7th BRICS Health Ministers Meeting and High Level Meeting on Traditional Medicine Held in Tianjin

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On July 6, the BRICS Health Ministers Meeting and High Level Meeting on Traditional Medicine was convened in Tianjin. President Xi Jinping sent a congratulatory letter to the meeting. He pointed out that diseases respect no national boundaries. The hi-level dialogue mechanism has been established to deal with common public health challenges and facilitate health cooperation between BRICS countries. The meeting will facilitate exchange of experience between BRICS and other countries, help reach consensus and align the efforts to deal with global health challenges. As an important carrier of outstanding traditional culture, traditional medicine plays a critical role in facilitating mutual learning between civilizations and protecting people’s health. TCM serves as an excellent representative of traditional medicine, winning extensive recognition thanks to its distinct strengths in prevention, treatment and rehabilitation of diseases.

The Tianjin Communique issued at the meeting was designed to enhance the role of BRICS in strengthening global health governance, sharing experience in improving health system and service quality and achieving sustainable development goals related to health. According to the Communique, BRICS countries will be committed to working together more closely, protecting & improving people’s health, realizing the 2030 sustainable development agenda and continuing health cooperation under the technology working group and BRICS Health Cooperation Framework of Strategic Health Programs. In line with the Communique, BRICS countries share useful experience in improving health system and service quality; support cooperation between BRICS supervision agencies and agree on jointly advancing R&D of innovative medical products; agree to set up TB research network; recognize the importance of children’s right to survival; acknowledge the significance of persistent disease vigilance of the international community and its response; acknowledge the serious threat of antibiotics resistance to public health and economic growth; promise to take common actions and maintain leadership in the prevention and treatment of AIDS; become aware of the need to apply more ICT in health services for their better access.

The meeting approved the BRICS Joint Declaration on Strengthening Traditional Medicine Cooperation, which highlighted the important role of traditional medicine in health areas. According to the Declaration, the attendees confirmed that traditional medicine serve as a resource of primary health care, enhance the universal access and affordability of health services and help improve their outcomes.

(Source: Xinhua News Agency July 6, 2017)
On July 17, Vice Minister Huang Wei met with Álvaro Toubes Prata, Vice-Minister of Science, Technology, Innovations and Communications of Brazil, who came to China for the 5th BRICS STI Ministerial Meeting in Hangzhou.

Vice Minister Huang said that bilateral cooperation boasts strong complementarity and huge potential for development. The two sides have conducted fruitful cooperation in space technology, agriculture, husbandry and forestry under the inter-governmental cooperation mechanism of Sub-committee on Science and Technology of the China-Brazil Hi-level Cooperation Committee and China-Brazil Hi-level Dialogue on Science, Technology and Innovation. Vice Minister Huang proposed that the two countries focus on building platforms, setting up joint labs, strengthen industry-academia-research cooperation in science parks for the benefit of the two peoples.

Vice Minister Prata spoke highly of the achievements China has made in STI, and expressed the willingness to strengthen bilateral S&T cooperation with China under bilateral and multilateral mechanisms.

(Source: MOST, July 18, 2017)
Special Project on Health STI during 13th Five-year Plan
Issued by MOST and other 5 Departments

To put people’s health at the prioritized strategic position, enhance the health STI capacity and markedly strengthen the supporting and leading role of STI in better public health and health industry development, MOST, NHFPC, General Administration of Sports, China FDA, SATCM and Logistic Support Department of Central Military Commission jointly issued the Special Project on Health STI during 13th Five-year Plan (hereinafter referred to as the “Project”).

The Project confirmed basic principles of led by innovation, oriented to demand, open integration and institutional innovation.

The Project put forward four specific goals:
1. Improve STI capacity markedly
2. Effectively transform S&T achievements
3. Constantly build better platforms of innovation bases
4. Underpin development of health industries

The Project deployed 12 major missions:
1. Strengthen applied and basic research
2. Advance cutting-edge technical innovation
3. Improve disease control and prevention
4. Protect health of targeted groups of people
5. Develop medical health products
6. Develop new-type health service technologies
7. Strengthen control of health risk factors
8. Facilitate science popularization
9. Advance TCM modernization
10. Strengthen building of innovation bases & platforms and capacity building
11. Facilitate transfer and translation of research findings
12. Build network of international cooperation

(Source: MOST, June 13, 2017)
Special Project on TCM STI during 13th Five-year Plan Issued by MOST and SATCM

In order to accelerate the enhancement of TCM STI capacity, improve people's health and facilitate health industry development, MOST and SATCM jointly issued the Special Project on TCM STI during 13th Five-year Plan Issued by MOST and SATCM (hereinafter referred to as the “Project”).

The Project has confirmed four basic principles: inheritance and innovation, orientation to demand, openness and coordination, and leading development.

The Project also proposed overall objective and specific missions. By 2020, we should build a research model and technology system better in line with features of TCM inheritance and innovation; systemically summarize, explore and inherit academic experience of 100 well-known TCM experts; set up 1500 data and resource information bases of TCM basic documents and open them for sharing; improve the TCM treatment of 8-10 major diseases and 3-5 difficult and complicated diseases; refine the international standards of TCM, form no less than 50 pharmacopeia standards & 100 industry standards and accomplish registration of 5-10 Chinese patent medicines in the US and Europe; map out a set of technical standards of treatment methods with ethnic characteristics and formulate 10-15 programs and guidelines of ethnical clinical treatment.

The Project has deployed 9 major tasks: develop frontier key technologies and methods, further inheritance and innovation on TCM theories, improve TCM treatment and prevention of major diseases, develop TCM health service technologies, facilitate protection and value increase of TCM resources, strengthen TCM R&D technology and product development, advance TCM standardization and internationalization, strengthen inheritance and innovation of ethnic medicine, build TCM innovation network and supporting system.

(Source: MOST, June 9, 2017)
To accelerate the development of medical equipment industry, meet the health demand of the people and build a better medical health service system, MOST issued the Special Project on Medical Equipment STI during 13th Five-year Plan (hereinafter referred to as the “Project”).

The Project has set up 5 principles:
- Accelerate innovation and transformation
- Focus on major needs
- Strengthen industrial support
- Enhance brand cultivation
- Accelerate industrial cluster

The Project set the following 3 specific goals:

1. **In cutting-edge technologies**
   - We should make breakthroughs in 1-3 original innovation technologies, 10-20 frontier key technologies and bring about over 300 core patents.

2. **In innovation product R&D**
   - We should ensure thorough domestic manufacturing of hi-end major products, research into & develop 10-20 cutting-edge innovation products, and guide the development of new-type medical products and health service technologies, including scanning for early warning, early diagnosis, minimally or non-invasive treatment, targeted treatment, AI diagnosis, in-operation precision imaging, smart medical care and prevention of diseases by TCM.

3. **In competitiveness enhancement**
   - We should focus on developing 8-10 large medical equipment groups that are competitive home and abroad, set up 8-10 relevant industrial clusters, cultivate 80-100 innovative hi-tech enterprises with indigenous core IPR and certain development scale, establish and improve the national system of medical equipment standard, testing and evaluation, set up demonstration and promotion system of innovative medical equipment, conduct demonstration application and equipment upgrading in 10,000 basic-level medical agencies, ensure 30-40% market share of certain major products and comprehensively improve the international competitiveness of our medical equipment S&T industry.
The Project deployed 5 major tasks

- develop frontier key technologies and lead innovation in medical equipment
- facilitate R&D of major products and break bottlenecks of core components
- highlight demand-oriented application and strengthen demonstration and promotion
- optimize layout of platforms and bases, and facilitate innovation capacity building
- pool factors of innovation and entrepreneurship and boost development industrial clusters

(Source: MOST, June 12, 2017)
The health industry is an industry for safeguarding and protecting health, relating to products and services of whole life cycle and health in the whole process. In order to coordinate the layout of and accelerate the development of health industry S&T, build new engines of economic growth and lead the transformation of health service model, MOST, NDRC, MIIT, NHFPC, GAS and China FDA jointly issued the Special Project on Health Industry STI Issued during 13th Five-year Plan (hereinafter referred to as the “Project”).

The Project has set up 4 principles:

1. First is driven by innovation
2. Second is led by high-end products
3. Third is orientation to livelihood
4. Fourth is adherence to standardized development

The Project proposed 3 specific goals:

1. **Technology breakthrough**
   - We should make breakthroughs in new drug discovery, high-end medical equipment, targeted health interference and 10-15 key generic technologies, and develop 20-30 frontier technologies.

2. **Product development**
   - We should mainly develop 8-10 originally innovative medicines, 10-20 frontier innovative medical equipment and 50 hi-end health products.

3. **Industry cultivation**
   - We should facilitate cultivation of new-type health industries, guide and develop new-type medical health services, cultivate 5-10 health enterprise clusters with internationally influential brands, and set up 10-15 parks of health industries.
Introduction to Major Projects

Major innovative drug
Hi-end medical equipment
New-type health product

Advance development of industry clusters, strengthen technology guidance, resource integration, proliferation development and open innovation, cultivate a batch of branded enterprises with solid foundation and innovative thinking, and develop new carriers of health industry clusters.

Focus on building platforms, optimize allocation of S&T resources and facilitate open sharing and efficient use of S&T resources.

Guide and develop four types of services

Develop three types of products

The Project deployed 4 specific tasks

- New-type diagnosis service with the focus on precision
- Coordinated medical service with the focus on digitization
- Smart medical service with the focus on smart development
- Medical health integrated service with voluntary health as the orientation

(Source: MOST, June 14, 2017)
Research Progress made in Health S&T

Since the inception of the 12th Five-year Plan, we have made a series of research progress in health S&T, improved the STI system, enhanced the research capacity, brought about constant S&T achievements and strengthened the role of STI in ensuring health.

In basic research, have improved our standing in international biology frontier S&T, namely stem cell research, genome mapping, vaccine design, structural biology, and tumor immunotherapy etc, and brought about original innovation outcomes in disease mechanism and new target discovery, which have laid a solid foundation for development of our health S&T. In disease control and prevention, we have formulated and promoted treatment guide, standard norms and prevention strategies against 10 diseases including AIDS, hepatitis, malicious tumor, cardio- and cerebrovascular diseases and chronic obstructive pulmonary disease. Major Epidemics like Ebola, MERS, Zika Virus and yellow fever have been effectively controlled. We have improved the system of birth defect prevention technologies, established nationwide testing and supervision system of infectious disease source and reached international advanced level in the definite diagnosis of unknown pathogens. In new drug discovery, we have seen remarkable progress in the transformation of major medicine varieties, constantly improved the system for new drug innovation, reached international advanced level in pre-clinical medicine evaluation, new-type medicine and antibody preparation, won approval to conduct clinical research in 214 frontier innovative products including small molecular targeted therapy, new-type antibody and tumor-immune treatment, and also won approval to produce 24 Type-I innovative drugs. In prevention and rehabilitation, we have gone deeper in the research of environment and health, interference of health risk factors and health science popularization, made initial outcomes in pension service IT and R&D of rehabilitation tools. In platform building, we set up 32 national research centers of clinical research, a batch of national clinical major disciplines and 5 national centers of translational medical sciences. All these have initially put in place a multi-disease coordination innovation network.

(Source: MOST, June 13, 2017)
A Sound Foundation Laid for Health Industry S&T Development

We have already laid a solid foundation for basic & frontier research, platform & base construction and talent team building in developing health industry, with S&T strengths constantly enhanced. During the 12th Five-year Plan period, we have won 85 certificates of new medicines, researched into innovative varieties of lctinib and chidamide, and completed upgrading and transformation of a batch of large variety drugs to meet the demand of the general public for drug use. We have built nearly 300 platforms of various kinds and a national drug innovation system with platforms and technology systems as the core, and enhanced markedly our strengths in new drug R&D. Great progress has been made in domestic manufacturing of high-end medical equipment like MRI, color ultrasound, CT, PET-CT and radiotherapy. The rehabilitation assistance device industry has been constantly enlarged, and the market share of products with our own IPR has been increased remarkably. New-type medical service technology development has been accelerated, namely genetic testing, stem cell therapy, immunotherapy and heavy ion radiotherapy. Rapid breakthroughs have been made in technologies of telemedicine, smart health care, smart aged care, and scientific body exercising, which have laid a solid foundation for the new business format of health care service.

(Source: MOST, June 14, 2017)
TCM Development Constantly Modernized

In recent years, TCM development has been modernized, with innovation breakthroughs constantly emerging. The database and knowledge base of TCM classics and documents have taken initial shape, and a batch of well-known senior doctors have been organized for modern medical inheritance studies. The understanding on original TCM theories have been furthered, including visceral manifestation, specificity of acupoints, collateral disease, TCM property and component compatibility. A number of TCM diagnosis and rehabilitation devices have been developed. Positive progress has been made in TCM clinical research of major chronic diseases of cardio- and cerebrovascular diseases and diabetes and major infectious diseases like H1N1, and the curative effect of TCM disease prevention and control for 16 types of major diseases have been evidence-based. Breakthroughs have been made in endangered and rare TCM breeding technology and planting technology, the standardized planting technique of common TCM has been further developed, and the TCM quality control has evolved from covering single variety to comprehensive varieties. Important breakthroughs have been made in bottleneck issues of discovery, preparation and safety evaluation, the technique of new TCM preparation has been improved constantly, and more and more technologies have been integrated into TCM products. We have also built a number of national engineering (technology research centers, national TCM clinical research bases, engineering labs and enterprise technology centers as well as 25 distinct bases of TCM modernization technology industry (planting). TCM has been going global in a faster pace, 4 TCMs have been approved by US FDA to conduct phase-III clinical research, 4 Chinese patent medicines have been registered by EU for research, and a number of TCM varieties have been incorporated into US Pharmacopeia and EU Pharmacopeia. In 2015, Researcher Tu Youyou won the Nobel Laureate, which fully showed the scientific value of TCM.

Led by STI, modern TCM industry has thrived and the system of common TCM production has been basically established. The number of varieties valuing more than 100 million yuan has increased to 500, a batch of backbone enterprises have been cultivated, and the TCM industrial gross value has soared from 23.4 billion yuan in 1996 to 786.7 billion yuan in 2015, with its share in medicine industry gross value increasing from 1/5 to 1/3. TCM products and services have been going global in a faster pace, and TCM big health industry has exceeded 1 trillion yuan, playing a critical role in rural income increase, regional development and medical reform.

(Source: MOST, June 9, 2017)