



SINO BIOPHARMACEUTICAL LIMITED

中國生物製藥有限公司

(Incorporated in the Cayman Islands with Limited Liability)

(Stock Code: 1177)



2017

**Environmental,
Social and Governance Report**



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT



Content

I.	ABOUT THIS REPORT	2
II.	STRATEGY AND MANAGEMENT OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE MATTERS	3
	2.1. Participation of stakeholders	4
	2.2. Importance assessment and determination of key areas	4
III.	ENVIRONMENTAL PROTECTION	5
	3.1. Construction of environment, health and safety (“EHS”) management system	5
	3.2. Use of resources	6
	3.3. Environmental impact	7
IV.	STAFF DEVELOPMENT AND PROTECTION OF THEIR RIGHTS AND INTERESTS	9
	4.1. Employment	9
	4.2. Development and training	10
	4.3. Health and Safety	11
	4.4. Democratic management and caring for employees	12
V.	OPERATION PRACTICES	13
	5.1. Supply chain management	13
	5.2. Product responsibility	13
	5.3. Anti-corruption	17
VI.	CONTRIBUTION TO THE SOCIETY	18



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT



I. ABOUT THIS REPORT

Sino Biopharmaceutical Limited (the “Company” or “Sino Biopharmaceutical”), together with its subsidiaries (collectively, the “Group”), is a leading and innovation driven pharmaceutical corporation in the People’s Republic of China (the “PRC”). Our business encompasses a fully integrated chain which spans from research and developments (“R&D”) to manufacture and sales of pharmaceutical products. The Group’s products have gained a competitive foothold in various therapeutic categories with promising potentials, covering a vast array of biopharmaceutical, chemical and modernized Chinese medicines for treating liver diseases, tumours, cardio-cerebral diseases, analgesia, respiratory system diseases and orthopedic diseases. In order to enhance our sustainable competitiveness, the Group attaches great importance to R&D breakthroughs and is positioned as an industry leader in terms of R&D expenditures and product innovation. The Group also actively establishes and extends co-operations with leading domestic and overseas pharmaceutical institutes and enterprises, with a view to bringing about commercialization of world-frontier R&D efforts for the benefit of mankind. To take advantage of the development in technology and policy changes and capitalize on opportunities arising from extension of our principal business, the Group adopts a comprehensive strategic layout of development in the greater healthcare segment. Meanwhile, the Group actively explores ways to utilize new technologies in Big Data, Artificial Intelligence and Financial Technology to continuously enhance the efficiency of our management, R&D, manufacturing and sales activities.

Sino Biopharmaceutical is pleased to issue its environmental, social and governance report for the year ended 31 December 2017, which covers the Company and its subsidiaries including Chia Tai – Tianqing Pharmaceutical Holdings Co. Ltd. (“CT Tianqing”), Lianyungang Runzhong Pharmaceutical Co., Ltd. (“LYG Runzhong”) and Lianyungang Chia Tai Tianqing Medicines Co., Ltd., to report practices, performance and development of the Group in corporate social responsibility in 2017 to our shareholders, staff, clients, partners and other stakeholders.

This report is prepared in compliance with the requirements as set out in the Environmental, Social and Governance Reporting Guide under Appendix 27 to the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT



II. STRATEGY AND MANAGEMENT OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE MATTERS

With the continuous development and expansion of the scale of enterprise and the promotion of the internationalization process, the Group is gradually integrating the sustainable development strategy into its overall development strategy system.

Our mission: Based on continuous innovation in research and development with improvement of quality, while providing customers with quality products and services to improve the quality of life, we will strive to maximise the investment return to shareholders and satisfy personal development needs of the staff, and take up more social responsibility to contribute our development results to the society.

Our objective: By working with industry elites, we will make efforts to promote the development of social responsibility in the healthcare industry and make the Group a respected corporate citizen in the industry.

Our strategy: We will integrate the philosophy of sustainable development into our overall corporate development plan to fulfill social responsibility, explore a more clear path to make the Group a leading enterprise with sense of social responsibility and philosophy of sustainable development in the healthcare industry, and at the same time integrate the sense of social responsibility and the philosophy of sustainable development into various business segments of the Group to make it the basic principle of behaviour of our staff.



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

2.1. Participation of stakeholders

Based on the actual situation of operation of the Company, our stakeholders are mainly governmental and industrial regulators, investors, customers and consumers, suppliers, employees, community, industry peers, media and general public. In 2017, we communicated with stakeholders mainly by the following methods to better perform our social responsibilities:

Stakeholders	Methods of communication
Governmental and industrial regulators	Government visits, supporting government projects, participation in policy development, industry collaboration
Investors	Board of directors, information disclosure, conference exchange, ordinary visits, website, mail, telephone
Customers and consumers	Academic seminars, new product launching conference, customer service, telephone consultation, complaint handling
Suppliers	Standardized supplier management system, improved procurement tender mechanism, annual evaluation
Employees	Trade union, employee congress, multi-type training, safety management, cultural and sports activities, health examination, paid annual leave
Community	Community activities, charitable organizations, volunteer work
Industry peers	Trade organizations, forums, conferences
Media and general public	Information disclosure, public opinion monitoring, media communication mechanism, website

2.2. Importance assessment and determination of key areas

According to (1) the communication with stakeholders, (2) the core business model and operation procedures of the Company, and (3) statutory requirements for information disclosure, we have made materiality analysis and prioritised the environmental and social responsibility issues, and determined that the followings are key issues in relation to the Group's environmental and social responsibility. The Group will give priority to such issues and take them as the key areas in supporting its sustainable development.

Scope	Aspects
Environment	Strengthening construction of environment, health and safety management system Reducing the use of resources Reducing the impact on environment
Society	Improving staff development and training Facilitating health and safety of employees Strengthening supply chain management Attaching importance to product responsibility Committed to contribution to the society

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

III. ENVIRONMENTAL PROTECTION

In pursuing economic development, to maintain sustainable development of the country and the enterprise as well as to fulfill a healthy and better life of our countrymen by protecting the environment and searching for ecological civilization are also our concerns. The Group attaches great importance to energy conservation, emissions reduction and environmental protection, and will continue to put more efforts to protect the environment.

3.1. Construction of environment, health and safety (“EHS”) management system

■ EHS Management System

Taking CT Tianqing, a major subsidiary of the Group, as an example, the company has established a relatively comprehensive EHS management organization. The environment management affairs are taken charge by the safety production division which is equipped with special environmental protection personnel responsible for the environment impact assessment on construction projects and “Three Simultaneous”^(note) completion acceptance, environmental protection facility operation, environment monitoring, handling of environmental pollution incidents and other daily environmental protection related matters.

(Note: Article 41 of the Environmental Protection Law of the People's Republic of China requires the simultaneous design, simultaneous construction and simultaneous production of the anti-pollution equipment with the main body of any construction project)

Meanwhile, CT Tianqing has formulated relevant environmental management system to have effective control and management on the company's environmental factors, so as to ensure the effective operation of environmental protection work. The company has long set great store by the sustainable development strategy of establishing itself as an “environmental-friendly enterprise”, and has strictly controlled the emission of waste from production through the combined effect of enhanced production process, technology advancement and adoption of environmental protection facilities, so as to eradicate the adverse impact on staff and the environment.



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

3.2. Use of resources

As a pharmaceutical enterprise, the resource consumption of the Group mainly comes from water resources, electricity and steam. The Group strives to reduce resource consumption by adopting energy-saving equipment, technological innovation, reasonable planning and design and other measures.

■ Energy consumption

The Company requires that its subsidiaries shall establish an energy-consumption equipment account and energy consumption account for each department by enhancing energy measurement, detailing tertiary measurement and comprehensively collecting and sorting out energy utilization.

The resource consumption data for the reporting period was as follows:

Type of resources	Consumption	Consumption intensity (per RMB10,000 production value)
Total water consumption	1,118,104 cubic meter	0.9325 cubic meter
Total electricity consumption	45,220,600 kWh	37.72 kWh
Steam	109,682 ton	0.0915 ton
Packaging materials	6,268 ton	0.0052 ton

■ Energy conservation

The energy consumption of the Group's subsidiaries in the process of production and operation is reduced through measures like adjusting product mix, eliminating backward energy-intensive products, phasing out high energy-intensive outdated equipment and adopting rational energy-saving technology.

Case study: Significant achievement of LYG Runzhong in water conservation

The finance department of LYG Runzhong records the reading of the water meters at units using water daily. It will feedback to the production and engineering departments when there is any abnormal or unbalanced water consumption found, so as to investigate and find out the cause and resolve the issue timely. Each of the production plants also watches its actual water consumption closely, and avoids wasting by reasonably reducing the time and frequency of using water. On one hand, the engineering department sought for alternative equipment to the "jet vacuum pump" for big water users to reduce the frequency of using the vacuum pump. On the other hand, the company purchased leak detector to check its internal potable water pipe network in order to locate any leakage and carry out repair work timely. With low concentration of pollutants, waste water discharged after treatment is collected and used to supplement the supply to the vacuum pump and to water plants.

Through implementing multiple measures, the company's water consumption reduced by approximately 130,000 tons and saved charges of approximately RMB460,000 in 2017 as compared to the previous year.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT



3.3. Environmental impact

The impact of the Group's operation on the environment is mainly concentrated on the consumption of energy and raw materials as well as the production of waste water, exhaust gas and solid waste ("Three Wastes") in the process of production and operation. While taking a series of energy-saving measures, the Group also keeps lowering the impact on environment by strengthening the construction of environment management system, improving production technology, adopting advanced equipment, using clean energy and raw materials, implementing green office, etc.

■ Emissions of Three Wastes

The pollutant data for the reporting period was as follows:

Type of emissions	Emission/discharge	Emission/discharge intensity (per RMB10,000 production value)
Water discharged	457,199 cubic meter	0.3813 cubic meter
Chemical oxygen demand (COD) discharge	51.69 ton	0.00004 ton
Solid waste disposed ^(Note)	1,160.76 ton	0.00097 ton
Greenhouse gases emission	71,224 tCO ₂ -eq	0.0594 tCO ₂ -eq

(Note: the quantity of non-hazardous waste generated by the office (household garbage) is usually small and recycled as far as possible)

■ Emissions reduction measures

In respect of waste water discharge, the existing waste water of CT Tianqing is mainly generated from water processing, cleaning, testing, air conditioners and domestic sewage. The composite waste water produced in the factory is processed by the sewage treatment station of the company to reach standard and discharged into the municipal sewage pipe network, and finally discharged outside after centralized processing in the sewage disposal plant.

The types of the solid waste include sludge, waste activated carbon, waste drugs, waste packaging materials, and household garbage, which are all collected by category, and entrusted to relevant party for treatment. Of these wastes, hazardous solid waste are all entrusted to local units with business license qualified for the collection and treatment of hazardous waste to reduce the adverse impact on the environment and protect environmental safety in the locality.

Exhaust gases are produced from the smashing process in some workshops, with a small amount of dust from the packing section and water vapor from the drying section, which are all collected by the workshop pipeline for high-altitude emission via exhaust funnels. Of the exhaust gases, dust-laden exhaust gas will undergo high-altitude emission after being processed through cloth bag dusting system.





2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

Case study: LYG Runzhong's measures of handling Three Wastes

1. After the waste water entered the sewage treatment equalization tank, its pH will be adjusted through the neutralisation tank. It will enter the hydrolysis-acidification pool to improve the biodegradability of waste water and then enter the aerobic pool for the degradation of organic matters in the water. Finally, the sludge and water will be separated through membrane components. When the water from the sewage treatment station has reached the sewage treatment acceptance standard of the industrial park, it will enter the sewage treatment plant of the industrial park through pipelines for further treatment.
2. After passing through the exhaust gas processing facilities, the exhaust gas will be discharged at a high altitude through an emission outlet at a height of 15 meters. The exhaust gas processing facilities are alkaline spray tower and activated carbon fibre absorption tower.
3. Solid wastes produced are collected and temporarily stored in hazardous waste warehouse according to standardized procedures and handed over to qualified entities for disposal legally.

■ Green office and travel

The Group integrates the concept of green development into every link of corporate operation. The Group actively promulgates relevant systems to advocate ways of office work and travel that have minimal impact on the environment and reduce carbon footprint starting from saving water, electricity, office supplies and printing materials, and reducing oil consumption, which not only can save energy, improve energy efficiency and reduce pollution, but is also conducive to health while maintaining efficiency.

In addition, the Group is implementing full digitalisation in an orderly fashion. We strive to achieve standardisation, integration and mobility of the IT system of various business areas, as well as taking measures such as holding more meetings by means of telephone and video, developing mobile business platform, using operation information from multiple areas for analysis and management, with an aim of realising digital control of R&D, production, marketing and back office management so as to reduce resource consumption and the impact on environment.

During the reporting period, the Group strictly complied with relevant laws and regulations of China such as the Environmental Protection Law, Law on the Prevention and Control of Environmental Pollution by Solid Waste, Law on the Prevention and Control of Water Pollution, Law on the Prevention and Control of Atmospheric Pollution and Law on the Prevention and Control of Environmental Noise Pollution, and there were no incidents of non-compliance with the relevant environmental regulatory requirements that had a material impact on the businesses of the Group.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT



IV. STAFF DEVELOPMENT AND PROTECTION OF THEIR RIGHTS AND INTERESTS

Adhering to the principle of people first, the Group gradually optimizes its talent management system, respects and recognizes the personal value of its staff at all times, and provides a platform for self-development and self-enhancement of staff. We value the sustainable development of talents and provide our employees with equal opportunities for growth by actively exploring and innovating training mechanism and career development channels. We have strengthened the construction of an echelon of talents to reserve outstanding personnel. We will persevere to do a good job in staff caring and democratic management, protect the health and safety of staff and foster harmonious labour relation as well as positive corporate culture.

4.1. Employment

■ High-caliber, dynamic and talented team

As at 31 December 2017, we had a total of 18,649 employees, of which, 57% were male and 43% were female. The composition of our staff is characterized by relative balanced gender, younger age and high level of education.

Age structure of employees	Percentage
below 30	59%
30 to below 40	31%
40 to below 50	6%
50 to below 60	3-4%
above 60	<1%

Academic qualification of employees	Percentage
Doctor	1%
Master	9%
Bachelor	45%
Others	45%

■ Protection of the rights and interests of staff

During the reporting period, the Group strictly complied with the Labour Law, the Labour Contract Law and other relevant laws and regulations of the country.

Both the Company and its subsidiaries have signed with all of their staff labour contracts, which have stipulations on prior notice period regarding consultation and negotiation and other relevant clauses. Prior notice will be given to staff when material operational changes that may have a significant impact on staff are to be implemented.

The Group has always laid emphasis on protecting the legitimate rights and interests of its staff with assured labour rights and interests from remuneration package, recruitment and promotion, development and training, health and safety, working environment and corporate culture as well as anti-discrimination, with an aim to fostering harmonious labour relation.

It has been a consistent policy of the Group to fight against discrimination and advocate fair competition. Men and female employees enjoy equal pay for the same work. Female employees will have their jobs retained when they are in their pregnancy and lactation period. According to the law of the country, maternity leave is provided to female employees as well as male employees whose spouse has given birth.



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

The remuneration systems are established through a scientific and reasonable design, by taking reference to the local market and industry standard of the subsidiaries, the value of the post in concern and the performance of the staff. The remuneration level of staff has an obvious competitive edge in the industry and the places where the enterprises are located.

■ Absorption of talents

The Group regards the continued development of talents as an important guarantee to achieve the strategic objective of the Company. The Group offers ample room for career development of its staff through human resource management measures such as improving the talents absorption mechanism, establishing platform for career development, and regulating incentive and promotion mechanism.

In respect of optimizing external recruitment channels, our enterprises continue to bring in domestic and foreign talents through channels such as large recruiting websites, job fairs, campus job fairs and head-hunting agencies.

With regard to getting through the mechanism of internal flow of talents, the Group encourages its staff to achieve mobility within the enterprises through internal competitive employment. This move can not only select suitable candidates to serve the enterprises, but also expand the channel for the career development of staff, thus enhancing talent effectiveness and tapping their potential.

4.2. Development and training

As an innovation driven pharmaceutical enterprise, the Group attaches great importance on nurturing high quality staff. By continuously exploring to improve and optimize its training system and gradually enriching training programs and content, the Group tends to make training play an increasingly important role in the process of talents cultivation and become a platform for employees to enhance their professional skills and comprehensive quality.

■ Comprehensive training system

Training courses are mainly developed in respect of the following four aspects: (1) leadership training – taking leadership training as the core, training programs are designed with specific target and focusing on middle management staff; (2) occupational training – combined with the development of the “internal trainer” team, we actively develop professional capability training and general skill training; (3) new employees training – we help new employees to integrate into the working environment rapidly; (4) online enterprise school – it provides comprehensive online training resources and creates a good learning atmosphere.

■ Extensive training courses

Case study: “Training Camp of Management Capacity of Frontline Supervisors” of CT Tianqing

In March 2017, the “Training Camp of Management Capacity of Frontline Supervisors” commenced at the training room of the Company, with over 30 participants including production manager, officer of each workshop and frontline management personnel from the production system. The main theme of the training is “Analysis and resolution of problems at site”. The teacher systematically sorted out the procedures and method of analysing and resolving problem at site from the aspects of problem description, staff selection, problem analysing procedures, and formulation of solution and action plan.



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

4.3. Health and safety

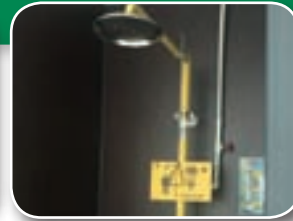
The Group has always paid attention to the health and safety of employees, focusing on working protection and management of production safety, and consistently complied with relevant laws and regulations of China such as the Production Safety Law. We have used leading production equipment in the industry to regulate strictly the operation process under the pharmaceutical production quality control standards, and strengthened the training of production operation, training of production safety and safety inspection to provide a safe operating environment for employees. At the same time, we are concerned about the occupational health of employees and have provided health checkup for all staff.

■ Showing concern for employees' occupational health

The Company requires its subsidiaries to improve construction of the occupational health management system from assessment of dangerous and harmful factors, protection of occupational health, health checkup, file management and so on. In each year, local regular hospitals are selected to provide general health checkup for all employees and specific health checkup for female staff. In view of possibility of staff of the production department having exposure to occupational hazards in the course of working, the Company provided physical examination of occupational hazards for such employees.

Case study:

CT Tianqing is equipped with standard working protection products for staff, and through the transformation of equipment and technical improvements, it reduced and controlled the dust, chemicals, noise and other occupational hazards, improved operating conditions for staff, and protected the health of employees. At the same time, it held regular occupational health education and training to enhance labour protection awareness of employees, performed occupational hazards on-site testing at employees' operating site, and posted safety charts at the operating site.



■ Adhering to safe production

Safe production is a long-term and continuous work. The Group strives to establish long-term safe production mechanism with the final goal of having zero incidents, constantly optimise safety management system, and enhance enterprise execution capacity and safety quality of employees.

For example, the Company's subsidiaries are required to formulate annual safe production training plan, and organize the frontline production staff to actively participate in the plan to improve the safe production awareness and related skills for all employees.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

Case study 1:

In 2017, CT Tianqing has carried out a series of safe production activities such as “Safe Production Hazard Inspection Month”, “Safe Production Month”, “Detailed Safe Production Inspection”, required the safe production responsibility letter to be signed at all levels, developed the safety management system, posted safety charts, held safety warning education film shows, and hanged safety propaganda banners. It also carried out different safety activities like escape drills and firefighting drills to remind all staff to be aware of and always pay attention to safety through practical acts.



Case study 2:

In 2017, LYG Runzhong has taken the following key management and control focusing on high risk factors affecting the safe production and management:

1. Tighten the approval and supervision of operations involving fire.
2. Improved the site entering procedures of external construction entities. Safe construction agreement shall be signed; safety training shall be conducted upon site entrance, and increased punishment will be implemented for violations.
3. Initiated the survey of occupational risk factors and the analysis of occupational risk for job positions. An occupational health management system has been established preliminarily and labour protection measures formulated to mitigate the risks of occupational diseases.
4. Prepared emergency plan and organised over ten specific emergency drills during the year.
5. Strengthened the management of fire equipment, completed the construction of a mini-fire station and enhanced the protection capacity of emergency handling facilities.

4.4. Democratic management and caring for employees

Workers representatives congresses are set up in all major subsidiaries of the Company to provide protection of collective negotiation agreement for employees. The workers representatives congress is an important manifestation of enterprise democratic management, so that employees can participate in the management process, having the right to know, participate in, consult and decide upon the company's management affairs; this will not only strengthen the sense of ownership of our staff, and enhance their sense of responsibility and enterprising spirit, but also capture the wisdom of employees to promote healthy growth of the company.

In addition to providing employees with competitive salary, state-based paid leave and transportation subsidies, meal subsidies, special post allowance, high-temperature subsidies and festive gifts, the Group has also established a number of personalized benefit programs which can benefit the staff themselves or their families such as medical aid mechanism for serious illness.

During the reporting period, the Group did not have any incident of non-compliance with the requirements under relevant laws and regulations in relation to equal opportunities, discrimination, harassment, occupational health and safety, child labour and forced labour.



V. OPERATION PRACTICES

5.1. Supply chain management

■ Strengthen supply chain management

In order to guarantee the purchase and use of products and services with stable and reliable quality, all of the Group's principal subsidiaries have established strict management systems on suppliers to standardize the selection principles, audit and appraisal methods and approval procedures on suppliers (including suppliers of materials, distributors and providers of transportation services).

The Group continued to strengthen the management on the purchase of materials. Based on the requirements of the new version of the Good Manufacturing Practice ("GMP") and the past performance of suppliers, it conducted classified and hierarchical management on suppliers. Major materials used for production were purchased from large and professional manufacturers. Our quality departments have led the establishment of a quality audit group to conduct audit and appraisal on new suppliers. They also conduct strict inspections and grading evaluations on the quality system and the production management system as well as the quality and timeliness of products delivery of existing suppliers on a yearly basis to determine whether such suppliers continue to be qualified.

Case study:

In 2017, CT Tianqing strengthened the management of tendering and procurement, conducted an appraisal on major suppliers. While maintaining and assuring the production quality of products, it reasonably and in compliance with law introduced more competitive suppliers, and achieved dual controls on the quality and price of the materials to be purchased. Meanwhile, production costs were lowered by direct purchasing from manufacturers and signing long-term cooperation agreements.

5.2. Product responsibility

As a large pharmaceutical group integrating R&D, production and sale of pharmaceuticals, our business system covers the whole process from production of raw materials to sale of products. From the raw materials entering our plants to the processing of materials and the completion of product manufacturing, we conduct strict inspection on each segment and process with corresponding quality standards on internal control higher than national standards and all processes have to pass such inspection. In order to be responsible for our products and improve the availability of health products, we consistently improve the product workmanship and the management process to further reduce manufacturing cost and alleviate the burdens of patients.

■ Increase efforts on R&D and innovation of products

The Group has always been focusing on R&D and innovation and considered them as the lifeblood for the development of the enterprise. As a result, it has increased the investment in R&D and concentrated on the rapid industrialization of R&D results for new products.

➢ Widen the R&D scope

The Group's several subsidiaries, namely: Nanjing Chia Tai Tianqing Pharmaceutical Co., Ltd., Jiangsu Chia Tai Qingjiang Pharmaceutical Co., Ltd. and Jiangsu Chia Tai Fenghai Pharmaceutical Co., Ltd., have been designated "Engineering Technological Research Centre for Treating Tumors and Cardio-Cerebral Phytochemistry Injections of Jiangsu Province", "Orthopedic Medicines Engineering Technological Research Centre" and "Engineering Technological Research Centre for Parenteral Nutritious Medicines" by The Science and Technology Committee of Jiangsu Province, respectively. Named by the Ministry of Personnel of the PRC as a "Postdoctoral Research and Development Institute", the research center of CT Tianqing is also the only "New Hepatitis Medicine Research Center" in the country.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

Case study:

In 2017, the Group made significant R&D achievements:

- The launch of raw materials and tablets of Tenofovir Disoproxil Fumarate, an anti-hepatitis B virus medicine, had been formally approved. The product was the first generic drug in the PRC that has completed the bioequivalence study according to the “Consistency of Quality and Efficacy Evaluation for Generic Drugs” (“Consistency Evaluation”) standard. The Group became the first enterprise which passed the Consistency Evaluation.
- Tuotuo, a medicine for lowering blood lipid, was among the first batch of drugs and the first generic drug of its kind that passed the Consistency Evaluation in the PRC.
- During the year, the Group has filed 33 clinical applications and 38 production applications. In 2017, 54 applications were granted clinical approval and 2 were granted production approval. Cumulatively, a total of 477 pharmaceutical products had obtained clinical approval, or under clinical trial or applying for production approval.

➤ Technological innovation recognized internationally

The R&D capability of the Group has been recognized internationally.

For example, Anlotinib, a new drug self-developed by CT Tianqing, has obtained two orphan drug qualifications for treating ovarian cancer and soft tissue sarcoma from the United States Food and Drug Administration (“FDA”) in December 2015 and June 2017, respectively. At present, the Group and its business partners are conducting phase IIa clinical studies on treatment for ovarian cancer and endometrial cancer with Anlotinib in the United States. At the same time, a phase III clinical study on soft tissue sarcoma is underway as well, which is an international multi-centers clinical trial, covering regions and countries such as Europe, the United States, Japan and South Korea. Clinical trial results of Anlotinib were released at a number of international academic conferences.

➤ Value the protection of patents

The Group also places major emphasis on the protection of intellectual property rights. It encourages its enterprises to apply for patent applications as a means to enhance the Group’s core competitiveness. During the reporting period, the Group has received 62 authorized patent notices (59 invention patents and 3 apparel design patents) and filed 337 new patent applications (308 invention patents, 10 utility model patents and 19 apparel design patents). Cumulatively, the Group has obtained 591 invention patent approvals, 13 utility model patents and 58 apparel design patents.

■ Improve intelligent production

The production plants of the Group’s principal subsidiaries are designed and constructed based on the international standards of the FDA and the EU Current Good Manufacturing Practices (“cGMP”). The Group adopts world-class equipment for drugs production which makes up an efficient and environment-friendly intelligent production line to provide essential hardware protection for stable product quality and safety.

➤ Adopt intelligent equipment

First-class equipment, leading technologies, high cleanliness production environment and strict internal control standards on quality all contribute to the stable, safe and reliable product quality of the Group.



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

➤ Promote lean production

The Group's principal subsidiaries have promoted lean production to reduce the resources in production and operating cost and make the production processes better align with the GMP requirements.

Case study:

In 2017, CT Tianqing fully implemented lean production with 5S site management, completed the AM (Autonomous Maintenance) part of the TPM (Total Productive Maintenance) program and achieved digitalised and indicator management of workshop production facilities by frontline staff. Meanwhile, emphasis was put on strengthening basic management, and operation standards including Lean Production and Management Manual and Production Management Manual were formulated and improved.

Its small-dose injection workshop was awarded "Five-star Site Management" by the Quality Management Association of Jiangsu Province for its refined production management and became the first five-star site in the pharmaceutical industry of Jiangsu.

➤ Newly-established projects

With more new products and new medicines coming onstream, the Group is actively conducting expansion and constructing new projects to meet production needs. The Group has started constructing new industrial park zones at Nanjing Economic and Technology Development Zone, Qingdao Economic and Technology Development Zone (Tuanjie Road) and Beijing Yizhuang Economic and Technology Development Zone in 2013 and 2015, respectively. The new industrial park areas will include engineering technical centers focusing on quality inspection, R&D of freeze-dried powder injections, small-dose injections, gel patches for external use, tablets and soft capsules and more than 10 medicine production line workshops. As the construction of the new industrial park zones are gradually completed and operation commences in 2018, the Group's R&D prowess and production capability in medicines would be significantly further bolstered.

■ Improve product quality management

The product quality management system of the Group covers all processes from products R&D to technological transformation and from materials supply to production, manufacturing and products circulation. With the implementation of internationalization strategies, the Group's principal subsidiaries have conducted international certification for various products. Continuous improvements are made on plant facilities, quality control and workmanship according to the international standards of cGMP of the European Union and FDA of the United States. In addition, we have actively conducted Consistency Evaluation and technological improvements to respond to the changes in the national medicine policies.

Case study 1:

During the reporting period, CT Tianqing engaged Cardinal Health, WhiteOak Group and Mids Pharma to conduct audit on the operation of the its quality management system, in preparation of obtaining certification of cGMP and FDA through practical drill and exercise.



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

Case study 2:

Quality control (QC) team activity is one of the production and quality system improvement activities currently conducted by CT Tianqing which has the largest scope and the most significant achievement. The QC team conducted technological reform activities such as equipment modification, technical innovation, maintaining stable quality and lowering cost and increasing effectiveness by applying theoretical and statistic tools of quality management.

During the reporting period, a total of 12 QC achievements obtained national awards for the pharmaceutical industry of the PRC. CT Tianqing was awarded as “Outstanding Enterprise in Quality Control (QC) Team Activities in the Pharmaceutical Industry of the Nation”.

■ Improve the availability of drugs

The Group strictly abides by relevant laws and regulations of the state and emphasizes customer services during the promotion of products. We have established an efficient business network and improved the efficiency of decision-making and professional promotion to improve the availability of drugs and services and help patients in more regions to have access to our products in more reasonable ways.

Case study:

CT Tianqing achieved digitalisation of all channels for medicines through internet technology. The medicine circulation and inventory information are timely and effectively obtained by collecting data and big data processing and analysis, which would also ensure the safety of the drug used. Through big data platform, clear and reliable information and record are available for every process from drugs’ production and leaving the factory to reaching the end-users. This enabled concurrent warning and post-analysis of the drug management system, and facilitated the provision of higher quality health service to patients.

The Group strictly complied with laws and regulations related to product safety of China such as Drug Administration Law and the Regulations for the Implementation of the Drug Administration Law, Product Quality Law, the Law on the Protection of Consumer Rights and Interests, and Good Manufacturing Practice for Medical Products, and it did not commit any significant non-compliance on product safety during the reporting period.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT



5.3 Anti-corruption

The Group has been following the codes of ethics of a pharmaceutical enterprise of “Healthcare and Patients Orientation, Integrity, Independence, Legitimacy, Transparency and Responsibility” and attached great importance to integrity building. Based on the business nature and actual conditions of the enterprise, we have established an appropriate regulatory system and internal control measures to curb corruption and fraudulent behaviours in any forms. Meanwhile, we actively infuse the staff with the integrity and law-abiding concept and require our staff to keep high ethical standards and strictly abide by current laws, regulations and relevant practice requirements.

Integrity, law-abiding and anti-corruption clauses with binding effects have been set out in the employment contracts of our staff. The staff manual also sets out the Group’s aspiration and guidance on preventing corruption and fraudulent practices by the staff. We encourage the staff to directly report any behaviors breaching professional ethics to the senior management or the Department of Human Resources. We will keep the information of the informers strictly confidential and ensure that the informers will not be discriminated or retaliated.

The Group’s principal subsidiaries have established scrupulous systems on the purchase of materials, which regulated the principles for selecting and evaluating suppliers and the approval procedures on purchasing. We make use of the bidding and tendering processes to ensure the fairness and openness of purchasing. For the sale of products, the enterprises have prepared detailed code of conduct on the promotion of drugs by the sales staff, which provided clear guidance on the communication and promotion activities of the staff with professionals on pharmaceuticals and health, academic specialists and other external parties to completely eradicate any inappropriate or illegal activities.

In addition, the Group has an internal audit department. While conducting regular and special audits, the internal audit department will supervise the implementation of anti-fraud measures and conduct in-depth investigations on any suspicious fraudulent cases.

During the reporting period, we have not found any material illegality or non-compliance with regulations or corruption acts.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

VI. CONTRIBUTION TO THE SOCIETY

As a responsible corporate citizen following the enterprise objectives of “benefit the country, benefit the general public and benefit the enterprise”, the Group provides the society with quality products and services and actively seeks solutions to social problems on health. It also devotes itself to consistently improving platforms for community work and seeking more appropriate community service programs and activities to contribute to the society.

■ Establish community service platforms and perform responsibilities of a corporate citizen

The Group's principal subsidiaries have made contributions to the community in recent years through donations to students, earthquake relief, local poverty relief and other charitable activities. Meanwhile, they have actively established and improved platforms for community work. For example, the Lianyungang CTTQ Charity Foundation, which was established with donation of CT Tianqing and its senior management, continued to care about the people's livelihood and the vulnerable groups, and carried out poverty alleviation, medical assistance and education assistance activities during the year.

Case study: Donations to students

In 2017, Lianyungang CTTQ Charity Foundation provided education subsidies of a total of RMB 500,000 to 177 students from Nanjing University, China Pharmaceutical University, Shenyang Pharmaceutical University and Nanjing Tech University.



■ Initiate Chinese Pharmaceutical Enterprise Social Responsibility Alliance

In September 2017, the second presentation ceremony of the Chinese Pharmaceutical Enterprise Social Responsibility Alliance – “Outstanding Chinese Pharmaceutical Enterprise Social Responsibility Projects 2016” was held in Chengdu. During the event, the “Tianqing Liver Disease Research Fund” was awarded “Outstanding Chinese Pharmaceutical Enterprise Social Responsibility Projects 2016”.

The aims of the Alliance, which is a non-profit organisation, lie in striving to enhance the social responsibilities of pharmaceutical enterprises, improve the social responsibility image of pharmaceutical enterprises and promote the integration of social responsibilities of enterprises with the competitiveness of Chinese enterprises. It will unite various stakeholders to initiate and conduct a series of corporate social responsibility activities, and to promote the development of Chinese pharmaceutical industry.

2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

■ Support medical programs and promote standard diagnosis and treatment

The Group continues increasing R&D investment. While accumulating more diversified product reserve and technical resources, it has also expanded the service coverage. With the joint efforts of partners in the pharmaceutical industry, it conducted many programs to promote the development of the Chinese medical treatment and healthcare industry.

In 2017, CT Tianqing provided strong supports to the “National Administration on Rational Use of Drugs for Gastrointestinal Tumors at Grass-root Medical Institutions”, the “Surgery Skills Program” (美刀項目) and the “Tianqing Blood • Zijin Forum” (天晴血液 • 紫金論壇) to promote standard diagnosis and treatment of tumors and hepatic and gall diseases by clinicians, the in-depth communication between authoritative experts and young physicians in the medical industry and share the results in the development of clinical medicine.

Case study:

I. National Administration on Rational Use of Drugs for Gastrointestinal Tumors at Grass-root Medical Institutions

In order to respond to the government call and promote rational use of drugs and standard diagnosis and treatment, CT Tianqing established a group with about 40 experts in gastrointestinal tumors to conduct 32 tour lecturings in 19 provinces and provide training on medical staff.

II. Surgery Skills Program

The program was hosted by the China Branch of the Chinese Chapter of the International Hepato-Pancreato-Biliary Association and co-organized by CT Tianqing. It is positioned to be a high-end, professional and authoritative multidisciplinary comprehensive communication and study platform for hepato-pancreato-biliary surgeries. The program included continuing education, academic conferences and physicians trainings, and in particular, included activities such as surgery skill forum, surgery video competition and surgery skill training, of which, the surgery video competition was held for the third time since it commenced in 2014.

III. Tianqing Blood • Zijin Forum

In May 2017, CT Tianqing held the second “Tianqing Blood-Zijin Forum” jointly with Beijing Bethune Charitable Foundation. The forum invited over 60 renowned experts to be the hosts, speakers and discussion guests, and it was broadcasted live over the internet. The forum aims to promote the academic development of hematology, enhance the diagnosis and treatment standard of physicians and standardise the treatment of blood related cancer by leveraging on the academic advantage of the experts.

IV. Wei Qing Ke Dai – Bethune • Qingweike® Charitable Donation Project (唯晴可待 – 白求恩 • 晴唯可® 公益捐助項目)

It is a charitable project initiated by Beijing Bethune Charitable Foundation with CT Tianqing donating medicine. It aims to help patients with myelodysplastic syndrome who need chemotherapy, providing them with more sustaining and effective medical treatment, reducing the pain they suffer as well as reducing their financial burden and enhancing their quality of life.

The first cycle of the project covered about 240 project hospitals in 17 provinces/autonomous regions involving about 300 project doctors. It helped patients in approximately 1,700 cases/times and donated medicine of approximately 15,000 injections.



2017 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

■ Focus on hepatitis and improve the prevention and treatment of hepatitis in China

CT Tianqing, a subsidiary of the Company, has been a leader in drugs for hepatitis in China. Besides providing patients with safe and effective products, it also takes active steps for improving the prevention and treatment of hepatitis in China. It has launched the “CTTQ Liver Research Fund” and the “Hepatitis B follow-up and clinical research platform in China” since 2011 to create more social benefit in the diagnosis and treatment of hepatitis.

Case study:

1. CTTQ Liver Research Fund

Since its establishment in 2011, the research fund has attracted much attention. Cumulatively, it has received 1,523 project applications, funded 183 projects and supported 84 projects with research findings published in 139 articles. Currently, the research fund covers 29 provinces and municipalities throughout China and has become a scientific research fund program with a large number of projects applied, big impact and large coverage for hepatitis in China.

2. Hepatitis B follow-up and clinical research platform in China

The platform was initiated by the National Health and Family Planning Commission under the coordination of the Chinese Foundation for Hepatitis Prevention and Control. The Hepatology Branch of the Chinese Medical Association is responsible for its operation and CT Tianqing provides exclusive support to it. It strives to promote standardized diagnosis and treatment among Chinese Hepatitis B patients and the administration of follow-up processes and improve the diagnosis and treatment of Hepatitis B in China.

The platform can send regular follow-up reminders to Hepatitis B patients on record and remind them to make subsequent follow-up visits at hospitals. It can help patients obtain more standardized diagnosis and treatment and health education and prevent or slow down development of diseases. As at the end of 2017, 50 hospitals participated in the platform. Approximately 167,000 cases were recorded in the system and more than 577,000 follow-up visits were conducted. After six years of development, the platform has obtained relatively complete and representative follow-up information of Hepatitis B patients in China, which provides a strong information support for the prevention and treatment of Hepatitis B in China.

In 2017, relevant personnel of the platform delivered reports and made poster communications in a number of annual conferences of Asia-Pacific associations of liver diseases.