

Update on Biomarker Data Collection: CHARLS Wave 3

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Collection

- **Field work: July 2015 – September 2015**
- **Type of specimen collected**
 - Venous blood was collected by nurses or phlebotomists from local hospitals
 - 2 mL tube for complete blood cell count (CBC) test
 - 2 mL tube for glycosylated hemoglobin (HbA1c) test
 - 6 mL tube, processed to obtain plasma and buffy coat

Collection

- **Location for blood collection**
 - **Centralized locations: 94%**
 - **Home: 6%**
- **Response rate for venous blood collection: 63%**
- **Fasting specimens: 85%**

Processing

- **Venous blood specimens were processed into plasma and buffy coat in a median of 78 minutes, then frozen under -20°C until shipment**
- **Whole blood for HbA1c was stored under 4°C until shipment**

Shipping

- Plasma, buffy coat, and whole blood specimens were picked up by a cold chain company within a median of 5 days and shipped to the central storage facility in Beijing with dry ice
- Median shipping duration: 2 days
- Independent temperature monitoring during shipment
 - 92.0% were consistently below -40°C
 - 5.4% had highest temperature between -40°C and -20°C

Bioassay Selection

- **Specific biomarkers measured**
 - **Whole blood**
 - Complete blood cell counts (CBC)
 - Glycosylated hemoglobin (HbA1c)
 - **Plasma**
 - Glucose
 - Lipid panel (total, HDL-C, LDL-C, triglyceride)
 - High sensitivity C-reactive protein (hsCRP)
 - Blood urea nitrogen (BUN) and creatinine
 - Cystatin C
 - Uric acid

CBC Test

- **CBC Test**
 - Measured on automated analyzers at local hospitals or town/village health centers
 - Median duration from blood collection to testing was **107 minutes**

Other Bioassays

- **Laboratory for other bioassays: KingMed Diagnostics**
 - Largest third-party clinical laboratory system in China
 - Alliance partnership with Quest Diagnostics
 - CAP and ISO 15189 certifications
- **Bioassay work: July 2015 – October 2015 (compared to 10 months for CHARLS wave 1)**
- **Specimen storage time in -80°C freezers before assays**
 - Median for HbA1c assay: 34 days
 - Median for plasma-based assays: 53 days
- **Specimens were shipped to KingMed laboratory via a cold chain**

Other Bioassays

- **The KingMed laboratory conducts quality control daily**
- **Inter-assay CVs were 2% to 3% for HbA1c, lipid panel, BUN, creatinine, and uric acid**
- **Inter-assay CVs were approximately 5% for hsCRP, cystatin C, and glucose**

Thank You!

