IC2PerMed

PAVING THE WAY FOR EU-CHINA COLLABORATION IN BIOBANKING

September 2023

Introduction of the topic and its relevance

There is no question that progress in the health sector, and more specifically in the area of Personalised Medicine (PM), is in many cases only possible when institutions and scientists join forces and tackle pressing issues together. It is therefore essential that collaborations are set up and successfully carried out. This is one of the foundations for achieving the goal of the IC2PerMed project, namely to converge towards a common approach of PM research, development, innovation and implementation with Chinese and European stakeholders.

To be able to answer the urgent questions of our time in the health sector for a steadily growing world population, it is necessary to have not only a large number of biospecimens and, in particular, their associated data, but also a certain heterogeneity of these (e.g. with regard to ethnic groups, disease characteristics, etc.). Accordingly, researchers around the world are largely dependent on collaborations to gather enough source material (biospecimens and/or data) so that their analyses have sufficient statistical power and thus significance. However, collaborations can only be carried out successfully under certain conditions that are accepted by all collaboration partners. Accordingly, it is essential, especially in the multidisciplinary field of biobanking, to create framework conditions for all sub-aspects (inter alia data, ELSI, quality), which are necessary, for example, for a collaboration between China and the EU.

What is biobanking?

It is the process of acquisitioning and storing, together with some or all of the activities related to collection, preparation, preservation, testing, analysing and distributing defined biological material as well as related information and data and is performed by a biobank which is a legal entity or a part of a legal entity (source: ISO 20387:2018).

Analysis of the current situation

At the end of 2021 and the beginning of 2022 BBMRI-ERIC, the European Research Infrastructure for biobanking and biomolecular resources, hosted four Virtual Round Tables (VRTs), each with a thematic focus related to biobanking. The VRTs were organised in collaboration with the European and Chinese IC2PerMed project partners and intended to better understand the current situation in the field of biobanking, to analyse relevant sub-aspects and in particular the status quo regarding these necessary framework conditions. During the VRTs, short presentations of European and Chinese experts enabled fruitful discussions, leading to a better understanding of the status quo and the identification of facilitating and inhibiting aspects (see **Table 1**) for establishing China-EU collaborations in the field of biobanking.

TABLE 1: overview of facilitating and inhibiting aspects identified during four VRTs

Facilitating aspects	Inhibiting aspects
Similar biobanking setting in the EU and China: mainly healthcare-integrated biobanks supporting many types of contemporary research like omics technologies (e.g. genomics) and PM	Increasing protectionism in the EU and China regarding data; growing lack of trust in global data transfers
Project initiation by funding agencies/initiatives in the EU (e.g. FP7, Horizon 2020, Horizon Europe funding programmes) and China (top-down approach to foster collaboration)	Many national regulations and standards regarding healthcare data and public health data co-exist → no uniform regulation; complicates cross-border data exchange
Establishment of Joint Research Structures, exchange programmes, joint educational programmes and/or PhD programmes by institutions or individuals (bottom-up approach to foster collaboration)	
Value and potential of (big) data was recognized in the EU and China and appropriate infrastructures are being piloted/ established	
General Data Protection Regulation (EU) and Personal Information Protection Law (China) in place: different key principles underlying the respective laws	
Successful international collaboration in the field of standardisation (e.g. in ISO Technical Committees)	
Joint effort to maintain uniform quality standards (e.g. according to biobanking standard ISO 20387) in European and Chinese biobanks → ensures high quality of biospecimens and associated data and comparable biobanking processes	
Exchange of experiences and sharing of best practices takes place to a certain extent; small number of cross-border training offers/initiatives in biobanking are existing	

Conclusion to this analysis

As shown in **Table 1**, the VRTs identified several facilitating aspects for China-EU collaboration in the field of biobanking. Few examples of existing collaborations have been mentioned and in these cases great efforts are being made from both sides to either strengthen these or even start new ones. But even if the facilitating aspects seem to predominate, there are also strongly inhibiting factors regarding legal requirements for biospecimen and/or data exchange and the mutual acceptance of laws, regulations and standards. In the context of the VRTs, it has become clear that at some levels there is still a lack of decisive agreements on how practical implementation can take place and thus enable collaboration. Especially in cross-border biospecimen and/or data exchange, such joint policies and a common understanding would be essential for future health research and PM so that the existing strict, protective measures do not disable cross-border collaborations on advanced technologies completely.

Recommendations

Based on the status quo and the facilitating as well as inhibiting factors in the field of China-EU biobanking collaboration identified in the VRTs of the IC2PerMed project, the following recommendations can help to facilitate the mutually beneficial China-EU collaboration in the future:

- Developing joint policies and building a common understanding to enable cross-border biospecimen and/or data exchange
- Further promoting and developing (big) data centres/spaces needed to support the use of health data
- Providing funding by the EU and China for future collaborative projects in the field of health research and in particular for PM
- Promoting the application of FAIR (Findable, Accessible, Interoperable, Reusable)/ FAIR-Health principles
- Incentivising the implementation of biobank-relevant international standards (inter alia biobanking standard ISO 20387) in biobanks to promote international harmonisation and ease collaboration
- Supporting institutions, initiatives and individuals to prepare and offer (cross-border) trainings, foster community exchange and/or promote health and digital literacy

IC2PerMed Partners

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 874694