refined regulation of medical services by improving performance evaluation. Setting up the drug rationalization surveillance system and the physician interview system before June 2020. (Responsibilities of NHC and SATCM)
14. Perfecting the national drug price surveillance system to strengthen domestic drug purchase price surveillance and foreign drug price monitor as references. Conducting NRDL access negotiation with import and innovative medicines meeting standards. Building the routine drug price regulatory mechanism through measures including interviews, cost investigations, credit assessment and information disclosure. Stepping up drug price enforcements with strict crackdown on price and monopolistic violations. (Responsibilities of NHSA and SAMR)
15. Accelerating IT infrastructure building with information sharing and connectivity for hospital Rx, BMI settlement, medical service regulation, drug tracing, budgetary control and tax supervision, as well as with standard coding for drug purchase, use and payment. Before the end of 2020, NHSA, in association with the NHC, shall develop the public hospital BMI regulatory system for trial in qualified large and mid-size cities. (Responsibilities of NHSA, NHC, MOF, STA SATCM and NMPA)

For full text of this policy document in Chinese, please visit the following NHC weblink: http://www.nhc.gov.cn/tigs/s7846/201911/9afbf28f5ed04547a3bd9bf9074c2815.shtml

NHSA and NHC Issue Joint Notice to Facilitate BMI Access of Negotiated Drugs

The NHSA and NHC issued a joint notice recently to facilitate BMI access of 97 negotiated drug products. The notice requires all provincial level healthcare security and health departments to ensure direct online drug purchase listing of 97 drug products which prevailed in the BMI reimbursement access negotiation earlier.

The notice also provides that all local healthcare security and health departments should establish specific requirements relating to inventory and use of negotiated products, and guide their timely inventory and rationalized application by designated medical institutions according to their specific positioning, clinical need and clinical capacity.

Finally, the notice bans local governments from restricting the inventory and use of negotiated drug products using excuses including BMI global budget control, hospital drug formulary limits and cap on drug expenditures share in total medical institution revenues.

For full text of this notice in Chinese, please visit the following weblink: http://www.nhsa.gov.cn/art/2019/12/18/art_37_2181.html

NHC Issues Notice to Facilitate Inventory and Use of Tender Prevailing Drugs at the Expanded 4+7 Trial

The General Office of the NHC issued a notice for to facilitate inventory and use of tender prevailing drugs at the national level centralized drug purchase trial (expanded 4+7 trial).

The notice includes the following key provisions:

1. Intensified attention from all levels of local governments and public medical institutions for purchase and use of such tender prevailing drug products;
2. Local health departments are ordered to supervise and guide medical institutions to fulfill purchase of their committed purchase volumes and complete contracted consumption in time. No excuses including various cost containment measure requirements shall be accepted. Medical institutions are required to optimize their drug consumption structure and include such products in their drug formularies and essential drug supply lists. Medical consortiums are encouraged to adopt the uniform tender prevailing drug product supply list for their member facilities;

3. The consumption of such tender prevailing drug products shall be rationalized through formulation of drug use guidelines and incorporation into clinical pathways with strengthened physician Rx appraisals;
4. Setting up relevant incentive and performance evaluation systems with heads of medical institutions as the No.1 responsibility holders. The usage requirement ratio of tender prevailing drug products under the 4+7 trial shall be introduced to level 2 public medical institutions gradually on the basis of full performance evaluation in level 3 public hospitals; and
5. Boosting surveillance for clinical consumption of such tender prevailing drug products by establishing and improvement relevant systems for usage surveillance, appraisal and early alert of such products.

Relevant contact is as follows:

Medical Administration Department, NHC

Tel: +86 10-68791976 and 68792730 Fax: +86 10-68792206

For full text of this document in Chinese, please visit the following NHC weblink: http://www.nhc.gov.cn/yzygj/s7659/201912/7b1639fb14ca4cd59cd33f367455d92d.shtml

Document for New Round of National Level Centralized Drug Purchase Trial Released

The Allied Purchase Office of the National Level Centralized Drug Purchase Trial (expanded 4+7 trial) released the national level centralized drug purchase document (for second round of centralized purchase) (GY-YD2019-2) on December 29.

The Office, which will make purchase decisions on behalf of public medical institutions as well as selected military and private medical facilities, is composed of representatives from all mainland Chinese provincial governments and Xinjiang Production and Construction Corps.

The purchase tender implementation and other routine work shall be undertaken and facilitated by the Shanghai Centralized Drug Purchase Tender Agency.

The purchase product catalog for the second round of centralized purchase of the expanded 4+7 trial is composed of 33 drug products of 60 product specifications. Compared with the previously-reported draft catalog with 35 drug products, two products (metformin slow release and regular oral dosage forms) were removed.

It was also reported previously that all product specifications in the catalog for national level centralized purchase shall have at least three suppliers passing GQCE evaluation.

In the final catalog released, however, only 37 of the 60 product specifications have three GQCE suppliers and 16 others have only (one) exclusive suppliers.

For full text of the tender purchase document, the purchase product catalog and purchase volumes commitments, please visit the following official weblink: http://www.smpaa.cn/gjsdcg/2019/12/29/9205.shtml

Expanded 4+7 Trial to Add 35 More Drug Products for National Level Purchase

The Allied Procurement Office of for National Level Centralized Drug Purchase and Use recently issued a notice to require local submissions of relevant past and proposed procurement data for 35 additional drug products newly included in the expanded national level centralized and volume-linked drug purchase trial (expanded 4+7 trial), according to various Chinese press reports.

In a related development, the Allied Procurement Office held a hearing for centralized drug purchase on November 27 in Shanghai to prepare for the next round of purchase tender under the expanded 4+7 trial.

It is reported the 35 newly included drug products are commonly-used products with large clinical volumes and multiple competitive suppliers. Producers of GQCE products are available for each of these products.

Official announcement is yet to be released but please visit the following weblink for a glimpse of these 35 products in Chinese as reported by the Chinese press. https://mp.weixin.qq.com/s/lGfusmywnZJKuTvTk12yiw

NMPA Issues the *Notice on Relevant Matters for Implementation of the Drug Administration Law*

The NMPA issued a notice (2019#103) announcing relevant matters relating to implementation of the Drug Administration of PRC on November 29. According to the notice, the NMPA is currently working on relevant complementary rules, documents and technical guidelines which will be issued in due time. This notice made the following clarifications or announcements.

1. *MAH* – As of December 1, 2019, all holders (manufacturers or research institutions) of drug registration certificates (drug approval numbers, import drug registration certificates, pharmaceutical product registration certificates) are deemed drug marketing authorization holders (MAHs) and they shall fulfill all obligations of MAHs to be responsible for the safety, efficacy and quality control in the entire process of drug R&D, production, distribution and use.
2. *Clinical trial institution filing regulation* – All such institutions shall be subject to filing regulation from December 1, 2019. Applications for designation of such institutions shall no longer be accepted or approved.
3. *GMP and GSP requirements* – GMP and GSP certifications are withdrawn from December 1, 2019. Such applications shall not be accepted and no more certification shall be issued. Those certification applications accepted prior to this date shall be handled according to previous rules. Those completing inspection and meeting standards prior to this date shall be issued GMP or GSP certificates. Onsite inspections required by existing laws and regulations shall be continued after this date.
4. *Linked evaluation and approved of chemical drug APIs* – As of December 1, 2019, drug registration certificates for chemical drug APIs shall no long be issued. API manufacturers shall register such products on the registration platform of APIs, excipients and packaging materials for linked evaluation and approval.
5. *Penalties for violations* – Violations taking place prior to December 1, 2019 shall be subject to the *Drug Administration*

Law before the latest amendment, except those not deemed to be violations or have lower penalties. Those taking place after this date shall be subject to the newly amended *Drug Administration Law*.

For full text of this notice in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/371672.html

NHSA issues New Policy for Drug Price Regulation

The National Healthcare Security Administration (NHSA) issued a new policy, *Opinions for Perfecting Contemporary Drug Price Regulation (Yi Bao Fa 2019#67)*, on December 6 for immediate effect.

The NHSA said the policy is formulated in accordance with earlier State Council policies for stabilizing drug supply and price, and in line with China's price and drug administration laws.

The following is an extensive summary of the new document prepared exclusively by WiCON|Pharma China for its subscribers.

Linking and perfecting existing drug pricing policies

The NHSA begins the document with a statement claiming the document seeks to "perfect the market-led drug formation mechanism, persisting the decisive role of market force in resource allocation, while better upholding the role of government, on the basis of contemporary drug pricing policies.

- Persisting on the general direction of market-force based drug pricing.
- Upholding the role of BMI system in guiding drug price formation with deepened reform of centralized drug purchase system which persist on linking volume with purchase, volume with price and tender with purchase.
- Advancing the reasonable price differential relationship among different dosage forms, specifications and package sizes of the same product on the basis of comparable full treatment course cost, clinical efficacy, cost/value, technical level, and other factors. Full rules shall be introduced by the NHSA separately.
- Narcotic and psychotic drug products shall be subject to the control of maximum ex-manufacturer/import destination price and maximum retail price with new rules and policies to be explored and formulated.

Establishing and improving the routine drug price regulatory mechanism

The regional and national level allied drug purchase mechanism shall be built on the basis of provincial BMI tender purchase agencies with uniform coding, standards and guideline to improve connectivity, resource sharing and coordinated policy implementation. On the basis of respecting the market force and self-pricing rights of businesses, measures including surveillance and early alert, interviews, warnings, cost investigations, credit appraisals and information disclosures shall be utilized to establish and perfect the routine drug price regulatory mechanism. Self-discipline of businesses in drug pricing shall be promoted.

- Establishing the surveillance and early alert mechanism for abnormalities of drug supply and prices, with NHSA responsible for international price information surveillance and provincial level health security departments responsible for monitoring local price and supply changes.
- Strengthening routine regulation through mailed notices and interviews for excessive or frequent price hikes, large regional or online/office price differences, unreasonable distribution margins and delivery failures.
- Improving the mechanism for drug price and cost surveys.
- Exploring establishment of the incentive and penalty system for creditworthiness and bad faith.
- Stepping up social supervision through measures including information disclosure.

Refining the centralized drug price tendering and purchase in relation to stabilizing drug supply and price

In the principle of prioritizing drug supply and clinical needs, supply of shortage drugs is encouraged with prevention measures for profiteering price hikes.

- Facilitating relevant online listing and purchase policies for shortage drugs.
- Refining the working rules for online listing and purchase of shortage drugs with guidance from provincial level health security departments and increased surveillance and regulation, but without unreasonable government intervention.
- Beefing up information sharing and mutual connectivity among local healthcare security departments.

For full text of this policy in Chinese, please visit the following NHSA weblink: http://www.nhsa.gov.cn/art/2019/12/6/art_37_2149.html

SAMR Solicits Public Comments on the *Provisions for Registration of Drug Products*

With the newly amended *Drug Administration Law of PRC* and the *Vaccine Administration Law of PRC* going into effect on December 1, the State Administration of Market Regulation, the superior agency of the NMPA, issued a draft revision of the *Provisions for Registration of Drug Products* on December 10 for public comments.

Comments need to be submitted before December 17 via one of the following means:

1. Visiting the SAMR website (http://www.samr.gov.cn): Go to the "Interactions (互动)" Section, under which there is a sub-section "Comment Seeking (征集调查)".
2. Via email fgs@saic.gov.cn: Please mark "Comments for the Provisions for Registration of Drug Products (药品注册管理办法〈征求意见稿〉公开征求意见)" in the subject line.
3. Via regular mail to: The Legislation Department of State Administration of Market Regulation, 8 San Li He Dong Lu, Xicheng District, Beijing 100820, China. Please mark "Comments for the Provisions for Registration of Drug Products (药品注册管理办法〈征求意见稿〉公开征求意见)" on the envelop.

For full text of the draft document in Chinese, please visit the following SAMR weblink: http://www.samr.gov.cn/hd/zjdc/201912/t20191210_309138.html

The NMPA issued a revision draft on September 30 for industry comments before October 30. The SAMR did not mention if the latest draft has any variation from the earlier draft.

Please visit to following WiCON|Pharma China weblink for an extensive summary of the earlier draft released by the NMPA on September 30.

http://www.pharmachinaonline.com/WebEdition/index_news_news.asp?id=28425&sortid=13

The Market

PHIIC: Data Snapshots of Chinese Pharmaceutical Market 2013-2019E

Pharmadl, an arm of the China Pharmaceutical Industry Information Center (PHIIC or CPIIC), recently released the following topline data on the overall Chinese drug market, innovative drug sales in China and sales of 25 drug products under the 4+7 trial.

The overall Chinese drug market is forecasted by PHIIC to rise 4.2% to CNY 17,141 billion in 2019. The center also projects the sales of 25 drug products covered by the 4+7 trial to shrink 1.18% by value and rise 12.16% by volume in 2019 in representative hospitals covered by Pharmadl.

On the other hand, PHIIE projects the Chinese sales value of innovative drugs to be CNY 11.12 billion in 2018, a 40% jump from CNY 8.06 billion in 2017. Such sales are equally shared by novel chemical drugs and biologics in 2018.

The following three tables provide more topline information on these subjects.

Size of Chinese Pharmaceutical Market 2013-2019E

Year	Market Size (CNY bln)			
	Chemical Drugs	TCMs	Biologicals	Total
2013	6,811	3,312	862	10,985
2014	7,791	3,422	1,167	12,380
2015	8,470	3,609	1,453	13,532
2016	9,171	3,620	1,836	14,627
2017	9,747	3,587	2,185	15,519
2018	10,429	3,443	2,578	16,450
2019E	10,547	3,578	3,016	17,141

Source: Pharmadl

Innovative Drug Sales Value in China 2012-2018

Year	Sales Value (CNY bln)		
	Chemical Drugs	Biologics	Total
2012	0.91	1.75	2.66
2013	1.30	1.96	3.26
2014	1.90	2.34	4.24
2015	2.56	2.74	5.30
2016	3.01	2.76	5.77
2017	3.91	4.15	8.06
2018	5.55	5.57	11.12

Source: Pharmadl

Average Annual Sales Value Per Innovative Drug in China 2012-2018

Year	Sales Value (CNY mln)	
	Chemical Drugs	Biologics
2012	129	291
2013	162	245
2014	173	234
2015	197	211
2016	184	231
2017	244	261
2018	292	348

Source: Pharmadl

Sales Value of 25 Products under 4+7 Trial in Rep Hospital 2014-2019E

Year	Sales Value (CNY bln)	+/- (%)	Sales Volume (Tablet/Bottle bln)	+/- (%)
2014	13.69		1.59	
2015	14.71	+7.45	1.72	+8.18
2016	16.01	+8.84	1.87	+8.72
2017	17.06	+6.56	2.05	+9.63
2018	18.57	+8.85	2.22	+8.29
2019E	18.35	-1.18	2.49	+12.16

Source: Pharmadl

Chinese Cancer Drug Market to Surpass $30+ Billion by 2025

Chinese cancer drug market will surpass US$30.5 billion by the year end of 2025, according to the "China Cancer Drugs Market, by Drugs, Cancer (Lung, Stomach, Breast, Esophageal, Liver & Others), Therapy, Companies" report from ResearchAndMarkets.com.

Cancer is one of the biggest burdens for so many public health departments across the world and China has even more cancer patients due to growing population at rapid pace. According to GLOBCAN, nearly 2.9 Million new cancer deaths happened in China in the year 2018.

In terms of cancer incidence, this rate is much lower in China than United States and United Kingdom. But in terms of mortality rate, China is almost 30% to 40% higher than the United States and United Kingdom. Moreover, increasing diagnostic center, improving cancer treatment therapy and acceptance of targeted drug therapy will further boost the China cancer market in forecast period. However, expensive cancer drug and various side-effects will also hinder the market.

China cancer drug market has grown rapidly in historical period and it is expected to grow significantly during the forecast period. There are various factors that will help the market to outperform: rising ageing population in China, changes of lifestyle and food habits, rising incidence rate of several type of cancer, rise in tobacco smoking population due to expansion of urbanization in China, improving healthcare infrastructure and facilities in China, increasing per capita disposable income, rising per capita health-care expenditure, improving awareness regarding cancer risk, potential due to emerging economies etc.

NH Reports on Chinese OTC Sleep Aids Market in MAT Q3/2018

According to a 2019 report by the Chinese Sleep Research Society, 24.6% of Chinese people suffer from sleep disorders, while the sleep quality of 94.1% of the public does not meet the healthy standard. Insomnia is becoming a significant issue in the younger population, especially among university students. Data from Shanghai-based China Business Network Data (CBNData) released in March 2018 found that 68% of the post-1990 generation believe they do not get enough sleep, citing work pressures and competition leading to late-night studying, worry over family & social pressures, a poor sleeping environment and lifestyle factors including mobile phone use before bedtime as key factors.

Sales of OTC sleep aids grew by 3% to CNY 3.5 billion (US$498.2

million) in the 12 months to September 2019. This growth rate was below the country average (5%) and performance may have been held back by changes to the way consumers manage their sleep problems.

A report released in July 2019 by CBNData found that, while consumers aged 40+ years still favor treatment-based remedies, the younger generations seek to optimize their sleeping via mattresses, bedding and pillows, as well as the use of sleep monitoring smart devices.

Online is becoming an increasingly important sales channel (not tracked in our topline), with the CBNData report citing the average online sales growth for sleep-friendly products such as bedding, devices and supplements has surpassed 10%.

According to Fu Xi, director of the supplements department at Alibaba's Tmall, revenue from sleep aid supplements on the platform increased 300% year-on-year in 2018, while the growth rate was over 200% in 2017. He also highlighted that consumers of sleep aids are getting younger, with 60% of the consumer base of certain brands born after 1985.

Chinese OTC Sleep Aids Market Facts MAT 09/2019

OTC sleep aids sales MAT 09/2019 (US$)	498.2 mln
OTC sleep aids sales MAT 09/2019 (CNY)	3.5 bln
US$: CNY (rate on 12/01/2019)	1 : 7.03
Index 2019/2018 (local currency):	103
Population:	1,393.8 mln
Per capita spend:	US$0.36

Source: Nicholas Hall (www.nicholashall.com)

Tasly Yang Xue Qing Nao (Tianjin Tasly) is the category leader. In January 2019, the NMPA ordered manufacturers of TCM Yang Xue Qing Nao granules to revise instruction leaflets following the results of an evaluation. Required amendments included changes to the side-effects, contraindications and precautions on labels. Rival TCM Aodong Anshenbunaoye (Jilin Aodong) and melatonin brand Nao Bai Jin (Stone Group) compete closely for the No.2 spot.

Top 3 Chinese OTC Eye Care Brands in MAT 09/2014

Rank	Brand	Marketer
1	Tasly Yang Xue Qing Nao	Tianjin Tasly
2	Aodong Anshenbunaoye	Jilin Aodong
2	Nao Bai Jin	Stone Group
3	Jolly Wu Ling Capsule	Zhejiang Jolly

Source: Nicholas Hall (www.nicholashall.com)

Industry News

Performance Snapshots of HKSE-Listed Pre-profit Biotech Startups

A total of 12 pre-profit Chinese biotech startup companies have won listing at the Hong Kong Stock Exchange (HKSE) from April 2018, when HKSE altered its rules to allow listing of startup companies which have yet to turn profitable.

Pre-profit Chinese Biotech Startups Listed at HKSE as of Dec 9, 2019

Code	Name	Listed Date	Startup Time	R&D
1672.HK	Ascletis	8/1/2018	4/2013	HCV, HIV, HBV
6160.HK	BeiGene	8/8/2018	10/2010	Small molecule targeted cancer therapy, tumor immunotherapy
2552.HK	Hua Medicine	9/14/2018	11/2009	Diabetes
1801.HK	Innovent Bio	10/31/2018	4/2011	Tumor, ophthalmology, mAbs for autoimmune and metabolic diseases
1877.HK	Junshi Pharma	12/24/2018	12/2012	Tumor immunology, autoimmunity, cardiovascular
2616.HK	Cstone Pharma	2/26/2019	12/2015	Tumor immunotherapy
6185.HK	CanSino Biologics	3/28/2019	1/2009	Vaccine
2181.HK	Mabpharm	5/31/2019	12/2015	Cancer, Autoimmune Disease mAbs
2696.HK	Henlius	9/25/2019	2/2010	Tumor, Autoimmune Disease antibodies
6855.HK	Ascentage Pharma	10/28/2019	5/2009	Cancer, hepatitis B
1875.HK	Tot Biopharm	11/8/2019	7/2010	Multiple mAbs, ADC, Oncolytic Virus Drugs and Special Tumor Drugs
3681.HK	SinoMab	11/12/2019	2001	Therapeutic Antibody Drugs for major diseases (malignant tumors, autoimmune inflammatory diseases and infectious diseases)

Source: Sinohealth

Performance of HKSE-listed Pre-profit Chinese Biotech Startups

Name	Latest Share Price (CNY)	Initial Offer Price (CNY)	Latest Share Price / Initial Offer Price		Below Initial Price?
			+/- (CNY)	+/- (%)	
BeiGene	114.80	108.00	+6.80	+6.30	No
Tot Biopharm	4.70	6.55	-1.85	-28.24	Yes
Henlius	40.35	49.60	-9.25	-18.65	Yes
Ascletis	3.44	14.00	-10.56	-75.43	Yes
Hua Medicine	5.03	8.28	-3.25	-39.25	Yes
Junshi Pharma	25.45	19.38	+6.07	+31.32	No
Cstone Pharma	10.50	12.00	-1.50	-12.50	Yes
CanSino Biologics	48.95	22.00	+26.95	+122.50	No
Mabpharm	1.11	1.50	-0.39	-26.00	Yes
Innovent Bio	28.40	13.98	+14.42	+103.15	No
Ascentage Pharma	34.75	34.20	+0.55	+1.61	No
SinoMab	4.03	7.60	-3.57	-46.97	Yes

Source: Sinohealth

R&D Spending and P&L of HKSE-listed Pre-profit Chinese Biotech Startups

Name	R&D Spending 2018 (CNY mln)	Net Profit (CNY mln)	
		2018	H1/2019
BeiGene	46.60	-46.36	-17.40
Innovent Bio	12.22	-57.71	-7.14
Cstone Pharma	8.50	-17.45	-12.36
Junshi Pharma	5.38	-7.16	-2.89
Henlius	3.65	-4.94	-3.17
Hua Medicine	2.69	-36.03	-2.36
Ascentage Pharma	2.50	-3.45	-6.33
Tot Biopharm	1.89	-2.68	-
Ascletis	1.43	-0.07	-0.47
CanSino Biologics	1.14	-1.38	-0.70
SinoMab	0.47	-0.84	-
Mabpharm	0.42	-1.25	-1.16

Source: Sinohealth

Local Company News

Shanghai Launches New "Cell Factory" for Cancer Therapy

East China's Shanghai launched a factory on December 18 to engineer human immune cells to provide personalized therapies for certain types of cancer patients.

The factory of Fosun Kite Biotechnology, a Sino-U.S. joint venture, will produce Yescarta, the world's first CAR-T therapy to treat certain types of large B-cell lymphoma. Located in the Zhangjiang High-Tech Park, the facility is expected to have commercial production capacity around 2020.

CAR-T, which genetically modifies the patient's own T cells to allow them to better identify and attack cancer cells, is seen as a revolution in cancer treatment research.

The cellular therapy, however, is costly, priced at 373,000 U.S. dollars in the United States. The new China factory is expected to bring down the price for Chinese patients.

"We expect that the localized production will greatly reduce the cost and give Chinese patients faster access to the drug," said Wu Yifang, board chairman of Fosun Kite.

Shanghai boasts a relatively mature biopharmaceutical production chain compared to other Chinese cities. In August, CARsgen Therapeutics, a Shanghai-based company, also launched its CAR-T production base in the city.

Zai Lab Announces NMPA Approval of ZEJULA (Niraparib) as Maintenance Therapy for Recurrent Ovarian Cancer

Zai Lab Limited (NASDAQ: ZLAB), a China and U.S.-based innovative commercial stage biopharmaceutical company, announced on December 27 the NMPA approved the New Drug Application (NDA) for ZEJULA (niraparib), an oral, once-daily poly (ADP-ribose) polymerase (PARP) inhibitor as maintenance therapy for adult patients with recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer, who are in a complete or partial response to platinum-based chemotherapy.

ZEJULA is a potent and highly selective PARP1/2 inhibitor that does not require BRCA mutation or other biomarker testing prior to administration.

The Committee of Gynecological Oncology, Chinese Anti-Cancer Association (CACA) has updated its clinical practice guidelines in Consensus of Chinese Experts on Recurrent Epithelial Ovarian Cancer to recommend ZEJULA (I/A category) as a maintenance treatment option for platinum sensitive recurrent ovarian cancer.

Zai Lab anticipates filing a supplemental NDA for ZEJULA (niraparib) with the NMPA as a first-line monotherapy maintenance treatment of platinum-responsive ovarian cancer patients soon after GlaxoSmithKline plc (GSK) files with the relevant global health authorities.

Wuxi Biologics and Convalife Form Partnership to Develop Innovative Anti-tumor Biospecific Antibody

WuXi Biologics and Convalife jointly announced that the two parties have reached a cooperation on the development of an innovative anti-tumor bispecific antibody.

According to the cooperation agreement, Convalife will use WuXiBio's integrated biopharmaceutical capabilities and technology empowerment platform to develop an innovative bispecific antibody. WuXiBio will provide technical support for the discovery, development and production of this product. The two sides will make full use of their respective advantages and resources to carry out cooperation to achieve win-win cooperation in the field of innovative biopharmaceutical research and development.

Harbin Pharmaceutical Group Poised to Take Over Ailing GNC

Chinese firm Harbin Pharmaceutical Group is poised to take over and privatize US vitamin and retailer supplier GNC. The firm acquired a 40% shareholding in the company last year, initiating an e-commerce business in joint venture with GNC in China. Harbin currently owns its stake as convertible preferred shares.

The potential takeover is complicated by GNC's heavy debt load, which four months ago stood at US$900 million, and the current political climate between China and the US. GNC has lost more than half its value over the past year.

GNC operates more than 4800 stores in the US and has franchises in 46 international territories. It is expected to shutter 900 outlets by the end of next year.

EOC Pharma Raised $71M in Series C Round

EOC Pharma, an oncology-focused biopharmaceutical company, on Monday announced that it has secured nearly CNY 500 million (US$71 million) in a Series C round of financing led by Tigermed, TF Capital, and Yingke PE. Hanne Capital and Everest Venture Capital Investment also participated in the round, while Life Venture served as financial advisor.

EOC had last raised US$32 million in a Series B round in 2017 from Taikang Investment, Sequoia Capital China, and H&Q Asia Pacific.

EOC was spun out of the oncology division of specialty pharma company Eddingpharm, which focuses on in-licensing, marketing and commercializing branded drugs from global pharmaceutical

companies. Headquartered in Taizhou, with offices in Shanghai, Beijing, Hong Kong, and Los Angeles, EOC manufactures and commercializes oncology products for China after securing licenses. It has a pipeline of six novel products from global biopharmaceutical partners.

In a statement, EOC Pharma chief executive Xiaoming Zou said the firm will continue to develop top-notch therapies for oncology treatments and seek partnerships with professional teams in and outside China.

In July, it inked a licensing agreement with Shionogi & Co to license-in epertinib, a HER2/EGFR inhibitor for focused development to treat brain metastasis in advance metastatic breast cancer patients. The agreement allows EOC Pharma to develop, manufacture and market epertinib in mainland China, Hong Kong and Macau, and to start developing the product in mainland China. Shionogi will receive an upfront payment as well as milestone payments according to the progress of the product development and royalties on post-launch sales.

Joinn Bio Raises $60M in Round A Financing

Chinese biological medicine start-up JOINN Biologics has raised US$60 million in a series A round of financing led by the country's private equity investment firm Huagai Capital. Chaosheng Capital, China Union Holdings Ltd. and Suzhou Xiangtang Venture Capital also participated in this round.

Proceeds of this round will be used for the construction of 100,000-liter-capacity production base in Beijing, and the expansion of business in China and the United States.

Founded in early 2018 as a subsidiary of JOINN Laboratories (China) Co., Ltd., JOINN Biologics is dedicated to becoming a leading biopharma contract development manufacture organization (CDMO). The company has a core technical team of nearly 200 Chinese and American experts, with nearly 20% of them have more than 15 years of experience in the field of protein drug research and development and production.

Biotech Startup Alphamab to Raise $230M in HK IPO

Cancer drug developer Alphamab Co. Ltd. is the latest money-losing Chinese biotech company planning to list on the Hong Kong Stock Exchange (HKEx), where it hopes to raise HK$1.8 billion (US$230 million) with an IPO in December.

The company will join seven other unprofitable biotech firms that listed on the HKEx this year, after the exchange relaxed its rules in 2018 to allow such companies to go public even if they have no record of profit or revenue.

Alphamab, which makes innovative biologics for the treatment of various tumors and gastrointestinal cancers but has no products on the market, is a second-tier player in China's cancer drug industry, behind companies like BeiGene and Innoventbio. The company began share sales on Thursday and the stock is set to begin trading on Dec. 12.

The company plans to issue 179.4 million shares or 20% of its total equity after expansion, selling 90% internationally and the rest in Hong Kong, according to a prospectus published by the exchange (link in Chinese). It will offer the shares at a price between HK$9.10 and HK$10.20 each.

That would net Alphamab between US$209 million and US$234 million, and value it at up to US$1.17 billion. It will use 75% of the takings on research and development, and spend 15% on facilities, the prospectus said.

According to the prospectus, the company is developing eight cancer drugs, four of which have reached the trial stage, with one in Phase III clinical trials – usually the final phase before drugmakers can begin seeking regulatory approval to sell them.

Seven cornerstone investors have joined the IPO with a total stake of 60%, led by Taikang Life Insurance Co. Ltd. with US$30 million, and including Greenwoods Capital Investment LLC, Morgan Stanley and Lake Bleu Capital Hong Kong Ltd. The stake is subject to a 180-day lockup period, a technique meant to control volatility.

Financial-related Company News in Brief

A number of recent financial-related news events of the Chinese pharma industry were recorded by WiCON|*Pharma China* in December 2019 as shown in the following table:

Company Financial News Brief December 2019 (1)

Announcement Date	Parties	Deal Size	Subject	Description
12/1/2019	Nanjing Pharma	CNY 72M	M&A	The firm acquired 70% of Jiangsu Enhua Herun Pharma for CNY 72.24 mln.
12/1/2019	EOC Pharma	CNY 500M	Fundraising	It completed a series C financing round, bagging CNY 500 mln to advance its lead programs EOC-103 and EOC-315 for breast and gastric cancers.
12/5/2019	CR Sanjiu and Gloria Pharma	CNY 1.42B	M&A	The two agreed on 100% acquisition of Aonuo Pharma by CR Sanjiu from Gloria at CNY 1.42 bln.
12/5/2019	Suzhou Ribo Life Science	CNY 203M	Fundraising	The firm raised CNY 203 mln in a series C1 round of financing. Proceeds will be used for clinical trial/R&D of its pipeline.
12/9/2019	Luye Pharma Group	US$ 205.8M	Fundraising	Luye proposed to acquire Shandong Boan Biotech for up to $205.8 mln to expand and diversify its pipeline into biologics.
12/10/2019	Beijing Yuanji Huayi Biotech	n/a	Fundraising	The firm, which supports the development of novel CNS drugs, recently completed its round A funding.
12/11/2019	YiChang HEC ChangJiang Pharma and AliHealth	n/a	Strategic Alliance	The two entered into a strategic cooperation framework agreement for influenza special projects.
12/17/2019	Chongqing Pharma and Tasly Pharma Group	n/a	M&A	Chongqing Pharma is to acquire from latter, by unspecified cash, 100% of Tianjin Tasly Pharma Sales Co. Ltd. and 100% of Shaanxi Tasly Pharma Logistics Co. Ltd..
12/18/2019	JOINN Biologics	US$ 60M	Fundraising	The firm raised $60 mln series A round to fund construction of its Beijing facility.
12/18/2019	Hui-Gene Therapeutics	CNY 100M+	Fundraising	The Shanghai startup secured over CNY 100 mln in a series A financing round for a gene therapy against genetic diseases caused by single-base mutations.

Source: WiCON|Pharma China

Company Financial News Brief December 2019 (2)

Announcement Date	Parties	Deal Size	Subject	Description
12/21/2019	China Medical Systems	GBP 25M	Investment	The firm is to invest £25m by plugging into AstraZeneca and Cambridge Judge Business School life science networks.
12/23/2019	Innovative Cellular Therapeutics	n/a	Fundraising	The firm has completed a new round of financing from LH Ventures.
12/30/2019	Shanghai Zerun Biotech	US$ 29M	Fundraising	It completed a refinancing by exchanging 11% of its shares for $29 mln in VC to pay down debt.
12/30/2019	Shanghai Elpiscience Biopharma	US$ 100M	Fundraising	It closed a $100 mln Series B round to develop its portfolio of 12 novel immunotherapy candidates through pre-clinical and clinical testing.

Source: WiCON|Pharma China

Foreign Company News

Roche Eyes China for Sarepta's DMD Gene Therapy

Roche wasted no time in getting back into the gene therapy game. After the Federal Trade Commission cleared the way last week for it to acquire Spark Therapeutics and its portfolio of treatments for genetically driven diseases, Roche followed up on December 23 with a massive US$1.2 billion collaboration with Sarepta Therapeutics for the biotech's experimental Duchenne muscular dystrophy gene therapy.

The scale of the deal confirms Sarepta's asset has a clear lead in DMD as its rivals have stumbled: US$750 million in cash and a US$400 million share purchase gives Roche rights to the therapy, called SRP-9001, in markets outside the United States. The collaboration will also include cost sharing for global development, and up to US$1.7 billion in regulatory and sales milestones, with royalties on sales estimated in the mid-teens percentage.

Sarepta CEO Douglas Ingram estimated the total value of the deal could amount to US$10 billion. "It's a number one gets to fairly easily with even modest penetration ex-U.S.," Ingram told analysts on a conference call Monday.

With Roche, Sarepta believes it can reach markets that it couldn't have on its own, such as China. "There are 60,000 DMD patients living in China," Ingram said. He acknowledged, however, that "Roche has a lot of work to do before it figures out how to get to China."

SRP-9001 is currently in a placebo-controlled trial. The company plans on initiating a trial using the commercial gene therapy supply in mid-2020.

AstraZeneca-MSD's Lynparza Approved in China for Ovarian Cancer

AstraZeneca and MSD Inc., Kenilworth, N.J., US (MSD: known as Merck & Co., Inc. inside the US and Canada) announced on December 4 that the companies have received marketing authorisation from China's National Medical Products Administration (NMPA) for Lynparza (olaparib) as a 1st-line maintenance treatment of adult patients with newly diagnosed advanced germline or somatic BRCA mutated (gBRCAm or sBRCAm) epithelial ovarian, fallopian tube or primary peritoneal cancer who are in complete or partial response to 1st-line platinum-based chemotherapy.

The approval in China is based on the results from the Phase III SOLO-1 trial, which were published in The New England Journal of Medicine. Results showed that Lynparza significantly reduced the risk of disease progression or death by 70% (equal to a hazard ratio of 0.30) vs. placebo in women with BRCAm advanced ovarian cancer following response to platinum-based chemotherapy. Of those women receiving Lynparza, 60% remained progression-free at three years vs. 27% of women receiving placebo.

For newly diagnosed advanced ovarian cancer patients, the primary aim of treatment is to delay progression of the disease for as long as possible, with the intent of achieving complete remission or cure. Of women diagnosed with ovarian cancer, 15% have a germline (inherited) mutation and 7% have a somatic (acquired) mutation in their BRCA1/2 genes.

Lynparza is the first PARP inhibitor approved in China for 1st-line maintenance in BRCAm advanced ovarian cancer. AstraZeneca and MSD are exploring additional trials in ovarian cancer and recently announced positive results from the Phase III PAOLA-1 trial, which tested Lynparza in combination with bevacizumab as a 1st-line maintenance treatment for women with newly-diagnosed advanced ovarian cancer, regardless of their biomarker status or surgical outcome.

AstraZeneca's Triple-Combination Therapy Approved in China

AstraZeneca's triple-combination therapy, budesonide/glycopyrronium/formoterol fumarate (BGF), has been approved in China as a maintenance treatment for Chronic Obstructive Pulmonary Disease (COPD).

This is the first approval by the National Medical Products Administration for a triplecombination therapy in a pressurised metered-dose inhaler (pMDI), which uses the innovative Aerosphere delivery technology.

The approval follows a priority review and is based on results from the Phase III KRONOS trial in which PT010 demonstrated a statistically significant improvement in trough forced expiratory volume in one second (FEV1), the primary endpoint for China, compared with dualcombination therapies Bevespi Aerosphere (glycopyrronium/formoterol fumarate) and PT009 (budesonide/formoterol fumarate).

The safety and tolerability of PT010 were consistent with the known profiles of the dual comparators. Data from the KRONOS trial were published in The Lancet Respiratory Medicine in October 2018.

Budesonide/glycopyrronium/formoterol fumarate was approved in Japan in June 2019 as Breztri Aerosphere, a triple-combination therapy to relieve symptoms of COPD. The medicine is also under regulatory review in the US and EU, under the name PT010.

AstraZeneca Granted Chinese Approval of Imfinziin for Unresectable Stage 3 NSCLC

AstraZeneca announced on December 12 that it has received marketing authorization from the NMPA for its Imfinzi (durvalumab) for the treatment of patients with unresectable, stage 3 non-small cell lung cancer (NSCLC), whose disease has not progressed following concurrent platinum-based chemotherapy and radiation therapy (CRT).

The company said the approval of Imfinzi was based on results from the primary analysis of progression-free survival, and supported by overall survival from the phase 3 'PACIFIC' trial. It said a post-hoc analysis of three-year overall survival results had since shown that consistent efficacy was maintained for treatment with Imfinzi after additional follow up.

Imfinzi reduced the risk of death by 32%, and prolonged the time patients lived without disease progression or death by more than 11 months. Among patients treated with Imfinzi, the most common adverse reactions were cough, fatigue, pneumonitis or radiation pneumonitis, upper respiratory tract infections, dyspnoea, and rash.

AstraZeneca said serious adverse reactions occurred in 29% of patients treated with Imfinzi, with 15% of patients discontinuing treatment due to adverse reactions.

Imfinzi is approved in the curative-intent setting of unresectable, stage 3 NSCLC after chemotherapy and radiation therapy in 54 countries and regions, including the United States, Japan and across the European Union, based on the phase 3 PACIFIC trial.

The PACIFIC regimen of chemotherapy and radiation therapy followed by Imfinzi is the global standard of care for the treatment of unresectable stage 3 NSCLC.

AstraZeneca China and Abcodia Form Strategic Alliance for Ovarian Cancer Detection

Cambridge UK business Abcodia, a leader in early cancer detection, has formed a strategic partnership with AstraZeneca China focusing on the early detection of ovarian cancer. With Abcodia's ROCA Test as the central technology the parties will collaborate to establish ovarian cancer early detection networks across China.

The intent of the collaboration fits strategically with AstraZeneca's mission to improve cancer outcomes in support of the Chinese government's 'Healthy China 2030' initiative, which includes a focus on early screening, early diagnosis and early treatment, reducing cancer morbidity and mortality and improving the quality of life of patients.

The announcement follows on from Abcodia's commitment to locate its China subsidiary in Wuxi, on the newly formed I·Campus, which has been created by Wuxi National High-Tech Industrial Development Zone and AstraZeneca China.

Abcodia has also now secured a business license for its Abcodia subsidiary and now plans to secure 'on the ground' expertise to support its expanded footprint.

Genzyme's Orphan Drug Fabrazyme (Agalsidase Beta) Approved in China

The NMPA has recently approved the import application for Genzyme Europe B.V.'s orphan drug injectable agalsidase beta (Fabrazyme) recently. The product was listed in China's second batch or urgently-needed new drugs for priority review backed with overseas clinical data. The application was made through Sanofi China Investment Co. Ltd. This is China's first approved drug in China for Fabry Disease patients aged eight and above.

Fabrazyme is a fully functional enzyme, with an amino acid sequence identical to the body's own native enzyme. Fabrazyme binds to a natural receptor on the cell surface, allowing it to be internalized. Once inside the cell, Fabrazyme is directly transported to the lysosome. In the lysosome, Fabrazyme hydrolyzes GL-3, resulting in clearance of accumulated GL-3 in major organs.

This medication is used to treat a certain inherited disorder (Fabry disease) that causes buildup of a certain fat substance (GL-3) in some parts of body.

Gilead Sciences Announces Chinese Approval of Chronic HCV Drug Vosevi

Gilead Sciences, Inc. (NASDAQ: GILD) announced on December 20 that the China National Medical Products Administration (NMPA) has approved Vosevi (sofosbuvir 400mg/velpatasvir 100mg/voxilaprevir 100mg), a once-daily single-tablet regimen for the treatment of chronic hepatitis C virus (HCV) infection in adults without cirrhosis or with compensated cirrhosis who have failed prior treatment with a direct-acting antiviral (DAA) therapy.

The approval of Vosevi in China is supported by two global Phase 3 studies, POLARIS-1 and POLARIS-4, which evaluated 12 weeks of treatment with Vosevi among adults with HCV genotype 1-6 with or without compensated cirrhosis who had failed prior DAA treatment with or without an NS5A inhibitor. Across POLARIS-1 and POLARIS-4, 97 percent of patients treated with Vosevi (n=431/445) achieved SVR12, the primary endpoint to determine cure rate, defined as HCV RNA undetectable 12 weeks after completing therapy.

The most common adverse reactions (≥10 percent) experienced by patients treated with Vosevi in POLARIS-1 and POLARIS-4 were headache, fatigue, diarrhea and nausea. The proportion of patients who permanently discontinued treatment with Vosevi due to adverse events was 0.2 percent.

In China, approximately 10 million people are infected with HCV and it is the fourth most commonly reported infectious disease. HCV genotypes 1, 2, 3 and 6 account for more than 96 percent of all cases.

Vosevi received marketing approval from the U.S. FDA and the European Medicines Agency (EMA) in 2017. In the United States, Vosevi has a Boxed Warning in its product label regarding the risk of hepatitis B virus (HBV) reactivation in HCV/HBV coinfected patients. See below for U.S. Important Safety Information and Indication.

Janssen Secured Chinese Approval of Psoriasis Drug Tenoyar (Gussetizumab)

The NMPA recently approved the import registration application of Janssen-Cilag International NV's guselkumab injection (brand name: Tremfya) for adults with moderate to severe plaque psoriasis suitable for systemic treatment patient.

The import registration application of Tremfya (Gussetiuzumab) injection was represented by XiAn Janssen and the product was included in the country's first batch of urgently-needed foreign new drugs. The NMPA accelerated the approval of the product in accordance with the priority review and approval process.

Guselkumab injection is the world's first monoclonal antibody against human interleukin-23 (IL-23) approved for psoriasis. It blocks IL-23 and cell surface IL-23 Receptor binding disrupts IL-23-mediated signaling, activation and cascade of cytokines, inhibits IL-23 biological activity, and exerts efficacy on plaque psoriasis.

Guselkumab was developed by Janssen Global Services, LLC. In November 2016, Janssen submitted a Biologics License Application (BLA) to the FDA seeking approval of guselkumab. In July 2017 Janssen gained US FDA approval to market guselkumab for treatment of plaque psoriasis. Usage for psoriatic arthritis has also been approved in Japan as of April 2018.

Guselkumab is FDA approved to treat moderate to severe plaque psoriasis in adults. Its use for the treatment of psoriatic arthritis is being explored. Guselkumab is provided as a subcutaneous injection of 100 mg given every eight weeks (except for the second dose, which is given four weeks after the first dose).

Janssen and Shandong Fontacea Enter Licensing Deal for Anti-IL17A mAb

Shandong Fontacea Pharmaceutical Co. Ltd. announced on December 17 that it has entered into an exclusive license, development and commercialization agreement with Janssen Biotech, Inc.,to develop and commercialize pharmaceutical products containing a human IgG1λ anti-human IL-17A neutralizing monoclonal antibody in mainland China, Hong Kong, Macao, Taiwan and South Korea.

"Our agreement with Janssen on the development of this novel monoclonal antibody reflects our strong interest in interleukin 17A as an important therapeutic target and our confidence that it has the potential to revolutionize the treatment of several diseases and significantly improve the quality of life for our patients," said Mr. Yanliang Chu, CEO and president of Fontacea. "With the commitment and resources provided by our local government and investors, I believe this will be the beginning of our discovery and development of novel medicines to help patients around the world."

Eisai Secures Additional Indication for Lenvima (Lenvatinib) in China

Eisai announced on December 2that LENVIMA (generic name: lenvatinib), the orally available kinase inhibitor discovered by Eisai, has been accepted by the National Medical Products Administration of China for an application for the additional indication of differentiated thyroid cancer. This application for additional indication marks the second in China following the indication for hepatocellular carcinoma, which was approved in September 2018.

This application was mainly based on the results of the SELECT Study (Study 303)1 conducted globally for patients with radioactive iodine-refractory differentiated thyroid cancer. In the SELECT study, LENVIMA demonstrated a statistically significant extension in progression-free survival (PFS), which is the primary endpoint, compared to placebo (median PFS in the LENVIMA group: 18.3 months, median PFS in the placebo group: 3.6 months; Hazard Ratio 0.21 [99% CI: 0.14-0.31]; p<0.001). Eisai could submit this application earlier by utilizing the results of SELECT study, while local Phase III clinical trial (Study 308) evaluating LENVIMA in patients with radioactive iodine-refractory differentiated thyroid cancer is ongoing in China.

In China, approximately 190,000 new cases of thyroid cancer are diagnosed each year, and approximately 8,600 are likely to die annually.2 Although treatment is possible for most types of thyroid cancer, there are few treatment options available once thyroid cancer has progressed, therefore it remains a disease with significant unmet medical needs.

Eisai positions oncology as a key therapeutic area, and is aiming to discover revolutionary new medicines with the potential to cure cancer. Eisai is committed to exploring the potential clinical benefits of LENVIMA, as it seeks to contribute further to addressing the diverse needs of, and increasing the benefits provided to, cancer patients, their families, and healthcare providers.

In March 2018, Eisai and Merck & Co., Inc. (known as MSD outside the United States and Canada), through an affiliate, entered into a strategic collaboration for the worldwide codevelopment and co-commercialization of LENVIMA.

Mitsubishi and HitGen Tanabe Enter into License Agreement

HitGen announced on December 18 that HitGen and Mitsubishi Tanabe Pharma Corporation (MTPC) have entered into a license agreement to develop a novel class of drugs. The licensed compounds were identified using HitGen's leading technology platform, which involved screening large DNA encoded libraries, containing more than 400 billion of small molecules with drug-like properties synthesized on chemically diverse scaffolds.

A number of novel small molecule leads for an undisclosed target nominated by MTPC were the subject of this license agreement. Under the terms of collaborative agreement, MTPC will pay HitGen assignment fee for license and HitGen will grant exclusive rights to MTPC for further development and commercialization.

Boehringer Ingelheim Approved to Manufacture Tislelizumab in China for BeiGene

The NMPA recently approved the new monoclonal antibody tislelizumab as the first biopharmaceutical manufactured by a multinational contract manufacture service provider in China. It is also the first innovative biopharmaceutical commissioned under the new MAH model in China.

Through its collaboration with BeiGene, Ltd. and the provision of manufacturing services for their monoclonal antibody tislelizumab, Boehringer Ingelheim Biopharmaceuticals China is the first company to successfully apply the adopted Marketing Authorization Holder (MAH) system within the revised Chinese Drug Administration Law (DAL).

Merck and PingAn Good Doctor Sign Agreement to Explore Integrated Health Solutions in China

Ping An Good Doctor, China's one-stop healthcare ecosystem platform recently signed a strategic collaboration with Merck, a German multinational pharmaceutical, chemical and life sciences company to jointly explore integrated solutions to advance intelligent healthcare in China.

According to the joint media release, the collaboration will leverage Ping An Good Doctor's extensive experience in AI medical technology, insurance provision and online and offline healthcare resources and Merck's medical expertise, high-quality medicines and innovative solutions and to develop an integrated one-stop

healthcare solution.

Ping An Good Doctor and Merck will also jointly explore how to break down the barrier between online and offline healthcare by means of innovative retail models connecting retail pharmacies, hospitals and primary healthcare in rural areas and by establishing an omni-channel retail system.

Interpace Bio Expands Strategic Partnership with Genecast in China

Interpace Bioscience's subsidiary, Interpace Pharma Solutions announced on December 5 that it is continuing to expand a previously announced partnership agreement to jointly develop, promote and offer translational studies and clinical trial solutions to biotech and pharmaceutical companies with Genecast (Beijing) Biotechnology Co. Ltd of China. Genecast is a leader in offering diagnostic products and services in the field of oncology and providing a wide range of diagnostic services to pharmaceutical and biotech companies in the PRC.

Interpace is sending members of its technical/scientific and business development teams to China this week to begin the tech transfer requirements to support over US$3 million of recently secured new business with global pharmaceutical companies.

Numab and 3SBio's Subsidiary Form Partnership to Develop Novel Multi-specific Antibodies in I/O

Numab **T**herapeutics and 3SBio Inc. (HKEX:1530) announced on December 12 that 3SBio›s subsidiary Sunshine Guojian Pharmaceutical (Shanghai) Co., Ltd. and Numab have formed a partnership focusing on the development and commercialization of a portfolio of novel multi-specific antibodies for the therapy of cancer based on Numab's technology platform.

Under the agreement, Sunshine Guojian has the right to select up to five antibody molecules emerging from up to three multispecific antibody programs based on Numab's R&D platform and has the exclusive licenses to develop and commercialize each of the selected antibody molecules in Greater China territories, including the Mainland China, Hong Kong, Macao and Taiwan, while Numab retains exclusive commercial rights in the rest of the world.

Concurrently, Sunshine Guojian has invested CHF15M (approximately US$ 15.2M) in Numab's series B financing. Dr. ZHU Zhenping, MD, PhD, President of Research and Development, Chief Scientific Officer of 3SBio, has joined Numab's board of directors. Further financial terms were not disclosed.

Multi-specific antibodies have the potential to unlock entirely novel modes-of-action aiming at superior benefit-to-risk profiles relative to conventional cancer immune therapies. Numab's proprietary MATCH™ technology platform represents one of the most versatile and flexible sources for multi-specific antibodies. MATCH™ molecules can incorporate up to six binding specificities in true plug-and-play fashion. The individual antibody Fv building blocks are designed for maximum stability and developability.

TRACON, 3D Medicines and Alphamab Enter Partnership for Subcutaneous PD-L1 Single-Domain Antibody in Soft Tissue Sarcoma

TRACON Pharmaceuticals, Inc.(NASDAQ:TCON), a clinical stage biopharmaceutical company focused on the development and commercialization of novel targeted therapeutics for cancer, announced today that it has signed a collaborative partnership agreement with 3D Medicines (Beijing) Co., Ltd., a China-based biopharmaceutical company focused on cancer precision medical treatment, and Jiangsu Alphamab Biopharmaceuticals Co., Ltd., a wholly-owned subsidiary of Alphamab Oncology (HKEX: 9966) and a China-based clinical stage biopharmaceutical company primarily engaging in research and development, manufacturing and commercialization of biologics of oncology, for the development of envafolimab, also known as KN035, a PD-L1 single-domain antibody administered by subcutaneous injection, for development in soft tissue sarcoma in North America.

TRACON and 3D Medicines and Jiangsu Alphamab entered into a product development collaboration whereby TRACON will be responsible for the clinical development and commercialization of envafolimab in soft tissue sarcoma in North America, with the majority of the development activities expected to occur in the U.S. TRACON will bear the costs of clinical trials and 3D Medicines and Jiangsu Alphamab will supply envafolimab at pre-negotiated prices.

TRACON will be responsible for commercializing envafolimab for sarcoma in North America, except in certain circumstances involving the approval of envafolimab for other indications in North America, in which case TRACON has the option to co-market envafolimab for sarcoma in North America.

JT and Salubris Pharma Enter Licensing Pact for HIF-PHI Inhibitor Enarodustat in Greater China

Japan Tobacco Inc. (JT) (TSE:2914) announced on December 25 that it has signed an exclusive license agreement with Shenzhen Salubris Pharmaceuticals Co., Ltd. (Salubris) for the development and commercialization in Mainland China, Hong Kong, Macau and Taiwan of JT's original compound JTZ-951 (generic name: enarodustat), a hypoxia inducible factor prolyl hydroxylase (HIF-PH) inhibitor.

Enarodustat is an orally-active HIF-PH inhibitor that promotes erythropoiesis by accelerating the endogenous production of erythropoietin (EPO) and controlling the expression of molecules responsible for iron metabolism. JT filed a New Drug Application of enarodustat for anemia associated with chronic kidney disease (CKD) in Japan on November 29, 2019.

Under the terms of the agreement, Salubris will be responsible for the development and commercialization of enarodustat in Mainland China, Hong Kong, Macau and Taiwan. JT will receive an upfront payment and be eligible to receive development and commercial milestone payments as well as royalties based on market sales.

The conclusion of the agreement does not have a significant impact on the consolidated business performance of JT in the fiscal year ending December 2019.

GI Innovation Out-licenses Immunotherapy Drug Candidate to Simcere Pharma

GI Innovation said that it has licensed out GI-101, a bispecific fusion protein for treating solid tumors, to Simcere, a Chinese pharmaceutical company. GI-101 is a bispecific immunotherapy agent made using the GI-SMART platform, a technology for developing bispecific fusion proteins owned by GI Innovation.

Through combining the cluster of differentiation 80 (CD80)

and interleukin 2 (IL-2) variant, the drug shows the synergy of anti-cancer treatment effect by simultaneously acting on two mechanisms of immune cell proliferation and activation. The company plans to apply for phase 1 and 2a clinical trials simultaneously in the U.S. and Korea next June.

Under the contract, Simcere will acquire exclusive rights for developing and commercializing G1-101 in China, Hong Kong, Macau and Taiwan, while giving an upfront payment of US$6 million to GI innovation.

GI innovation is also eligible to receive up to US$790 million in the course of developing, commercializing and winning regulatory approval as well as sales milestone payments. If approved, the company can also get tiered royalties of up to a double-digit figure, based on future net sales of the drug.

Initially, the two companies plan to develop combination therapies with immune checkpoint inhibitors in treating cancer that can maximize efficacy and reduce side effects. Thereafter, they are going to expand the indication of the treatment in inducing anti-cancer immune responses in tumors that are resistant to checkpoint inhibitors by converting the "cold tumors," which are cancers that haven't been recognized or provoked a strong response by the immune system, into immunologically-active "hot tumors."

Simcere will collaborate with GI so that it may accelerate the development of GI-101 so that cancer patients can benefit from this promising immunotherapeutic drug sooner, Wang added.

Service Provider News

China's Largest Plasmid and Virus Facility from GenScript Operational

The CDMO segment of the world's leading biotech company GenScript announced that GenScript's plasmid and virus facility was put into operation on December 18, 2019. It is a milestone on the path to industrialization of the gene and cell therapy industry, pioneered by GenScript. GenScript's plasmid and virus facility is going to be China's largest plasmid and virus facility that meets the needs in clinical stage.

The virus facility that put into use in Zhenjiang has been built in strict compliance with GMP and is completely used for the manufacturing of viral vectors in gene and cell therapy products. The facility has capability to manufacture viral vectors for clinical phase I/II. As the facility was designed and constructed by the team from an international professional pharmaceutical company, the facility features first-class design and capacity in the industry.

GenScript will also provide commercial manufacturing of plasmid and virus in the near future. The ground-breaking of the commercial manufacturing was held in April 2019 and will be officially put into production in the first quarter of 2021.

Frontage Acquires CRO BRI Biopharma for Expansion into North America

Frontage Holdings Corporation ("Frontage" or the "Group", 1521. HK), a contract research organization ("CRO") providing integrated, science-driven research, analytical and product development services with a presence in both the United States and China, announced it will acquire 100% of BRI Biopharmaceutical Research, Inc. ("BRI") through an indirectly wholly-owned subsidiary.

BRI is a CRO that was established by its current president and founder, Dr. David Kwok, more than 20 years ago in Vancouver, Canada. BRI is engaged in providing science-driven drug discovery and IND/NDA-enabling studies for pharmaceutical and biotechnology companies.

As a CRO, BRI offers a variety of services to its customer base, including but not limited to bioanalytical assays for measurement of drug candidates, metabolites and biomarkers, in-vitro drug metabolism/ADME, in vivo DMPK/ADME, formulation development, DS/DP stability and analytical CMC assays, and anticancer drug pharmacology assessment.

George Clinical and GDPH to Collaborate in Clinical Research

George Clinical, a global scientifically-backed clinical research organization (CRO), and Guangdong Provincial People's Hospital (GDPH) have executed a memorandum of understanding (MoU) laying out broad collaboration in the area of clinical research in China. The memorandum outlines several areas the two organizations will pursue including: training and education in clinical trial services, scientific networking and involvement in trial-related activities, provision of medical monitoring, in depth feasibility services and investigator networks.

The collaboration will address several key areas of clinical trial research operations. George Clinical will arrange for training of GDPH personnel including investigators, study coordinators, and those relatively new to global clinical trials to build expertise in Good Clinical Practices (GCP) in areas such as basic GCP training, workshops, and inspection preparation. Consultation in setting up a clinical trials unit at GDPH will seek to bring world-class competency using the collaboration methodologies established in previous trial work.

GDPH will become a hub for investigator networks in China as well as George Clinical trials in China and the Asia-Pacific region. The hospital will be included in the feasibility of new studies in selected therapeutic areas such as nephrology, oncology and cardiovascular diseases. The partnership will benefit from the recommendations of key opinion leaders from GDPH for trial related activities such as data safety monitoring boards (DSMB), steering committees, and more.

The memorandum also notes the referral of clinicians at GDPH and their networks for the provision of medical monitoring services in China under the standard operating procedures of George Clinical. This will also comprise the referral of GDPH staff for the provision of bio-statistical and data management services under the training and oversight of George Clinical.

Avantor Opens Center in Shanghai to Boost Biopharma Innovation in China

Avantor, a global provider of mission-critical products and services to customers in the life sciences and advanced technologies and applied materials industries, has opened an innovation and customer support center in Shanghai, China to support biopharma research and technology development in the region. Avantor now has nine innovation centers worldwide.

The new Avantor laboratory will help biopharmaceutical companies accelerate the development of life-changing treatments for patients in the region. It will specifically focus on enhancing industry capabilities in the development and manufacture of safe

and effective biological medicines such as monoclonal antibodies (mAbs) and cell & gene therapy. These treatments show great potential in China and are a fast-growing segment of the bio-processing industry worldwide.

Avantor's biopharma innovation and customer support center will support biopharma companies by providing access to products, services, solutions and expertise for all stages of treatment development, from the small-scale bench, to pilot plant and full commercial biomanufacturing.

The center will focus on helping biopharma companies optimize their mAbs purification processes and accelerate their capabilities in raw material testing and qualification for cell and gene therapy. Leveraging Avantor insight into biopharmaceutical industry work-flows, needs and challenges, the new facility will offer professional guidance on regulatory matters and training on Chromatography process optimization and materials qualification, as well as support proof-of-concept trials to help reduce process optimization delays. It will also provide access to a portfolio of industry-leading production solutions, single-use solutions and sera.

Regulatory News

NMPA and NHC Jointly Issues the *Provisions for Drug Clinical Trial Institutions*

The NMPA and the NHC jointed issued the *Provisions for Drug Clinical Trial Institutions* (2019#101) on November 29. The regulation becomes effective on December 1, 2019. The regulation has 28 articles in five chapters covering the generic principles, conditions & filing.

Drug clinical trial institutions refer to those meeting relevant conditions and conduct drug clinical trials in accordance with the requirements of GCP and other relevant technical guidelines. Operation & management, supervision and inspection, and appendices.

NMPA approved drug clinical trials (including filed bioequivalence studies) must be carried out in such institutions, which are subject to filing regulation. Those only involved with bio-sample analysis related to drug clinical trials do not need to file.

For full text of this regulation in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/371670.html

NMPA and NHC Issues Joint Notice for Vaccine IT Tracing Infrastructural Building

The General Department of NMPA and the General Office of NHC jointly issued a new document, *Notice for Vaccine IT Tracing Infrastructural Building*, on December 12. The document includes the following provisions:

- Introducing uniform tracing standards and guidelines for vaccine tracing, which are jointly developed by the NMPA and NHC.
- Setting up the (vaccine IT tracing) coordinated service platform, which is to be built by the NMPA, and the regulatory system for vaccine tracing.
- Building vaccine IT tracing systems with MAHs obligated primarily for building such systems in the principle of one product one code. MAHs of import vaccines may entrust their agents to hold such responsibilities.
- Allowing private entities to provide relevant technical services. IT providers, industry associations, etc. may supply specialized vaccine IT tracing services as third party providers.
- The Vaccine IT tracing infrastructural building shall be trialed first in Beijing, Tianjin, Inner Mongolia, Shanghai, Jiangsu, Hainan and Chongqing. Integration of trial sites with the coordinated service platform for vaccine IT tracing shall be completed by December 31, 2019. The trial sites shall begin supplying full process tracing information for vaccine production, distribution and inoculation to the coordinated service platform before January 31, 2020. Non-trial site areas shall also accelerate the infrastructural building for vaccine IT tracing. By March 31, 2020, vaccine IT tracing system shall be in place nationwide.

For full text of this document in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2196/372071.html

NMPA Regulatory News Roundup

NMPA Issues the Technical Guidelines for Clinical Comparability Studies of Preventative Vaccines

The NMPA issued the *Technical Guidelines for Clinical Comparability Studies of Preventative Vaccines (2019#94)* on December 24 to guide R&D and evaluation of non-innovative vaccines and ensure similar safety and efficacy of vaccines in the same category.

It is provided in the document that non-novel vaccines refer to those with same category vaccines already on the Chinese market and also with comparable quality, safety and efficacy to such vaccines on the market. This document is applicable to those non-novel vaccines for efficacy evaluation using immunogenic surrogate endpoints.

Besides, this document can be referenced for vaccines involving formula and production process changes which need to have their change feasibility validated through clinical comparability studies.

For preclinical studies, a comparison study of pharmacy and nonclinical vaccine candidates (or test vaccines) with similar vaccines (or control vaccines) on the market should be conducted first. Comparability of vaccines.

For clinical research, the clinical comparability of vaccines usually uses a non-inferiority trial design, and the clinical batch (or batch) consistency evaluation of vaccines uses equivalence testing. Among them, the randomized controlled clinical trial should generally choose the original research product as the control vaccine. A sufficient and reasonable basis should be provided when selecting non-original products.

For clinical endpoints, in addition to antibody positive conversion rate, geometric mean titer / concentration (GMT / GMC), etc. as the main evaluation indicators, immunogenicity can be used as a surrogate endpoint. In addition, in the absence of a reliable immunogenic surrogate endpoint When a protective efficacy trial is not available, the reason should be clarified and other evidence supporting registration should be provided.

The main content of this guideline is divided into six parts.

Part I, "Foreword", explains the drafting background of this Guiding Principle and clarifies the scope of application.

Part II, "Considerations Before Clinical Trials," briefly introduces considerations in clinical vaccine research and development, pharmacy, and nonclinical research and development before conducting clinical comparability studies.

Part III, "General Considerations for the Design of Clinical Trials," details the selection of control vaccines in clinical comparability studies, specific requirements for studying vaccine management, and immunogenic surrogate indicators, and reiterates considerations for safety evaluation. The requirements for inter-clinical consistency studies and testing of clinical specimens for biological specimens are also described in detail.

Part IV, "Statistical Considerations in Clinical Trial Design," details the general principles to be followed in statistical processing in vaccine clinical comparability studies, and highlights specific considerations for non-inferior, equivalent study design, including threshold values. Determination, sample size estimation, and missing data processing.

Part V, "Data Management and Quality Assurance", specifies technical requirements for clinical trial data management and quality assurance. The database submission criteria are also explained.

Part VI, "Evaluation of Clinical Trial Results", combines the characteristics of clinical comparability research from two aspects of safety and immunogenicity, clarifies the technical evaluation standards, and emphasizes the requirements for the evaluability of clinical results.

For full text of this technical guideline in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/372828.html

NMPA Issues the Guidelines for Aluminum Adjuvant in Preventative Vaccines

The NMPA issued the *Technical Guidelines for Aluminum Adjuvant in Preventative Vaccines*, which was formulated and finalized referencing relevant international guidelines and following expert panel discussions and public comment seeking.

For full text of this document and its drafting notes in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/372062.html

NMPA Issues the Principles and Procedures for Drug Sampling

In an effort to streamline drug quality sample inspection, the General Department of NMPA issued, the *Principles and Procedures for Drug Sampling*, following public comment seeking in November.

The document was drafted by the National Institutes for Food and Drug Control (NIFDC) on behalf of the NMPA.

For full text of the document and related forms in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2196/373004.html

NMPA Issues Guiding Principles for Classification Standards for ADRs of Clinical Trials for Preventative Vaccines

The NMPA Issued the *Guiding Principles for Classification Standards for ADRs of Clinical Trials for Preventative Vaccines* (2019#102) on December 31, replacing the same document issued by the CFDA previously in 2005.

The goal of this document is streamlining the safety evaluation of preventative vaccine trials and harmonizing with international norms.

For full text of this document and its drafting notes in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/373037.html

NMPA Announces Initiation of Drug Business Application System

The NMPA announced on December 31 the initiation of its drug business application system (2019#112).

The system was developed to handle regulatory certification relating to drug import and export, including the drug export sales certification, API export certification for the EU, import and export licenses for narcotics and mental health drugs, as well as permits for initial import of TCM crude drugs.

For full text of the announcement and its operating manual in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/373035.html

Consultation tel: +86 10-88331945, 88331909

NMPA Initiates Drug Import & Export Permit Management System

In accordance with earlier State Council policies, the NMPA has jointly built a drug import & export permit management system with the Chinese Customs on the international trade "single window" public platform. The General Office of NMPA announced recently to initiate this system (NMPA Announcement 2019#631).

1. The system will be officially initiated on December 25, 2019. The system is oriented for application, acceptance, review & approval and online verification for import & export of anabolic agents and peptide hormones. The applicant shall submit electronic data for the import and export of anabolic agents and peptide hormones through this system. At the same time, it submits relevant documents such as relevant certification documents of the competent government department of the importing country for verification in accordance with the Anti-Doping Regulations. The applicant unit can also handle import and export business such as filing of imported drugs on the "single window" website.
2. Provincial drug regulatory authorities should determine the approval level and corresponding staff based on the actual approval of import and export of anabolic agents and peptide hormones, and communicate with the software development unit to set it in the system to ensure that the system is activated on time. If a USB key need to be applied or added, one should proceed as soon as possible in accordance with the "*Notice on Preparing for the Application of the New Version of the Import and Export Permit Management System*" (2019#537).
3. The drug import and export permit management system already has the function to share the information of permits for anabolic agents and peptide hormones with the customs department, and there is no need to upload additional information to the customs system.

4. The operation manuals (Appendix 1 and Appendix 2) of the application end and the approval end can be downloaded from this system. If a problem is found during the use of the system, please contact the "single window" customer service hotline (010-95198) or communicate through the WeChat work group (see Attachment 3 for the WeChat work group QR code).
5. Provincial drug regulatory departments shall undertake relevant acceptance and approval work in strict accordance with relevant regulations on the import and export of anabolic agents and peptide hormones.

For full text of this official announcement and its appendices, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2196/372942.html

NMPA/CDE Commits to CDISC Standards

The Center for Drug Evaluation (CDE) of the China National Medical Products Administration (NMPA) has released the requirements of clinical trial data submission in the electronic common technical document (eCTD) for public review in October. CDISC standards are now the preferred standards for electronic data submission in China. The new eCTD stipulates the use of SDTM, CDISCs standard for formatting and organizing study data, and ADaM, CDISCs standard for data analysis, for pharmaceutical sponsors submitting datasets in clinical trial databases and related materials. Going forward, CDISC standards are the only global data standard the CDE has recommended.

The NMPA joins the US FDA and Japan PMDA in recognizing the centrality of global CDISC standards to be used for submission of clinical research study data. Requiring standardized data enables regulators to modernize the review process with a more consistent use of analysis tools to better view drug data and highlight areas of concern. CDISC standards streamline the review process and expedite approval times for more efficient and effective clinical research.

CDISC commends the CDE and all involved in developing the eCTD, which is well-aligned with how CDISC standards are utilized globally, said David R. Bobbitt, MSc, MBA, CDISC President and CEO. This development represents a strengthening of the relationship between NMPA and CDISC, while supporting continued positive development of the Chinese pharmaceutical industry.

CDISC standards are now more than ever the global standard. Since 2012, the community of CDISC users in China has grown significantly as members of the Chinese CDISC Coordinating Council (C3C) promote awareness and support the implementation of CDISC standards.

NMPA Lists Lemazolam for Regulation as Class 2 Psychotropic

According to the relevant provisions of the "*Regulations on the Administration of Narcotic Drugs and Psychotropic Substances*", the National Medical Product Administration, the Ministry of Public Security and the National Health Commission announced on December 27 to regulate remazolam (including its possible salts, unilateral preparations and isomers) as class 2 psychotropic (No. 108 of 2019).

The decision comes into effect on January 1, 2020.

For more information in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/372930.html

NMPA Announces Withdrawal of Additional 68 Certificate Requirements to Reduce Bureaucracy

The NMPA released a notice (2019#102) on November 29 to announce the withdrawals of 68 certificate requirements (third batch) for various types of applications stipulated in its departmental regulations and normative documents, many are related to drug registration.

Withdrawn requirements numbered 1 through 45 are effective immediately on the date of notice, while those numbered 46 through 68 shall become effective on December 1, 2019.

For more specific information on these withdrawn requirements in Chinese, please visit the following NMPA weblink: http://www.nmpa.gov.cn/WS04/CL2138/371668.html

ChP Commission Solicits Comments on the draft of Naming Principles for Generic Names of Biological Products

In an attempt to improve the naming principle of the generic names of biological products, streamline generic names of recombinant therapeutic biologics, ensure IT tracing of full-life cycle of marketed drugs and avoid confusion in drug names, the 11th Chinese Pharmacopoeia Commission (ChP Commission) has revised thewith No.1 Addendum of the Chinese Pharmacopoeia 2015 – the Naming Principles of the Generic Names of Biological Products.

The ChP Commission publicized the relevant drafts on December 9 and the publication period is one month. The ChP Commission is now soliciting comments from relevant stakeholder entities.

Feedbacks need to be officially stamped by the commenting entities and sent via regular mail and email to the ChP Office before the end of publication period.

Contact: ZHAO Yuhao (赵宇豪)

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Email: zhaoyuhao@chp.org.cn

The Office of Chinese Pharmacopoeia Commission

Bldg. 11, Fahuananli, Dongcheng Qu, Beijing 100061, China

Please visit the following ChP Commission weblink for full text of the ChP notice as well as its two draft documents in Chinese: 1) the No.1 Addendum of the Chinese Pharmacopoeia 2015 – the *Naming Principles of the Generic Names of Biological Products*; and 2) the Revision Plan for the Generic Names of Recombinant Therapeutic Biologics to be Collected in the ChP 2020.

http://www.chp.org.cn/view/ff8080816e444b7f016ee89dfb294ed3?a=BZSWZP

CDE Solicits Comments on Guidelines for Clinical Protocol of Biosimilar of Liraglutid Injection

The CDE released the draft *Guidelines for Clinical Protocol of Biosimilar of Liraglutid Injection* on December 25 and is now seeking public comments on it within one month from the date of publication.

Feedbacks shall be submitted to the following contact via email:

WANG Chaoyun, wangcy@cde.org.cn

For full text of this draft document, its drafting notes and the feedback form in Chinese, please visit the following CDE weblink: http://www.cde.org.cn/news.do?method=viewInfoCommon&id=314993

Liraglutid Injection (brand name Victoza) is a glucagon−like peptide−1 (GLP−1) receptor agonist developed by Novo Nordisk. Victoza (liraglutide) injection 1.2 mg or 1.8 mg is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus, and to reduce the risk of major adverse cardiovascular (CV) events in adults with type 2 diabetes mellitus and established CV disease.

Multiple domestic Chinese drug companies are conducting research to develop the biosimilar of Victoze (Liraglutid), for which there is no approvals globally at the moment.

NMPA: China Has Over 1 Mln Registered Pharmacists

The number of licensed pharmacists totaled over 1.03 million in China by the end of November, data from the National Medical Products Administration (NMPA) showed. Over 460,000 licensed pharmacists were registered in retail drug stores, said the NMPA.

Since the establishment of a licensed pharmacist system in 1994, China has initially built relevant management institutions, organizations and professional teams, said Yang Wei, an NMPA official.

The number of licensed pharmacists per 10,000 citizens should exceed four by the end of 2020 while the operation of each retail drug store should be in the charge of licensed pharmacists, according to the country's 13th Five-Year Plan.

Legal/IPR News

China Jails Three Researchers Involved in Gene-edited Babies

A Chinese scientist who set off an ethical debate with claims that he had made the world's first genetically edited babies was sentenced to three years in prison because of his research, state media said.

HE Jiankui, who was convicted of practicing medicine without a license, was also fined US$430,000 by a court in the southern city of Shenzhen, China's official Xinhua News Agency reported. Two other researchers involved in the project received lesser sentences and fines. Zhang was sentenced to two years in prison and fined CNY 1 million, Xinhua said. Qin received an 18-month prison sentence, but with a two-year reprieve, and a CNY 500,000 fine.

The verdict said the three defendants had not obtained qualification as doctors, pursued fame and profits, deliberately violated Chinese regulations on scientific research, and crossed an ethical line in both scientific research and medicine, according to Xinhua. It also said they had fabricated ethical review documents.

The court also confirmed a third birth, saying the researchers were involved in the births of three gene- edited babies to two women. It said all three scientists pleaded guilty during the trial, which Xinhua reported was closed to the public because of privacy concerns.

He, the lead researcher, shocked the scientific world when he announced in November 2018 that he had altered the embryos of twin girls who had been born the same month. He described his work in exclusive interviews with The Associated Press.

The announcement sparked a global debate over the ethics of gene editing. He said he had used a tool called CRISPR to try to disable a gene that allows the AIDS virus to enter a cell, in a bid to give the girls the ability to resist the infection. The identity of the children has not been released, and it isn't clear if the experiment succeeded.

The CRISPR tool has been tested elsewhere in adults to treat diseases, but many in the scientific community denounced He's work as medically unnecessary and unethical, because any genetic changes could be passed down to future generations. The U.S. forbids editing embryos except for lab research.

Chinese Medical Researcher Investigated for Smuggling Vials of Biological Samples

A Chinese researcher was arrested in Boston on suspicion of stealing vials of biological samples, according to court documents unsealed on Dec. 19.

Customs officials stopped Zheng Xiaosong for questioning at Boston Logan International Airport on Dec. 9, upon flagging him as "a high risk for possibly exporting undeclared biological material," a FBI agent said in an affidavit filed with the Massachusetts district court on Dec. 12.

Zheng, a 29-year-old researcher at the Sun Yat-Sen Memorial Hospital in China's southern province of Guangdong, came to Harvard University's Beth Israel Deaconess Medical Center as a visiting graduate student in pathology. He was heading to Beijing at the time of the arrest.

An examination of Zheng's checked bags found 21 vials of unknown brown liquid wrapped in a plastic bag and hidden in a sock, the document said, adding that both typed and handwritten descriptions and notes accompanied the vials.

"These vials contained what appeared to be biological materials that were not properly declared or packaged for transportation in commercial aircraft," the agent said. According to the document, the FBI has seized the unknown samples for further examination. Zheng initially denied that he was traveling with biological items or research materials despite repeated questioning from Customs and Border Protection officers, the document said.

The agent said Zheng is currently under investigation for "knowingly and willfully mak[ing] a series of false, fictitious, and fraudulent statements" and attempting to steal undeclared biological materials to China.

According to the agent, when asked why he did not declare the vials, Zheng replied that "they were not important and had nothing to do with his research." He later stated that he obtained the vials through his friend Zhang Tao, another researcher at the hospital, but that he had "no plans to do anything with the vials." Zheng failed to offer an explanation for attempting to leave the United States with the items and why he concealed them in a sock, the agent said.

After further questioning, Zheng confessed that he had stolen eight vials from the research lab and personally replicated 11 others based on Zhang's research, according to the affidavit. He

told the investigators that no one else was aware of the stolen data. Zheng also said that he replicated Zhang's research over a period of two to three months while working at the lab, without the knowledge of the medical center.

The agent added that Zheng, upon returning to China, had planned to immediately take the vials to his lab at Sun Yat-Sen Memorial Hospital for analysis and for his own research, which he may publish in his name "if the results of his research were successful in any way."

The inspection officers also found a laptop in Zheng's baggage belonging to another Chinese national, whose name was redacted in the document. Zheng said he was helping to carry the laptop for a friend who "could not fit it in his luggage," a claim that the agent refuted.

"A basic search of the device resulted in the discovery of what appeared to be research material," the agent said.

Private Investigator Couple Sue GSK for Misleading Work in China

When investigators Peter Humphrey and Yu Yingzeng were hired by pharmaceutical company GlaxoSmithKline in 2013, their job was to look into a former employee in China who, they were told, was making false allegations about the firm.

The person, it turns out, was a whistleblower who had revealed GSK's practice of bribes in China. And when Chinese authorities cracked down on GSK, they also swept up the husband-and-wife team of investigators, imprisoning them for two years for "illegally acquiring citizens' information."

Humphrey and Yu, back in Britain with health problems and in financial ruin, are now suing GSK for allegedly misleading them on what the job was about and exposing them to legal risks in China they could not have foreseen. GSK says there's no merit to the claim.

The case sheds a light on how a small business became collateral damage in the fight between one of the world's biggest pharma companies and Chinese state power.

"Peter was directly misled about what he was being hired to do," says John Zach, the New York-based lawyer for Humphrey, 60, and Yu, 63. They are seeking unspecified damages from GSK, with Zach filing the latest response in the litigation this month.

The Chinese government's investigation into GSK ended in 2014 with the company paying US$490 million, China's biggest ever corporate penalty, for bribing doctors and hospitals to promote its products.

The authorities also went after Humphrey and Yu, who were not covered by GSK's legal defense and ultimately imprisoned for allegedly spying on a Chinese citizen.

The couple was paraded on Chinese television purportedly confessing their crimes. Jailed separately, they endured conditions that allegedly left them with serious health problems, including, in Humphrey's case, prostate cancer he says went untreated during his incarceration.

The couple were released in mid-2015 and deported to Britain. Humphrey was banned from China for 10 years; U.S. citizen Yu is unlikely to be granted a visa to return. In China, their company, which had 15 employees, went bankrupt, their property was seized, and bank accounts cancelled.

The lawsuit against GSK was lodged in November in Pennsylvania, where GSK's U.S. operations are based.

GSK has asked the Pennsylvania court to dismiss Humphrey and Yu's writ. In documents seen by AP, the company says there is no U.S. jurisdiction, as the couple's company was hired in Shanghai by GSK's China operation. They should take their claim back to China for arbitration, it says. "We do not believe this case has any merit," GSK said in a statement.

Moffitt Cancer Center CEO, Others Resign Over China Ties

The CEO and President of H. Lee Moffitt Cancer Center & Research Institute resigned on December 18 amid a controversy that linked him and others to possible exploitation of American-funded research by China. Dr. Alan List stepped down, along with Thomas Sellers, a Vice President and Director at Moffitt, and four of the cancer center's researchers. There is no indication Moffitt research was compromised or patient care affected.

Timothy Adams, Moffitt's board chairman, will assume responsibilities for operating the center while a national CEO search is underway. An internal review by Moffitt focused on its team members' participation in China's "Thousand Talents" Program, which recruits global researchers and academics. Moffitt has shared the preliminary findings of its ongoing review with the federal government.

"At Moffitt, we pride ourselves not only on our life-saving research and world-class patient care, but also on transparency and integrity among all our employees. This was an unfortunate but necessary decision," said Adams.

"This great institution did its job: We listened to the warnings from NIH (National Institutes of Health), conducted a proactive review, and took strong action when it was needed," said founder and former Speaker of the House H. Lee Moffitt.

Moffitt also is thoroughly reviewing its 12-year partnership with China's Tianjin Medical University Cancer Institute and Hospital for the training of oncology practitioners, including through international exchanges.

Product and R&D News

Preview of 16 Heavy-weight New Drug Expected to be Approved in China Next Year

The NMPA has so far approved 32 new drugs (excluding approvals for new indications of existing drugs) for marketing in China this year. The following table provides a preview of 16 heavy-weight new drugs anticipated to be approved in 2020.

16 Heavy-weight New Drugs Expected to be Approved in China 2020

No.	Name	Brand Name	Anticipated Approval Time
1	Trastuzumab Emtansine	Kadcyla	Q1/2020
2	Zanubrutinib	Brukinsa	Q1/2020
3	Trametinib/Dabrafenib	Mekinist/Tafinlar	Q1/2020
4	Agalsidase Beta	Fabrazyme	Q1/2020
5	Ensartinib	Bei Mei Na	Q1/2020
6	Lanadelumab	Takhzyro	Q1/2020
7	Ometinib	From Hansoh	Q2/2020
8	Brentuximab Vedotin	Adcetris	Q2/2020
9	Vedolizumab	Entyvio	Q2/2020
10	Guselkumab	Tremfya	Q2/2020
11	Burosumab	Crysvita	Q2/2020
12	Radium Ra 223 Dichloride	Xofigo	Q3/2020
13	Fluzoparib	From Hengrui	Q3/2020
14	Blinatumomab	Blincyto	Q4/2020
15	Telitacicept	Tai Ai	Q4/2020
16	Surufatinib	From Chi-Med	Q4/2020

Source: Pharmcube

Eli Lilly's Verzenio and Amgen's Blincyto To Be Granted Priority Review Status in China

According to data disclosed at the website of the Center for Drug Evaluation under the NMPA (CDE), two import new anticancers, Eli Lilly's Verzenio (Abemaciclib) and Amgen's Blincyto (blinatumomab) have recently been publicized for priority review status.

Abemaciclib (trade names Verzenio and Verzenios) is a drug for the treatment of advanced or metastatic breast cancers. It was developed by Eli Lilly and it acts as a CDK inhibitor selective for CDK4 and CDK6. It was designated as a breakthrough therapy for breast cancer by the U.S. Food and Drug Administration (FDA) in October 2015.

On September 28, 2017, it was approved for use in the United States by the FDA for the treatment of certain breast cancers. Verzenio is given in combination with an aromatase inhibitor as initial endocrine-based therapy for the treatment of post-menopausal women, in combination with fulvestrant in women whose disease has progressed after hormonal therapy, or alone in women whose disease has progressed after hormone therapy and prior chemotherapy.

Bio-Thera's IND for Biosimilar of Stelara (Ustekinumab) Approved in China

Bio-Thera Solutions, Ltd., a clinical-stage pharmaceutical company, announced on December 4 that the China National Medical Products Administration (NMPA) has approved its Investigational New Drug (IND) application to initiate a Phase I clinical study to compare the pharmacokinetics and safety of BAT2206, a proposed biosimilar of Stelara® (ustekinumab), to US-sourced and EU-sourced reference product in normal healthy volunteers. The clinical study will be a randomized, double-blind, parallel group, single-dose study that is expected to enroll approximately 270 healthy volunteers.

Bio-Thera Solutions is developing several additional biosimilar products, including QLETLI®, a biosimilar to Humira®, which was recently approved by the NMPA in China and BAT1706, a biosimilar to Avastin®, which is currently being evaluated in a global Phase III clinical trial. Bio-Thera Solutions is also pursuing biosimilar versions of Actemra®, Cosentyx® and Simponi®.

Amgen's IND for Osteoporosis Drug Romosozumab Approved in China

The Center for Drug Evaluation under the NMPA (CDE) has approved the IND application of Amgen for its clinical research of osteoporosis drug Eventify (romosozumab) in China, according to the CDE website records.

Romosozumab, sold under the brand name Evenity, is a medication used to treat osteoporosis. It has been found to decrease the risk of fractures of the spine. Common side effect include headache, joint pain, and pain at the site of injection. It may increase the risk of heart attacks, strokes, and deaths from cardiovascular disease.

It is a humanized monoclonal antibody that targets sclerostin. Research shows the drug increases bone formation and decreases bone resorption in postmenopausal women with low bone density. Romosozumab was approved for medical use in the United States in 2019.

XiAn Janssen's Application for 2nd Indication of Erleada Accepted in China

The Center for Drug Evaluation under the NMPA (CDE) has accepted the application from XiAn Janssen for the second indication of its prostate cancer drug Erleada (apalutamide). The acceptance number is JXHS1900156.

On September 17, 2019, the Food and Drug Administration approved apalutamide (ERLEADA, Janssen Biotech, Inc) for patients with metastatic castration-sensitive prostate cancer (mCSPC). Apalutamide was initially approved in 2018 for patients with non-metastatic castration-resistant prostate cancer.

Apalutamide is an antiandrogen, and acts as an antagonist of the androgen receptor, the biological target of androgens like testosterone and dihydrotestosterone. In doing so, it prevents the effects of these hormones in the prostate gland and elsewhere in the body.

The Xian Janssen Pharmaceutical Ltd announced in late November the launch of ERLEADA (apalutamide) in China after being approved by the NMPA in September, recognizing the urgent unmet need for patients with nmCRPC who currently have few treatment options.

ERLEADA is an androgen receptor inhibitor that works by preventing androgen from binding to the androgen receptor. It has been shown to delay the time to distant metastasis. Treatment with ERLEADA has also shown to result in the control of Prostate-Specific Antigen (PSA) levels, which is an important indicator during the early treatment and prognosis of patients with prostate cancer.

ERLEADA is now available in major Chinese cities including Beijing, Shanghai, Guangzhou and Tianjin. Xian Janssen is supporting the China Primary Healthcare Foundation to launch a Patient Access Program that helps low-income patients in China access treatment with ERLEADA.

Chi-Med Gets Priority Review for Surufatinib in China

Hutchison China MediTech (Chi-Med) announced on December 20 that the Center for Drug Evaluation (CDE) of China's National Medical Products Administration (NMPA) has granted 'Priority Review' status to its new drug application for 'surufatinib', for the treatment of patients with advanced non-pancreatic neuro-endocrine tumours.

The AIM-traded firm noted that in November, the new drug application for surufatinib for the treatment of non-pancreatic neuro-endocrine tumours was accepted for review by the NMPA. At the same time, the United States Food and Drug Administration granted 'orphan drug designation' to surufatinib for the treatment of pancreatic neuroendocrine tumours.

Everest Medicines Announces Chinese Clinical Trial Approval of Nefecons

Everest Medicines, a biopharmaceutical company focused on developing and commercializing transformative pharmaceutical products that address critical unmet medical needs for patients in Greater China and other parts of Asia, announced on December 18 it has received Clinical Trial Application (CTA) approval from the China National Medical Products Administration to conduct clinical trials for Nefecon in China. Nefecon is being developed in collaboration with Calliditas Therapeutics for the treatment of patients with IgA nephropathy (IgAN).

Under the licensing agreement between Calliditas and Everest Medicines, which was announced in June 2019, Everest Medicines received exclusive rights to develop and commercialize Nefecon in Mainland China, Hong Kong, Macau, Taiwan and Singapore. This CTA approval will allow Everest Medicine to include China clinical sites in Callidita's ongoing global Phase 3 NeflgArd trial.

CStone's anti-PD-L1 antibody Demonstrates Promising Antitumor Activity

CStone Pharmaceuticals (HKEX: 2616) updated results from the CS1001-201 trial in a poster presentation at the 2019 American Society of Hematology (ASH) Annual Meeting.

CS1001-201 trial is a single-arm, multicenter Phase II clinical study designed to evaluate CS1001 monotherapy in relapsed or refractory extranodal natural killer (NK)/T-cell lymphoma (rr-ENKTL).

ENKTL is a subtype of mature T cell and NK cell lymphoma. It has a higher incidence in Asia than in Europe or North America. ENKTL is characterized by its rapid progression and poor prognosis. Currently, patients with rr-ENKTL lack effective treatment after failing an L-asparaginase-based combination chemotherapy regimen and targeted monotherapy only produces a complete response (CR) rate of below 10%.

Sanofi Files NDA for the World's Atopic Dermatitis Biologic Dupilumab in China

Sanofi China's new drug application for DupixentDupiluma (acceptance # JXSS1900067) has been accepted by the CDE on December 25, according to Chinese press reports.

Dupilumab, sold under the trade name Dupixent, is a monoclonal antibody used for allergic diseases such as eczema (atopic dermatitis) and nasal polyps which result in chronic sinusitis.

Dupilumab binds to the alpha subunit of the interleukin-4 receptor (IL-4Rα), making it a receptor antagonist. Through blockade of IL-4Rα, dupilumab modulates signaling of both the interleukin 4 and interleukin 13 pathways. In clinical trials, patients saw decreased levels of Th2 bio-markers.

It was developed by Regeneron Pharmaceuticals and Sanofi Genzyme. It received approval from the United States FDA for moderate-to-severe atopic dermatitis in 2017. As of 2019 it costs about US$46,000 per year.

Dupilumab appears to be useful for moderate-to-severe atopic dermatitis for which it is approved in the United States. It is also being evaluated for treatment of persistent asthma in adults and adolescents. In October 2019, the European Commission (EC) approved Dupixent in chronic rhinosinusitis with nasal polyposis (CRSwNP).

In China, Dupilumab's Phase 3 clinical trial for adult patients with moderate to severe atopic dermatitis was filed (clinical trial registration number: CTR20181386) with plan to enroll 160 patients. In addition, an international multi-center phase 3 clinical trial for the treatment of COPD and asthma is also underway with planned domestic enrollment at 82 and 386, respectively.

At present, Dupixent has obtained regulatory approval and listing in about 40 countries and regions including the United States, Japan, and the European Union, and about 65,000 patients have benefited from it.

CStone Pharma to Submit NDA for Anti-cancer Pralsetinib Next Year

CStone Pharmaceuticals (HKEX: 2616) announced recently that the on-going, global Phase III VOYAGER clinical trial of avapritinib, an investigational drug discovered by CStone's partner, Blueprint Medicines, has completed target patient enrollment in China. In addition, the VOYAGER trial's enrollment target has been reached globally. The study was designed to evaluate the safety and efficacy of avapritinib as a third- or fourth-line treatment for patients with advanced gastrointestinal stromal tumors (GIST), in comparison with that of regorafenib, the current standard-of-care treatment for third-line GIST. On July 10, 2019, CStone announced the dosing of the first patient in China for the VOYAGER trial.

Blueprint Medicines expects to report top-line VOYAGER trial data in the second quarter of 2020. In August 2019, the U.S. Food & Drug Administration (FDA) accepted Blueprint Medicines' New Drug Application (NDA) for avapritinib for the treatment of adult patients with PDGFRA Exon 18 mutant GIST, regardless of prior therapy, and fourth-line GIST. Subject to an initial approval of avapritinib, Blueprint Medicines plans to submit a supplemental NDA to the U.S. FDA for avapritinib for third-line GIST in the second half of 2020. CStone plans to submit an NDA for the treatment of third-line GIST to the China National Medical Products Administration (NMPA) in the second half of 2020.

GIST is the most common mesenchymal tumor of the GI tract, and it is most prevalent in patients aged 50 to 80. Around 90% of all GIST cases are associated with dysregulated cell growth due to mutations in KIT and PDGFRA tyrosine kinases. Existing data on regorafenib, the current standard third-line GIST treatment, shows a median progression-free survival of 4.8 months and an

objective response rate (ORR) of only about 5%. There is currently no approved treatment for GIST patients who have failed third-line treatment. Thus, there are high unmet clinical needs in patients with third-line and later GIST.

Avapritinib is an investigational, orally available, potent and highly selective inhibitor of KIT and PDGFRA. Clinical data on avapritinib have demonstrated encouraging anti-tumor activity and benign tolerability in patients with PDGFRA Exon 18 mutants (primarily includes patients with the D842V mutation) and fourth-line GIST, two patient populations currently lacking effective therapies.

BeiGene Announces Clinical Data on Anti-PD-1 Tislelizumab in Combo with Sitravatinib

BeiGene, Ltd. (NASDAQ: BGNE; HKEX: 06160) and Mirati Therapeutics (NASDAQ:MRTX) announced on December 13 preliminary data from an ongoing Phase 1b trial of investigational anti-PD-1 antibody tislelizumab in combination with investigational tyrosine kinase inhibitor sitravatinib in patients with platinum-resistant ovarian cancer, which demonstrated antitumor activity and was generally well tolerated.

Results from the Phase 1b clinical trial were presented at the 2019 European Society for Medical Oncology Immuno-Oncology (ESMO I-O) Congress on December 13, 2019 in Geneva, Switzerland.

BeiGene Announces Acceptance of a China sNDA for REVLIMID in Relapsed or Refractory Indolent Lymphoma

BeiGene, Ltd. (NASDAQ: BGNE; HKEX: 06160), a commercial-stage biopharmaceutical company focused on developing and commercializing innovative molecularly-targeted and immuno-oncology drugs for the treatment of cancer, announced on December 22 that the NMPA has accepted a supplemental new drug application (sNDA) for REVLIMID® (lenalidomide), in combination with rituximab, for the treatment of patients with relapsed or refractory indolent lymphoma (follicular lymphoma or marginal zone lymphoma).

REVLIMID was first approved in China in 2013 for the treatment of multiple myeloma in combination with dexamethasone, in adult patients who have received at least one prior therapy, and the label for the combination was expanded in 2018 to include adult patients with newly-diagnosed multiple myeloma (NDMM) who are not eligible for transplant. It is currently marketed in China by BeiGene under an exclusive license from Celgene Logistics Sarl, a Bristol-Myers Squibb company.

The sNDA is supported by a clinical, non-clinical, and chemistry, manufacturing and control (CMC) data package, including the results from the pivotal Phase 3 AUGMENT study (NCT01938001) sponsored and conducted by Bristol-Myers Squibb.

BeiGene's Brukinsa Fails to Match AbbVie-J&J Rival Imbruvica in Late-stage Study

BeiGene Ltd said on December 16 a late-stage trial testing its recently approved cancer treatment Brukinsa did not meet the main goal of proving superior to Imbruvica, a rival medicine from J&J and AbbVie Inc. BeiGene in November won approval for Brukinsa for treating patients with mantle cell lymphoma, who have received at least one prior therapy.

The trial tested the drugs in patients with Waldenstrom's Macroglobulinemia, a type of non-Hodgkin lymphoma.While the trial did not achieve statistical significance on its primary endpoint of superiority in complete response (CR) and very good partial response (VGPR) rates for zanubrutinib compared to ibrutinib, zanubrutinib demonstrated a higher VGPR rate as well as improvements in safety and tolerability in this first randomized comparative trial to read out within the BTK inhibitor class.

BeiGene did not say if it plans to submit the ASPEN data for regulatory approval, saying only that it will discuss the results with the Food and Drug Administration and the European Medicines Agency.

Bridge and Daewoong Announces NMPA Clearance of IND for BBT-401, a Pellino-1 Inhibitor for UC

Korea-based Bridge Biotherapeutics, in partnership with Daewoong Pharma, announced that the Center for Drug Evaluation (CDE) of China's National Medical Products Administration (NMPA) cleared the Investigational New Drug (IND) application submitted as of September 25, 2019 for BBT-401, a potent first-in-class Pellino-1 inhibitor for the treatment of ulcerative colitis (UC).

Bridge Biotherapeutics plans to initiate a Phase I study of BBT-401 in Chinese subjects in May 2020. The safety, tolerability and pharmacokinetic data of the drug candidate will be assessed with single and multiple ascending oral doses in the study. The study will include 30 healthy volunteers and is targeting to complete by end of 2020.

The company entered a partnership with Daewoong Pharmaceutical to jointly develop BBT-401, under the license and co-development agreement signed in December 2018. Daewoong Pharmaceutical acquired the exclusive right for the development and commercialization of BBT-401 in 22 Asian countries, including China, Japan and Korea. The two companies have been closely collaborating on the clinical development for BBT-401 in Asian countries, preceded by the Phase II study in the U.S. with active UC patients.

BBT-401, discovered by SKKU (Sungkyunkwan University) and KRICT (Korea Research Institute of Chemical Technology) is a GI-tract restricted small molecule inhibitor of Pellino-1. From the Phase I study, the drug candidate was proved to be well tolerated and safe in humans with local distribution in colon. The drug candidate in now on its Phase II study in selected groups of active patients with UC in the U.S.

Luye Pharma Submits NDA in the U.S. for Its Antidepressant Drug LY03005

Luye Pharma Group has announced on December 26 submission of a new drug application (NDA) to the U.S. FDA for LY03005, a new chemical drug for the treatment of major depressive disorder. It is also the second U.S. FDA NDA submission in the central nervous system (CNS) filed by the company.

The application was based on the consensus reached with the FDA under End-Of-Phase 2-CMC (EOP2-CMC) meeting and Pre-NDA (PNDA) meeting. LY03005 is an exclusive CNS product developed under Luye Pharma's new chemical/therapeutic entities (NCE/NTE) R&D platform. It is a serotonin-norepinephrine-dopamine triple reuptake inhibitor (SNDRI), and one of the active metabolites is a serotonin-norepinephrine reuptake inhibitor (SNRI).

Luye Pharma has obtained patents covering the chemical compound, crystal form and formulation of LY03005. The patents in relation to the chemical compound and crystal form have been granted in target markets such as China, United States, Europe, Japan and Korea.

InxMed Cleared to Initiate Phase I Trial for Anticancer FAK Inhibitor

InxMed (Shanghai), a clinical stage biotech company dedicated to developing innovative, individualized medicines with international impact, announced on December 20 that the Company has obtained IND (Investigational New Drug) clearance for IN10018, a proprietary focal adhesion kinase (FAK) inhibitor, from the NMPA to initiate Phase I clinical trial in patients with locally advanced or metastatic gastric cancer.

Previously IN10018 has opened IND in the United States in August 2019.

ZJ Medicine and Ambrx Present Positive Data from a Phase 1a/1b Trial of ARX788 in Metastatic HER2 Positive Breast Cancer

Zhejiang Medicine, NovoCodex and Ambrx announced on December 12 positive interim topline data from the ongoing "111" trial (CTR20171162) evaluating ARX788, a novel anti-HER2 ADC, in heavily pretreated patients with metastatic HER2 positive breast cancer. All patients enrolled had failed prior therapy with trastuzumab and 47% had failed therapy with trastuzumab and lapatinib.

ARX788 was well tolerated at all dose levels with just two ≥ Grade 3 drug related reversible adverse events observed amongst 51 enrolled patients. ARX788 showed an excellent safety profile with dose escalation continuing. No DLT or MTD was observed as of the November 20, 2019 cut-off date.

These data originate from the Fudan University Shanghai Cancer Center in China and are part of a broader global ARX788 development program (NCT03255070 and CTR20171162) that includes clinical sites in China, USA and Australia. The 42nd Annual San Antonio Breast Cancer Symposium Poster is available at www.ambrx.com.

Zhejiang Medicine licensed the commercial rights to ARX788 in China in 2013. The promising clinical data for ARX788 serves as a solid foundation to the second and more recent collaboration. Earlier this year, Ambrx and Zhejiang Medicine (via its subsidiary NovoCodex) entered into their second collaboration to develop and commercialize ARX305 in China. ARX305 is an anti-CD70 Antibody Drug Conjugate for the potential treatment of Renal Cell Carcinoma, Multiple Myeloma, and other solid tumors.

Innovent Announces First Patient Dosed in Phase I Trial of Anti-LAG-3 mAb in China

Innovent Biologics announced on December 6 that the first patient has been successfully dosed in a Phase I clinical trial (CIBI110A101) of anti-lymphocyte activation gene 3 (LAG-3) recombinant fully human monoclonal antibody drug candidate (IBI110) in China.

CIBI110A101 is a phase I clinical study conducted in China to evaluate IBI110 in the treatment of patients with advanced malignancies. The primary objectives of the study are to evaluate the safety, tolerability, and initial anti-tumor efficacy of IBI110, either as monotherapy or in combination with Tyvyt® (sintilimab injection), an anti-programmed cell death protein 1 (PD-1) antibody drug. The Phase Ia study will explore the safety, tolerability and efficacy of IBI110 as monotherapy.

IBI110 is a recombinant fully human anti-LAG-3 monoclonal antibody and will provide a brand new clinical solution to cancer patients. IBI110 can directly bind to LAG-3 on the surface of T cells, disturb the interaction between LAG-3 and MHCII, relieve the inhibiting effect of LAG-3 on T cells activation and enhance the anti-tumor immune response of T cells. Furthermore, the combination of anti-LAG-3 and anti-PD-1/PD-L1 may provide synergistic enhancement and improve the anti-tumor efficacy.

Samsung Bioepis Approved to Initiate Phase 3 Trial of Trastuzumab Biosimilar in China

Samsung Bioepis Co. announced on on December 11 that it has received approval from China's National Medical Products Administration to initiate a phase 3 trial of SB3, a biosimilar version of Herceptin (trastuzumab) being developed in collaboration with AffaMed Therapeutics as an intravenous trastuzumab for the treatment of HER2-positive breast cancer. SB3 was already approved under the brand name of Samfenet in Korea and Ontruzant in Europe and the United States.

The latest clinical trial, the first of its kind conducted by Samsung Bioepis in China, will enroll 208 breast cancer patients and the first patient visit is due in the first quarter of next year. Samsung Bioepis aims to demonstrate SB3 is not different from its reference drug Herceptin in terms of safety and efficacy.

The trial will be co-conducted by Samsung Bioepis and AffaMed Therapeutics, a biopharmaceutical company focused on identifying and licensing late stage candidates for commercialization. AffaMed was founded and funded by C-Bridge Capital which is in partnership with Samsung Bioepis.

China's 'Seaweed' Alzheimer's Drug Is Now Available to Patients

An experimental "seaweed" drug called Oligomannate, which treats Alzheimer's, is now available for patients to buy in China. Chinese officials announced conditional approval to the seaweed-based drug in November. Oligomannate is the first drug to be approved for the treatment of Alzheimer's in 17 years.

The drug is produced by Shanghai Green Valley Pharmaceutical Company, and comes in a 150 milligram capsule. It could cost up

to CNY 3,580 or US$512, for just a month's worth of treatment, according to the South China Morning Post.

Instead of attacking amyloid-beta or tau protein in the brain, researchers claim that Oligomannate works by tinkering with gut bacteria, which can lead to reduced inflammation in the brain. In previous research, researchers concluded that a sugar in Oligomannate suppresses bacteria that can cause cell degeneration and inflammation in the brain.

In an interview with CNN, Vincent Mok, who heads the neurology division at the Chinese University of Hong Kong, said that the new drug showed "encouraging results" when compared to acetylcholinesterase inhibitors – the existing treatment for mild to severe Alzheimer's.

"It is just as effective but it has fewer side effects," Mok said. "It will also open up new avenues for Alzheimer's research, focusing on the gut microbiome."

The past year has been an interesting one for the field of Alzheimer's research, between the cancellation then subsequent resurrection of Biogen's drug, aducanumab, and the approval of Oligomannate in China. Though some experts remain skeptical about aducanumab, others are touting it as a "milestone achievement" for Alzheimer's research.

Some experts also question the validity and safety of Oligomannate. Some doctors noted that very little is known about the drug. Writing an article in a blog for the American Association for the Advancement of Science (AAAS), scientist Derek Lowe noted that "a new Alzheimer's therapy is already going to face a tough development path and a lot of skepticism, but this one has even more red flags that I had realized."

However, more trials are in store for the drug – with some to be carried out in North America, Europe and Asia and enrolling 2,000 patients with mild-to-moderate Alzheimer's disease, Green Valley Vice President Li Jinhe announced on December 29. If the trials are successful, the goal is to make Oligomannate available globally by 2025.

The company plans to recruit around 2,046 patients with mild-to-moderate Alzheimer's for trials at 200 sites across North America, Europe and Asia Pacific for 18 months, the company's vice president Li Jinhe said yesterday.

General Health

NHC Issues Clinical Application Guidelines for New Anticancers

In an attempt to further streamline the clinical use of new anticancer drugs, the NHC issued the revised 2019 edition of the Clinical Application Guidelines for New Anticancers on December 20.

The revision work was led by the Expert Committee for Drug Rationalization under the NHC.

For full text of this document in Chinese, please visit the following NHC weblink: http://www.nhc.gov.cn/yzygj/s7659/201912/3922e93c3ef84c54879f36777db73568.shtml

National Drug Usage Monitoring Platform Becomes Operational

The National Drug Usage Monitoring Platform is now online, according to the Information Center under the NHC. It is reported that 8,840 medical institutions have registered on the platform, which already has 600,000 average daily visits. The platform is aimed at mastering drug inventory and usage situations of all public medical institutions and promoting prioritized use of essential drugs.

Earlier healthcare reform documents mandate collection of data relating to inventory, use quantity, purchase price and supply & delivery of drug products. The surveillance scope of drug products is expected to expand under a recent document issued by the NHC, the Notice on Drug Usage Surveillance and Overall Clinical Appraisal, in April this year. The notice requires a sample of no less than 1,500 medical facilities selected from all levels of public medical institutions. The focus of drug usage surveillance will be on national essential drugs, drug products under the anticancer price reduction program, and products covered under the national level centralized drug purchase trial.

By 2020, the notice requires surveillance coverage of all level 2 and above public medical facilities, while private medical institutions and retail pharmacy stores are encouraged to participate in the drug usage monitoring.

NHSA Issues Interim Regulation for Government Information Publication

The NHSA Issued the *Interim Regulation for Government Information Publication* on December 17 with effect from the date of issuance.

The document has a total of 47 articles in seven chapters including: 1) General Principles; 2) Division of responsibility; 3) Scope of publication; 4) Voluntary Publication – Such information include relevant policies, development plans and statistics relating to healthcare security, as well as outcomes of relevant administrative licensing, administrative punishments of violations; budgetary and audit information of NHSA; and list, standards and implementation of centralized government purchase of NHSA; 5) Publication by application – NHSA shall establish a review and registration system for application of government information publication; 6) Supervision and assurance; and 7) Appendices.

For full text of this document in Chinese, please visit the following NHSA weblink: http://www.nhsa.gov.cn/art/2019/12/17/art_37_2175.html

NHC Sets Six Major New Goals to Keep AIDS/AIDS Under Control

China will take comprehensive measures to control HIV transmissions in a bid to keep HIV/AIDS prevalence in the country at a low level, the National Health Commission said on Nov 30, the day before World AIDS Day.

The commission listed six major goals expected to be achieved in the next three years, including raising awareness of HIV prevention and control and educating people on avoiding or reducing unsafe sexual behavior. The goals also include detecting and treating as many cases of HIV infection as possible and

eliminating mother-to-child transmission.

There were 230 million HIV tests conducted in China in the first 10 months of this year and 131,000 new cases reported, the commission said. Sexual transmission was the main route of infection, with heterosexual sex accounting for 73.7 percent of new infections and sex between gay men accounting for 23 percent, it said. The country had 958,000 people living with HIV/AIDS by the end of October, it added.

There were 240 million HIV tests conducted in China last year, which revealed 149,000 new cases, according to the Chinese Center for Disease Control and Prevention.

China Launches Mental Health Initiative for Students

China plans to enable all schools to offer psychological services for students by the end of 2022 as part of an action plan targeting the mental health of children and adolescents.

Each school should set up a psychological service platform or rely on school doctors to provide students with mental health services by the deadline, according to the plan jointly released by 12 central authorities including the National Health Commission and the Ministry of Education. Institutions for preschool education and special education are required to be staffed with full-time or part-time mental health teachers.

According to the action plan, by the end of 2022, 60% of the country's psychiatric hospitals at Grade II and above should offer mental outpatient services for children and teenagers, while 30% of children's hospitals, maternal and child care service centers and general hospitals at the same levels are required to provide such services. China has a three-tier system to grade hospitals. Many Grade II hospitals are county-level hospitals with 100 or more beds.

By 2020, all prefecture-level cities should provide residents access to psychological assistance hotlines, and the awareness rate of core mental health knowledge among the young should reach 80 percent, the plan read.

The incidences of mental and behavioral problems and the prevalence of mental disorders among young Chinese have been on the rise in recent years, which has become an increasingly prominent public health problem.

To address this challenge, the action plan aims to form a mental health service network that incorporates schools, communities, families, media and medical institutions, and foster a social environment conducive to protecting the mental health of young Chinese, said the NHC's disease prevention and control bureau in a statement.

The initiative also includes measures to implement preventive interventions for psychological and behavioral problems and mental disorders of teenagers and to strengthen psychological counseling for key groups.

Shanghai Launches New Policy to Support Building of Research Hospitals

The Health Department of Shanghai issued a new document, *Implementation Plan for Stepping Up Clinical Research of Medical Institutions in Shanghai to Support Development of Biopharmaceutical Industry Development*, on December 16.

The document calls for building of research hospitals in Shanghai on the basis of the National Medical Center and the National Clinical Medicine Research Center.

It is mandated that the city shall build five research hospitals as the platform for major and hard-to-treat diseases, clinical research and technical innovation by 2020. Besides, Shanghai shall also establish 15 clinical medicine research centers, five integrated medical innovation clusters by then with all municipal level hospitals setting up internal clinical research facilities.

By 2030, the document wants a batch of world class research hospitals to emerge in Shanghai with globally influential novel research outcomes. It aims to become a major component of global medical innovation by then.

Shanghai will advocate open sharing of its public medical resources with clinical data opening orderly to businesses.

The document encourages medical institutions to participate in clinical research and the outcomes of such work shall be included in the performance evaluation of public medical institutions in the city.

Municipal level medical institutions are encouraged to set up translational facilities for research achievements, which may be jointly owned by medical institutions and clinical researchers.

The document focuses on the upgrading of cutting-edge medical technology, as well as health frontiers such as genetic technology, brain science, microbiome project, artificial intelligence, wearable devices and medical big data. In the future, Shanghai will vigorously carry out new businesses and new technologies such as cell therapy, minimally invasive technology, and genomics for patients with degenerative diseases, metabolic lesions, and tumors, and strive to make breakthroughs in R&D and application in oncology, geriatrics, rehabilitation medicine, reproductive medicine, and neuro-medicine.

At the same time, Shanghai will also promote the upgrading of the biomedical manufacturing industry, and support the R&D of molecular drugs, nano-drugs and new medical materials, and promote application of new technologies such as 3D printing, lasers, protons and heavy ions, and quantum in the medical field.

In order to promote the clinical application of biotherapeutic technology and major innovative products, the document proposes to promote the clinical application of advanced biotherapeutic technologies such as stem cell and immune cell therapy, accelerate the new projects for clinical research, and boost support for the development of high-quality innovative technologies. On the basis of reasonable prices and accurate curative effects, in accordance with relevant regulations of the National Healthcare Security Administration, eligible innovative technologies and projects will be included in the scope of medical insurance payments.

The document also allows drugs and devices in clinical trials to be conditionally used by patients. For drugs that are undergoing clinical trials for the treatment of diseases that are seriously life-threatening and have no effective treatment, which may be beneficial to patients and conform to ethical principles, after review and informed consent, they can be used in clinical trial institutions on other patients with the same conditions. Expanded clinical trials of medical devices are permitted.

The document encourages public medical and health institutions to prioritize the use of innovative technologies and products, and incorporates the use of innovative products from Shanghai (large equipment, drugs, expensive medical consumables, in vitro diagnostic reagents, etc.) into the performance evaluation

index system of public hospitals. Matching support, training and other work shall be carried out to promote the city's biomedical innovation products.

People in the News

Recent Executive Moves

The NMPA promoted ***WENG Xinyu*** to the position of Director, Division of Pharmacovigilance. He had previously been First Secretary & NMPA Attaché at the Chinese Embassy in the U.S.A. for nearly four years; and Director, Division of Bilateral Cooperation, Department of International Cooperation, CFDA for over two years.

China Medicinal Biotech Association appointed ***Fei (Sophie) Zhu*** as Secretary General. She has been Market Access Director with Abbott Laboratories China for 13 years.

WU Kun, formerly Pfizer China Biopharma country lead, has been reassigned as COO of the company after he was reported to be leaving Pfizer. He will report to ***Andreas Penk***, who is now Pfizer's Regional President, Oncology IDM but will succeed Wu's original post.

Brady Zhao joined Bayer Healthcare China as Head, Late Stage Oncology Clinical Development. He had previously been with MSD China for four and half years, most recently as Senior Director, Clinical Research.

Novartis Oncology China promoted ***You (Josh) Zhou***, previously Head of Commercial Excellence, to Head of Rare Disease Business Unit. He has been with the company for nearly seven years. Before joining Novartis in 2013, he spent less than two years with China Resources Group as Senior Researcher, Corporate Strategy Research; four years with McKinsey as Engagement Manager and with PUMCH as a physician for two years.

CAI Hua joined Novartis Oncology China as Head of Blood Business Unit. Before joining Novartis, he was Senior Marketing Director, Oncology Products with Pfizer China.

Nick Wang joined GSK as Oncology Lead Asia & Speciality Care Lead Intercontinental. He had previously been with Novartis for 15 years, most recently as Head, Hematology & Rare Disease Franchise, China at Novartis Oncology for four years; and Head of Operations, Asia at Novartis for over two years.

GSK promoted ***WU Keke*** to Sales Director, Shingrix, China from previously Head of Distribution, Bidding Excellence & Commercial Supply Chain, China Vaccines. She had been with GSK since 2012.

Denis Wang joined Sanofi Pasteur China as Franchise Head – Strategy. She had previously been Marketing Director with Takeda China for one and half year; Marketing Director with Novartis China for two and half years; and Associated Marketing Director with Roche China for less than a year. Before joining Roche in 2015, she had been AstraZeneca China for more than ten years, most recently as Associated Regional Sales Director.

Frank Qin joined MSD China as RSD. He had previously been Associate Regional Director with Shenzhen Salubris Pharma for over a year and Senior Regional Manager with Sanofi-Aventis China for nearly ten years.

YUAN Ying joined Biogen China as Country Safety Lead. He had previously been Senior PV Manager with Sanofi China for over a year and PV Quality Manager with Boehringer Ingelheim China for a year.

Terry Xu joined Covance China as Director of BD. He had previously held various BD positions with dMed Biopharma, George Clinical and Hangzhou TigerMed.

CStone Pharmaceuticals has appointed ***Shirley Zhao*** to the position of GM Greater China and Head of Commercial. Shirley is an industry leader with over 26 years of experience working at multiple multinational biopharmaceutical companies. Before joining CStone, Zhao was the Country GM for BMS China. Prior to BMS, Zhao served as Country GM at Genzyme and Allergan.

Johnson Li joined Everwell Corporation as Commercial Operation & Business Head after spending nearly nine years with Roche China, most recently as Director of Training & Development and Head of Roche China Academy; and over six years with Beijing Novartis Pharma, most recently as Director of Commercial Training & Development and earlier Head of Sales Operation.

Alan Yan is now Co-founder & CEO of Sperogenix. Before this, he had been Marketing & Business Operation Executive Director – China with Sanofi Pasteur for three years; GM – China with Actelion for four and half years.

Chao Arthur Wu joined Sperogenix Therapeutics as Vice President. He had previously been with Sanofi Genzyme China as Franchise Head for over a year; and earlier with Pfizer China for over eight years, most recently as Marketing Head.

Alan Xu joined CMH Healthcare Fund as Executive Director. He had previously been Vice President and GM China with Ambrx for over four years; VP, GM – BD with NT Pharma Group for seven and half years.

Brian Muma joined NGM Biopharmaceuticals as VP, Human Resources. He had previously been VP Human Resources with ORIC Pharmaceuticals for two and half years; VP, Human Resources with Roche China for over three years, and with Genentech for over ten years, most recently as Sr. Director, Human Resources, Commercial Operations.

ZHOU Jie joined Convalife (Shanghai) as VP, commercial Operation. He had previously been with Sandoz China for 13 and half years, most recently as Head of Gx BU.

Hank Wang joined Harbin Pharmaceutical Group as Deputy General Manager of R&D after spending four years as an entrepreneur. He had previously been Vice President of Yangtze River Pharmeceutical Group for neary three years; Senior Principle Investigator & Head of Chemistry Operation with BeiGene for one and half years; and Assistant Director of Medicinal Chemistry with BioDuro for three years.

James Yang joined ExcellBio as Co-CEO. He had previously been CEO of Taiyu Huaxia Biotech for two years and President / CEO of Abpro China for two years.

Other News

Amid Trade War, China Lowers Import Tariffs on 850 Products Including Drugs

Amid an ongoing trade war with the Trump administration, China's Ministry of Finance made a significant announcement this week that prompted some proud retweets from the president.

"China will lower import tariffs on over 850 products from January 1," reported Reuters. "China says it will cut import tariffs for goods including frozen pork, pharmaceuticals, paper products and some high-tech components starting from Jan. 1, according to a statement from the Ministry of Finance," Bloomberg Economics reported.

Pharmaceutical products, especially the ones containing alkaloids for asthma treatment and new diabetes medicines, will also enjoy zero import tax.

Upcoming Event

Event: International Conference on Biosimilars and Biologics
Dates: April 20 – 21, 2020
Venue: TBD, Dubai, UAE
Weblink: https://coalesceresearchgroup.com/conferences/biosimilars-biologics
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Feature Articles

IQVIA: Chinese Hospital Drug Market Up 9.7% in MAT Q3/2019

The Chinese urban hospital drug sales were up 9.7% in the MAT Q3/2019, reaching nearly CNY 221.3 billion, according to IQVIA's China Hospital Pharmaceutical Audit (CHPA, ≥100 beds).

In the third quarter of 2019, Chinese hospital drug sales reached CNY 221.3 billion, rising at 10.1% compared with the third quarter of 2018. Growth rate fell slightly.

In the third quarter of 2019, both MNCs and domestics saw encouraging growth as a result of national level BMI access negotiation and centralized drug purchase implementation. MNCs in hospital drug sales reached CNY 63.6 billion, while Domestic companies in hospital drug sales reached CNY 157.7 billion. MNCs (+17.0%) led Domestic companies (+7.5%) in terms of growth rate for in the third quarter of 2019. Growth of domestics in Q3 fell compared with the previous quarter but was up compared with the same quarter last year.

In terms of MAT Q3/2019, MNCs had sales nearly CNY 233 billion, up by 15.9%. MNC growth has been persistently rising from MAT Q1/2017. Domestics had sales of CNY 603.3 billion in the same period, up 7.4%, continuing to rebound from the bottom in Q4/2018.

Among the top ten drug suppliers to Chinese hospitals by sales value in the third quarter of 2019, there were five MNCs and five domestic companies. The pack is led by Pfizer, followed by AstraZeneca and Yangtze River Pharma. Most of the top ten had above average growth in the period with Roche gaining at the highest rate of 39.8%.

The top ten drug products by sales in Chinese hospital continued to be dominated by domestic products (4) in the third quarter of 2019 with Jia Luo Ning taking the lead again. The only six MNC products in the pack were Lipitor, Sulperazon, Herceptin, Plavix, Pulmicort and Avastin ranking No.2, No.3, No.5, No.6, No.7 and No.9 in the period.

Formulated TCMs was the top therapeutic category by drug sales at CNY 32.6 billion and up 1.7% in Q3/2019 and at CNY 128.4 billion and up 2.2% in MAT Q3/2019. Oncology and immunomodulators, blood and hematopoietic system drugs, and respiratory system drugs are the top 3 TCs by the sales growth rates at respectively 22.2%, 14.5% and 14.5%.

Tier 1 cities: Beijing, Shanghai, Guangzhou
Tier 2 cities: Nanjing, Harbin, Tianjin, Ningbo, Chengdu, Hangzhou, Wuhan, Shenyang, JiNan, Shenzhen, Suzhou, Xi'an, Zhengzhou, Chongqing, Changsha, Pearl River Delta urban agglomerations, Fuzhou Xiamen Quanzhou urban agglomerations, Zhejiang urban agglomerations
Tier 3 cities: Urumqi, Nanning, Nantong, Nanyang, Dalian, Taiyuan, Changzhou, Xuzhou, Yangzhou, Wuxi, Kunming, Wenzhou, Yantai, Shijiazhuang, Guiyang, Changchun, Qingdao, Lanzhou, Nanchang, Yinchuan, Huhehaote, Haikou, Henan

Top 10 Drug Suppliers to Chinese Hospitals MAT Q3/2019

Rank	Company	+/- (%) Q1/2019	+/- (%) Q2/2019	+/- (%) Q3/2019	+/- (%) Q1/2018	+/- (%) Q2/2018	+/- (%) Q3/2018	+/- (%) 2018
1	Pfizer	+12.8	+13.6	+14.9	+17.4	+16.7	+14.6	+14.7
2	AstraZeneca	+19.5	+20.5	+23.4	+19.0	+19.0	+18.3	+19.0
3	Yangtze River Pharma	+14.1	+17.2	+16.7	+12.5	+12.6	+12.7	+14.1
4	Jiangsu Hengrui	+22.3	+20.4	+19.6	+16.8	+19.2	+21.1	+23.0
5	Roche	+31.5	+41.1	+39.8	–	+10.9	+15.9	+24.8
6	Sanofi	+13.5	+12.7	+10.7	+12.5	+12.9	+13.4	+13.9
7	Bayer	+17.6	+20.6	+23.6	+11.1	+11.4	+12.2	+15.5
8	Jiangsu Chia Tai Tianqing	+8.5	+13.3	+18.2	+7.1	+6.6	+5.5	+6.3
9	CSPC	18.6	–	+31.2	–	–	–	–
10	Shanghai Fosun	0.0	+4.1	+4.7	-1.1	-1.9	-2.5	-1.1

Source: IQVIA CHPA (>=100 patient beds) *

Top 10 Drug Products by Quarterly Sales in Chinese Hospitals Q3/2019

Rank	Product	Producer	+/- (%) Q1/2019	+/- (%) Q2/2019	+/- (%) Q3/2019	+/- (%) Q1/2018	+/- (%) Q2/2018	+/- (%) 2018
1	Jia Luo Ning (Dezocine)	Yangtze River Pharma	+16.0	+17.1	+18.1	+18.0	+14.6	+14.5
2	Lipitor	Pfizer	+15.6	+13.3	+8.9	+14.4	+13.6	+15.7
3	Sulperazon	Pfizer	+13.6	+16.2	+19.6	+28.6	+19.7	+18.2
4	En Bi Pu	CSPC NBP Pharma	22.6	+28.5	+35.0	+24.5	+19.9	+21.6
5	Herceptin	Roche	90.7	+128.4	+97.9	–	+28.2	+59.3
6	Plavix	Sanofi	+6.7	+4.3	+0.8	+7.9	+6.4	+7.1
7	Pulmicort	AstraZeneca	+11.9	+15.7	+16.6	+24.7	+17.4	+14.1
8	Xue Shuan Tong	Guangxi Wuzhou Pharma	-3.4	+1.5	+0.6	-6.6	-9.5	-6.8
9	Avastin	Roche	–	+90.5	+77.5	–	–	–
10	Li Pu Su	Nanjing Luye	–	+17.2	+13.4	–	+19.8	–

Source: IQVIA CHPA (>=100 patient beds)

Top 10 TCs by Quarterly Sales in Chinese Hospitals Q3/2019

Rank	Therapeutic Category	+/- (%) Q1/2019	+/- (%) Q2/2019	+/- (%) Q3/2019	+/- (%) Q1/2018	+/- (%) Q2/2018	+/- (%) Q3/2018	+/- (%) 2018
1	Others (inc. TCMs)	-3.7	-0.1	+2.2	-3.2	-5.0	-7.0	-4.9
2	Systemic Anti-infectives	+0.8	+4.1	+6.8	+6.8	+6.1	+3.4	+3.1
3	Digestive System and Metabolic Drugs	+3.4	+7.1	+9.7	+2.6	+1.4	+0.2	+1.7
5	Oncology and Immunomodulators	+15.3	+19.7	+22.2	+8.3	+8.3	+1.9	+12.0
4	Cardiovascular Drugs	+4.5	+7.0	+7.2	+4.0	+2.8	+9.1	+3.7
6	Central Nervous System	+6.4	+8.6	+9.2	+2.9	+2.4	+1.8	+4.4
7	Medical Solutions	+0.6	+4.3	+7.6	-1.0	-2.0	-3.4	-1.5
8	Blood and Hematopoietic System	+13.3	+14.5	+14.5	+9.9	+10.4	+11.1	+13.1
9	Respiratory System	+7.0	+11.2	+14.5	+13.3	+11.7	+8.7	+8.3
10	Skeletal Muscle System	+3.9	+7.1	+10.9	+2.0	+1.1	-0.2	+1.3

Source: IQVIA CHPA (>=100 patient beds)

IQVIA: Chinese Retail Pharmacy Sales Up 1.9% in Q3/2019

The sales of Chinese prefecture-level urban retail pharmacy market reached CNY 191.7 billion in the MAT Q3/2019 (12 months ending the end of September 2019), growing 1.9% at slightly faster pace than MAT Q2/2019, according to IQVIA PharmaTrend, which monitors retail pharmacies in 41 Tier 1/2 thru 4 representative Chinese cities.

Rx and OTC drugs, accounted for 45% and 43% respectively of the total prefectural level urban Chinese retail pharmacy sector in MAT Q3/2019. While Rx drug sales value in MAT Q3/2019 grew faster at 4.5% than the previous quarter, the sales volumes of both Rx and OTC drugs continued to decline with that of Rx drugs down by 5.5%.

In the retail pharmacy market of OTC drugs and health food products, growth of unit prices rose 0.2% in MAT Q3/2019, as sales volume continued to drop in the period. Formulated TCMs accounted for 55% of this market with slightly slower growth rate than the same quarter in 2018. Western medicines were the primary growth driver in retail pharmacy Rx drug market, accounting for 76% and up 6.7% in the period. Growth of Rx formulated TCMs continued to slow.

MNCs had an overall retail pharmacy market share of 25% with good penetration of tier 2 and below cities in MAT Q3/2019. Their growth was substantially faster at 5.5% than domestics in the period.

Domestic companies contributed 87% of the prefectural level urban retail pharmacy sector OTC and health food sales in MAT Q3/2019, suggests IQVIA, while MNCs companies dominated Rx drug sales of the sector with market shares of 36% with growth rates of 7.4%.

Top 20 OTC Drug & Health Food Players in Retail Pharmacy Market MAT Q3/2019

Rank	Company
1	By-health
2	Shandong Dong'e Ejiao
3	China Resources Sanjiu
4	Guangzhou Pharma Group
5	Pfizer
6	Taiji Group
7	Yunnan Baiyao Group
8	Bayer Healthcare
9	Johnson & Johnson
10	Jilin Xiuzhen Pharma
11	Yangtze River Pharma
12	Beijing Tongrentang
13	GSK
14	Sino Pharm
15	Jiangxi Jiangzhong Pharma
16	Nin Jiom Medicine
17	Harbin Pharm. Group
18	Hainan YST
19	Conba
20	Shandong Fujiao Group

Source: IQVIA PharmaTrend™ National Audit

Top 20 Products by OTC Drug & Health Food Sales in Retail Market MAT Q3/2019

Rank	Product	Producer
1	Ejiao	Shandong Dong'e Ejiao
2	Caltrate D 600	Wyeth Pharma
3	KEYLID	By-health
4	Fufang Ejiao Jiang	Shandong Dong'e Ejiao
5	By-health Protein Powder	Guangzhou Baijian Bioengineering
6	Chuanbei Pipa Gao	Nin Jiom Medicine
7	Lanqin Oral Liquid	Yangtze River Pharma
8	Yi An Ning Pills	Tong Yi Tang Pharma
9	E'jiao	Shandong Fujiao Group
10	Centrum Tablets	Wyeth Pharma
11	ShuJin JianYao Pills	Guangzhou Chen Li Ji
12	Shen Bao	Jiangxi Huiren
13	Calcium and Zinc Gluconates Oral Solution	Hebei Baoding Aonuo
14	Jianweixiaoshi Tablets	Jiangzhong Pharma
15	Vitamin D Drops	QingDao Double Whale Pharma
16	999 Ganmaoling Granules	China Resources Sanjiu
17	Huoxiang Zhengqi	Chongqing Fuling Pharma
18	Compound Ganmaoling Granules	China Resources Sanjiu (Chenhou)
19	Yunnan Baiyao	Yunnan Baiyao Group
20	Calcium Carbonate and Vitamin D3 Tablets (II) /Granules	Kangyuan Pharma

Source: IQVIA PharmaTrend™ National Audit

Top 20 Rx Drug in China Retail Market MAT Q3/2019

Rank	Product	Producer
1	Viagra	Pfizer (Dalian)
2	Lipitor	Pfizer
3	Plavix	Sanofi
4	Jin Ge	Guangzhou BaiyunShan Pharma
5	Norvasc	Pfizer (Dalian)
6	Shi Hui Da	Shihuida Pharma Group
7	Acarbose	Bayer Healthcare
8	Pudilan Qingyan Oral Solution	Jiangsu Jumpcan Pharma
9	Cialis	Eli Lilly
10	Adalat	Bayer Healthcare
11	Fu Ke Wei	Chia Tai Tianqing Pharma
12	Glucophage	Merck
13	Crestor	AstraZeneca
14	Atorvastatin Calcium Tablets (A Le)	Beijing Jialin Pharma
15	Compound Danshen Dripping Pills	Tianjin Tasly Group
16	Aspirin	Bayer Schering
17	Betaloc ZOK	AstraZeneca
18	Singulair	MSD
19	Novomix 30 Penfil	Novo Nordisk (Tianjin)
20	Run Zong	Chia Tai Tianqing Pharma

Source: IQVIA PharmaTrend™ National Audit

The top 20 players by retail pharmacy sales of OTC and health food products represented 36.0% of the total market. There are only five MNCs in the top 20 with a market share of 7.7%. Guangzhou By-health was the top player in the period, followed by Shandong Dong'e Ejiao and China Resources Sanjiu. Pfizer led the MNC pack.

In terms of therapeutic classes by OTC drug and health food sales, the category of cough & cold drugs remained on the top with market share of 27.0% in MAT Q3/2019, followed by vitamins, minerals and supplements (VMS) and analgesics. The class of dermatologicals, digestive system, other intestinal drugs, nutritional supplements and other stimulants had growth above 2.5% in the period. Most other categories had negative growth in the period.

Among the top 20 OTC drug and health food products by retail pharmacy sales, 13 were formulated TCMs, two were chemical drugs and five were health foods. Only three products were from MNCs with a combined market share of 2.9%, while the rest were from domestic players. The average growth of domestic products in the leading 20 was 4.7% and that of MNCs was 2.3% in MAT Q3/2019.

Formulated TCMs was the largest therapeutic category by retail Rx drug sales with 24.5% market share. It is followed by cardiovascular system drugs and digestive system and metabolic drugs. Retail drug sales of oncology and immune-regulatory Rx drugs saw the highest growth (48.8%) in Q3/2019.

Among the top 20 Rx drugs by retail pharmacy sales in Q3/2019, 13 came from MNCs with a market share of 10.6% and a growth rate of 4.5%. Viagra led the pack by sales, followed by Lipitor and Plavix. Chia Tai Tianqing Pharma's Fu Ke Wei had the highest growth 136.6% among the top 20 products.

41 representative cities covered by IMS PharmaTrend™ National Audit are as follow:

Tier 1 cities: Beijing, Shanghai, Guangzhou, Shenzhen

Tier 2 cities: Tianjin, Chongqing, Hangzhou, Nanjing, Shenyang, Wuhan, Chengdu, JiNan, XiAn, Harbin, Changsha

Tier 3 cities: Foshan, Dalian, Ningbo, Qingdao, Wuxi, Zhengzhou, Dongguan, Taiyuan, Hefei, Nanning, Fuzhou, Nanchang, Shijiazhuang, Huhehaote, Changzhou, Xuzhou, Wenzhou, Guiyang, Yantai, Linyi, Kunming

Tier 4 cities: HuaiAn, Weifang, Taizhou, Huizhou, Yichang