ELP Consortium Biobank:
A New Strategic Model for Harmony to Bank Research Resources of Cohort Study

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Phase 1
3 Milestones: Quality -> Utilization -> Annotation

Phase 2
Explore strategy for developing biorepository from the initial ideas through to research, instead for funded projects.

Biobanking in China: From Concepts to the Realization - Rethinking the way of biobanking in China for research
Hot Topics

- Integration
- Sharing
- Alliance
1. Well-Annnotated Biospecimen
2. Interoperability
3. Heterogeneity
4. Integration
5. Sharing
6. Standardization
What should be done?

1. Make Resources Elements Compatible and Usable
2. Be Ready for Integration and Sharing
3. Pave the way and open the door for Integration and Sharing
To study the effects of genetic, environmental and behavioral factors on reproductive health, pregnancy outcomes, child growth, development and risks of diseases.

- preconception
- pregnancy
- infancy
- childhood
- adolescence

- infertility
- miscarriage
- prematurity
- fetal growth restriction, stillbirth
- birth defect
- metal retardation
- asthma, ADHD
- autism, obesity
- precocious puberty
- mental, behavioral & endocrine disorders
Preconception:
- Consent
- Interview, sample
- Partner
- Telephone follow-up

Early:
- Consent
- (≤ 16 weeks)
- Interview
- Sample
- (22-28, 32-36 wks)
- Interview
- Sample

Mid, late:
- High risk pregnancy

Birth:
- Physical measures chart abstraction
- Samples

Samples:
- Blood, urine
- Blood, urine
- Blood, urine, hair
- Cord blood, placenta, blood spot, father buccal swab

Environmental sampling:
- Diet, nutrition, environment questionnaire

Hospital:
- Environmental sampling
- Diet, nutrition, environment questionnaire
42 day:
- Postpartum health
- Feeding, habit
- Physical measure
- Neonatal diseases

6-month:
- Feeding, habit
- ASQ
- Physical measure
- Disease history

12-month:
- Feeding, habit
- environment
- ASQ
- Physical measure
- Disease history

24-month:
- Feeding, habit, environment
- ASQ, M-CHAT
- Intelligence test
- Physical measure
disease history

Hospital

Sample

Psychology & behavior
- Family environment

Blood, urine, nail

Psychology & behavior
DOHaD-based ELP

- Focus on the first three years of life starting from furtialization, ELP (short for Early Life Plan) is a longitudinal initiative to explore the early life programming and developmental disease susceptibility.
- Prioritize multiple resources of the hospital and develop it into an alliance hospital system.
Department of Gynecology
Department of Obstetrics
Department of Neonatology
Department of Pediatrics
Department of Pediatric Surgery
Department of Medical Diagnostics
Department of Pathology
Department of Clinical Imaging
80% vs. 20% Rule:

Meet the needs for 80% of Users

Core Resources

Clinical Speciality

Core + Subjects Specific

Customized

Workflows and Team
Strategy, Design, Refactoring

Scientific
1. Prioritized Resources
2. Focus on Usability

Feasibility
1. Minimize Interruption
2. Workflow-driven

Sustainability
1. Cost-efficient
2. Long-term

Method
 Based on SBC workflow and model;

 Recruit those who register in the hospital;

 Collect additional data besides clinical data;

 Least to interrupt daily clinical practice.
1. Recruitment Criteria: $\text{ELP} > \text{SBC}$

2. Cost for Management: $\text{ELP} < \text{SBC}$

3. Details of Collection: $\text{ELP} < \text{SBC}$

4. Follow-up Intensity: $\text{ELP} < \text{SBC}$

5. Diversity and Usability: $\text{ELP} > \text{SBC}$

6. Etiology and Disease: $\text{ELP vs. SBC}$
1. Alliance
2. Centralized
3. Minimal Dataset
4. Data Harmonization for Sharing
Key Elements:

1. Harmonized Collection
2. Own the Individual Resources
3. Coding system-based Surveillance
4. Alliance Contribution for Sharing
Summary

1. We need to apply strategic method to develop Biorepository

2. Harmonize collection process before we share what is built

3. Strategic Model:
   Strategy -> Design -> Refactoring -> Applicable to Alliance Member
Thank you!