

### **III. Research Proposal Content (in Chinese or English):**

#### **(Content should be no more than 30 pages, including up to 5 pages of references)**

Please use "DFKai-SB" font for Chinese text and use Times New Roman, Arial, or Calibri font for English text. The font size should not be smaller than 12, and line spacing should be "single spacing". Margins (top, bottom, left, and right) should be no less than 2 cm. If there are key images in this research proposal, the resolution should be no less than 300 dpi.

1. **Background of the Research Proposal.** Please provide a detailed description of the disease to be studied or addressed by this research proposal, including its originality, importance, anticipated impact, and the current status of related research both domestically and internationally. Additionally, describe the novelty, competitive advantages, key supporting evidence, and review of important references.
2. If a medical center that previously participated in the "Build up a big biomedical database for translational research" project intends to use the original cancer type for the current "Value-added Biomedical Data for Disease-oriented Applications" (new recruitment) project, it must clearly specify the differences between the original project and the current proposal and articulate the clinical and research value of the newly recruited cases.
3. **Specific Objectives**
4. **Preliminary Research Achievements.**
5. **Research Methods, Process, and Implementation Schedule**
  - (1) **Database:**

The types of diseases intended for dataset build-up, data quality, scope, scale, and completeness. Specify whether the data conforms to known international standard formats, whether it is structured medical data, and if there are mechanisms for ensuring data correctness during collection, including analysis and validation. Clinical data shall include "genetic data," "medical imaging," "digital pathology," and "structured electronic medical records." Each year, data for at least 80 patients with a specific disease must be constructed, and follow-up data for cases uploaded in the previous year should be updated in the following year.
  - (2) The project must provide a detailed description of how biomedical data will be structured and how quality control will be implemented.
  - (3) Planning and approach to manage the collected biomedical data into the hospital's Human Biobank, commitments for subsequent data sharing mechanisms, as well as planning approaches from technical or regulatory aspects, etc.
  - (4) Standards and planning for patient recruitment. Recruited patients must sign (1) the IRB informed consent form designed for this project, and (2) the informed consent form of hospital's Human Biobank.
  - (5) Planning and methods for regular data upload to the National Center for High-Performance Computing.
  - (6) Requirements and planning for data security and personal data protection by the applicant

Value-added biomedical data to disease-oriented applications

organization

- (a) Planning for data security firewalls (including file management and personnel operations).
- (b) Considering the practical operations of each applicant organization, it is recommended that the applicant organization provide supporting documentation or certification for planned de-identification techniques, including but not limited to ISO 29100/29191, CNS29100-2, or ISO 20889.

(7) Anticipated challenges and the corresponding solutions.

6. Expected Tasks and Outcomes.

(1) Please List by Year:

The number of new cases uploaded each year, the planning for case follow-ups in the following year, including the project's phased milestones and endpoints by year.

Table: Phased Milestones and Endpoints

Year	Phased Milestone	Checkpoint	Endpoints
114			
115			
116			
117			

Note: Phased milestones and final endpoints should be specific and achievable outcomes that can be evaluated with quantifiable indicators or specifications

(2) Planning for promoting practical clinical applications.

(3) Other anticipated impacts or contributions in terms of academic research, clinical applications, and social influence.

7. If there are similar with ongoing or proposed projects (including those with NSTC and other institutions), please explain whether they overlap and their relevance.