

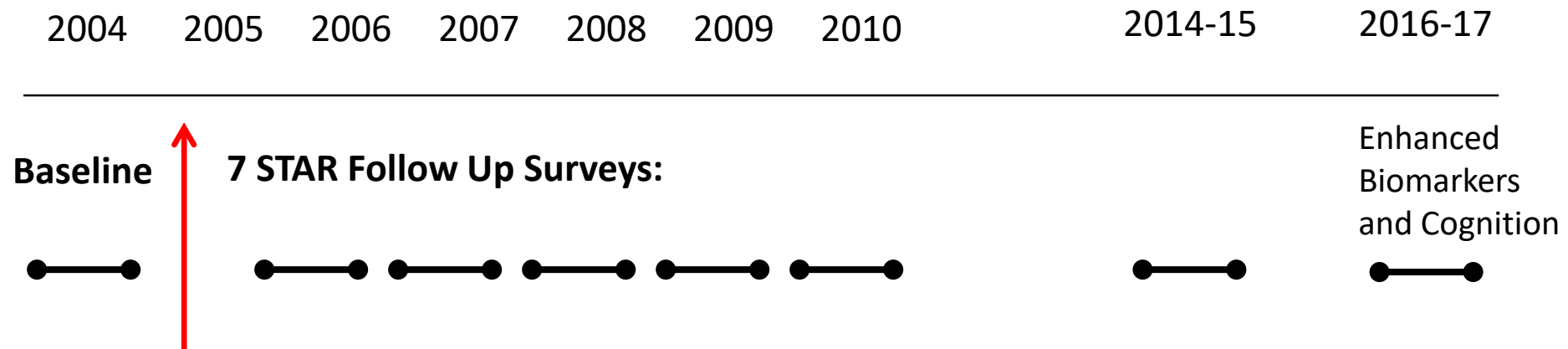
# Study of the Tsunami Aftermath and Recovery (STAR)



Elizabeth Frankenberg & Duncan Thomas

Longitudinal survey of individuals, families, and communities

Indonesia: before and after the 2004 Indian Ocean tsunami



**Baseline:** N~26,000, ages 0-80+

**96%** of survivors interviewed at least once, original communities (N=487) span continuum of damage

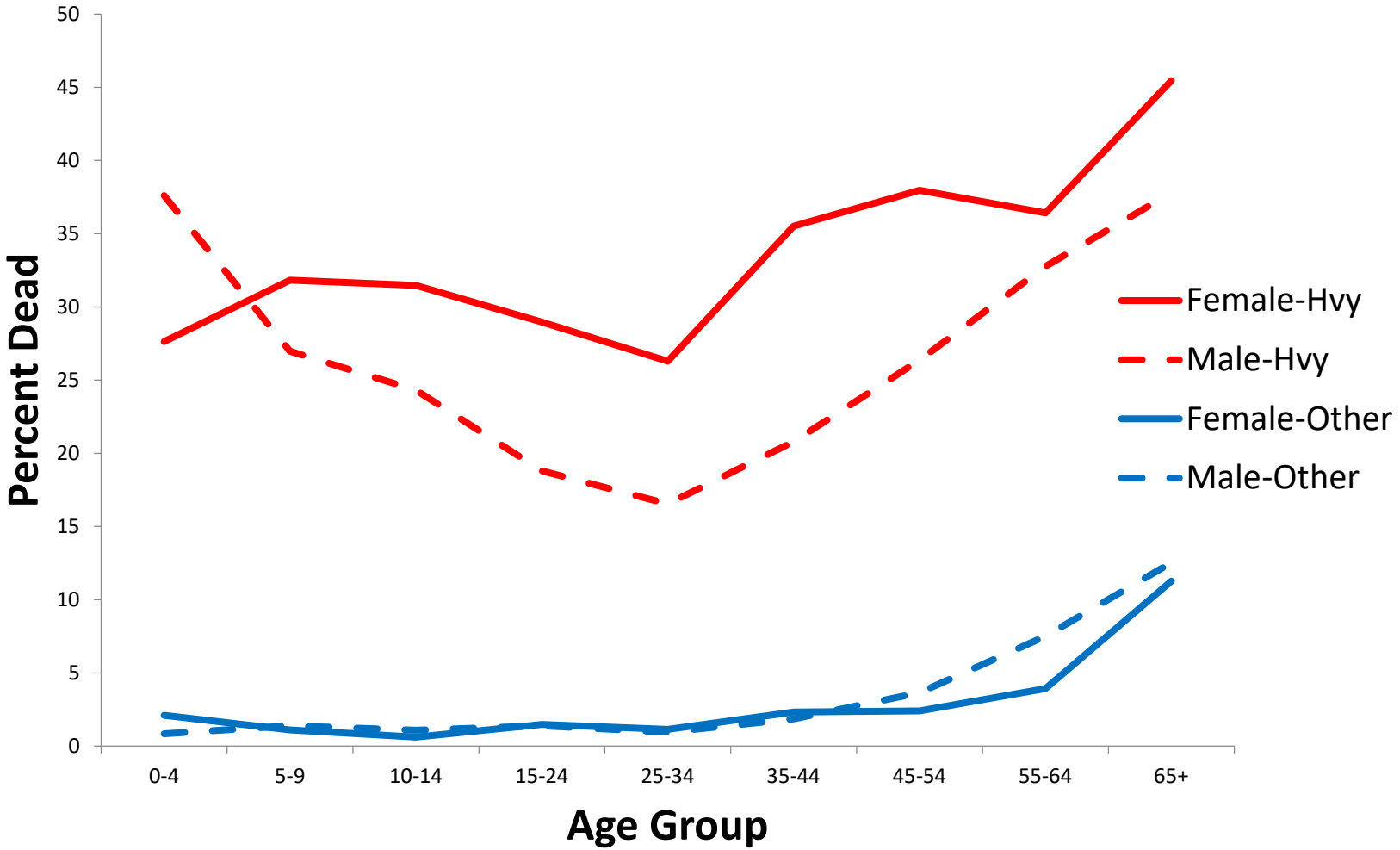
**Biological components:** height, weight, blood pressure, Hb, dried blood spots (hsCRP)  
subsample: HbA1c, hsCRP, HDL & total cholesterol (POCTs)

**Survey domains:** hh composition, economic resources, education, migration, work, fertility, psychosocial health  
tsunami shocks, loneliness, sleep, social support and networks



# Mortality between 2004 and 2005

By Age, Gender, and whether the community was **heavily damaged** or **not**



## Existing Biomarkers

*Follow-ups:*

**Yr1:** No biomarkers

**Yrs 2, 3, 4 :** height, weight,  
**5, 10** waist, hip,  
 blood pressure,  
 hemoglobin,  
 dried blood spots  
 (hsCRP on going)

**Yr 13 (POCT subsample):**  
 added hsCRP  
 HbA1c  
 cholesterol  
 (total, HDL)  
 body composition

## Planned Biomarkers:

**Q: What is temporal path of biological health risks following a major exogenous shock?**

Extend on-going work develop panel of hsCRP post-tsunami using stored DBS

Repeat extended biomarker and cognition assessments

hsCRP, hbA1c, cholesterol, blood pressure, anthropometrics

Add other biomarkers using stored DBS for which long-term panel scientifically valuable

Limitations: Assess biomarkers in home (POCTs) or in labs in Indonesia

Develop mechanism to transport specimens out of Indonesia

(epigenetics, RNA)

**Q: Can we contribute to understanding dementia and ADRD after a major shock?**

Develop protocol for clinical diagnoses, key biomarkers, MRIs

**Q: Are there inter-generational impacts of stresses**

Investigated in utero effects

Extend to effects on child born before and after tsunami

# Cognition

Word recall, pattern recognition since 2008

Mini mental state, mini-cog in three recent rounds

Executive function on tablets:

- spatial planning ("tower of London")

- emotional reactivity and control

## **The Future:**

- repeat what we have done before

- expand tablet based executive function measures to subdomains

- more extensive Alzheimer's work up (with MRI) for subsample