

# **WHO Conference on Health Aspects of Tsunami Disaster in Asia**

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# Tsunami Related Mortality in Aceh

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Johns Hopkins School  
of Public Health  
in collaboration with  
Mercy Corps



# Tsunami Mortality & Assessment Aims

- Over half of tsunami mortality occurred in Indonesia
- The death toll in Aceh was exceptionally high
  - 124,000 dead
  - 114,000 missing
  - 406,000 displaced
- Johns Hopkins School of Public Health and Mercy Corps conducted surveys in four Aceh districts
  - Demographic and health impacts of the tsunami
  - Intentions and needs of displaced populations



Source: BAKORNAS, OCHA



# Survey Locations

- Meulaboh
  - Nagan Raya and Aceh Barat
  - Displaced population estimated at ~60,000
  - Mortality estimated at ~30,000
- Banda Aceh
  - Banda Aceh and Aceh Besar
  - Displaced population estimated at ~129,000
  - Mortality estimated at 50,000-100,000



Source: HIC Sumatra



# Survey Methods

- Cluster sample surveys
  - 20 clusters of 20 households in Meulaboh (N=400)
  - 20 clusters of 24 households in Banda Aceh (N=480)
- Population proportional to size sampling
  - Displaced population estimates from the Humanitarian Information Center and the Indonesian Military
  - Displaced populations in host communities, camps, and temporary living centers (barracks) were included
- Survey conducted in Bahasa by trained interviewers (mostly university students)
- Approval from Aceh provincial government



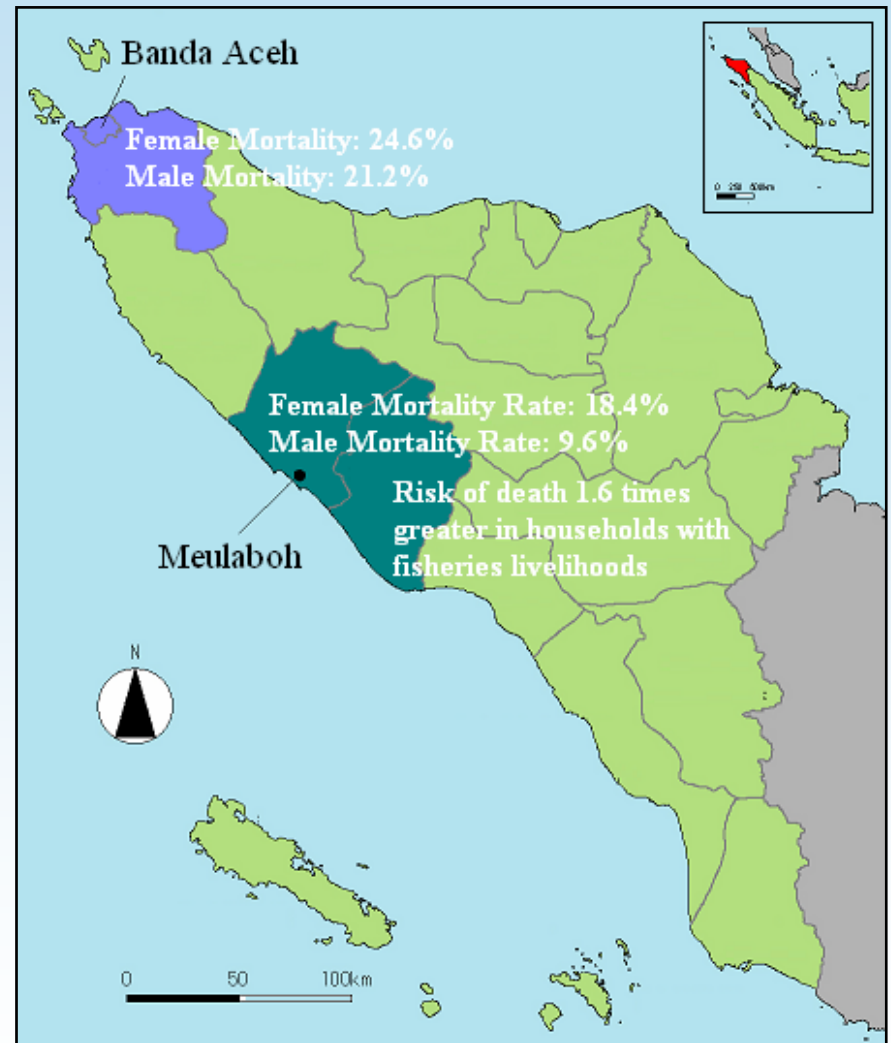
# Study Findings

- Overall Mortality Rates

- Meulaboh—13.9%  
95 CI: 12.4-15.4%)
- Banda Aceh—22.9%  
(95 CI: 21.4-24.3%)

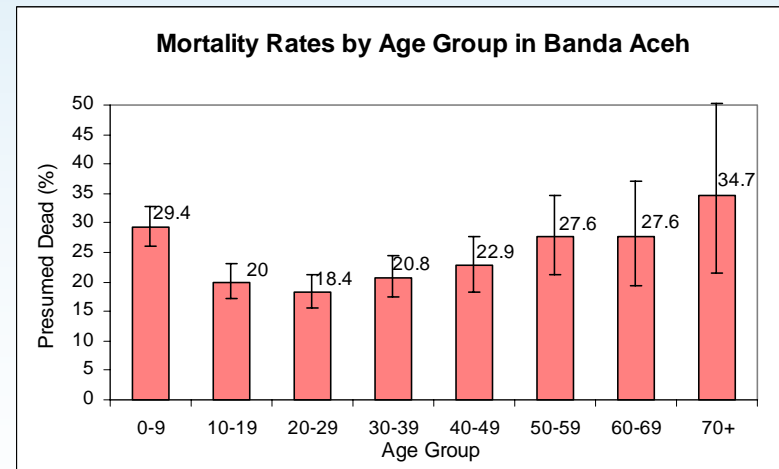
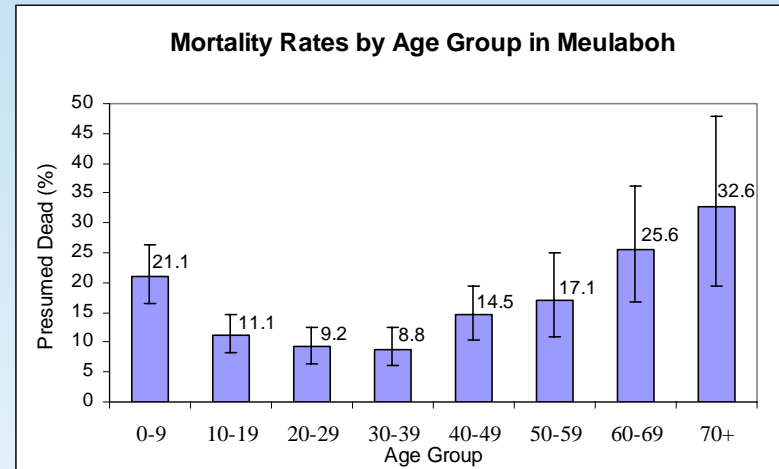
- Mortality by Sex

- Meulaboh—Females are 1.9 times as likely to die as males (95 CI: 1.5-3.0)
- Banda Aceh—Females are 1.2 times as likely to die as males (95 CI: 1.0-1.4)



# Mortality Differentials by Age

- Oldest and youngest populations groups had the greatest mortality
  - <10 yrs and 60+ yrs
- Young adult populations (20-39 years) were most likely to survive
- Findings are not unexpected—physical strength should be greatest among young adults



# Displaced Population Displacement and Intentions in Meulaboh

- The vast majority of IDPs were displaced near to their original place of residence
  - 91.7% (95 CI: 88.6-94.2) in the same district
  - 72.2% (95 CI: 67.4-77.6) in the same sub-district
- 36% of IDPs indicated an intention to return to their original community within three months
- IDPs residing in host communities were 2.2 (95 CI: 1.2-2.8) times more likely to state they intended to return to their original villages or another community as compared to those residing in camps



# Use and Dissemination of Assessment Findings

- Guide Mercy Corps programming
  - Profile of survivors and individuals most at risk
  - Guidance in program development, notably the Village Returns and Livelihoods programs
- Dissemination
  - Presentations at WHO & WADEM conferences
  - Publications forthcoming



# Study Limitations

- Survivor bias
  - Households with no surviving members were not included in the study thus, mortality may be underestimated
- The first assessment had limited objectives and did not focus on health and injuries
- Timeliness
  - Conducting the surveys earlier would have made findings more useful to relief agencies
- An ideal assessment would be conducted immediately following the disaster and would encompass the entire affected population



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# Assessment Conclusions

- As the scale of devastation increases, survival differentials relative to age and sex decline
- Attention needs to focus on survivors
  - Among the vulnerable populations that were displaced by the tsunami, children who have lost their mothers and men who have lost their wives, especially those who are fathers of surviving, minor children, are in need of special attention
  - Mercy Corps estimates that 75% of the displaced population is able and willing to return to their original areas of residence



# Challenges in Post-Disaster Needs and Impact Assessments

- Logistics
- Use of sound methodology
- Inter-agency coordination
- Local capacity to conduct assessments
- Dissemination and use of findings
- Assessment is often not viewed as a priority because efforts are focused on meeting the population's immediate needs



# Conclusions

- Mortality and needs assessments can be conducted effectively in the post-disaster context
  - Should be done as soon after the disaster as possible
  - Needs to be representative of the entire affected population while providing sufficient detail
  - Interagency coordination and dissemination of results is crucial for improved response



# Questions & Answers

