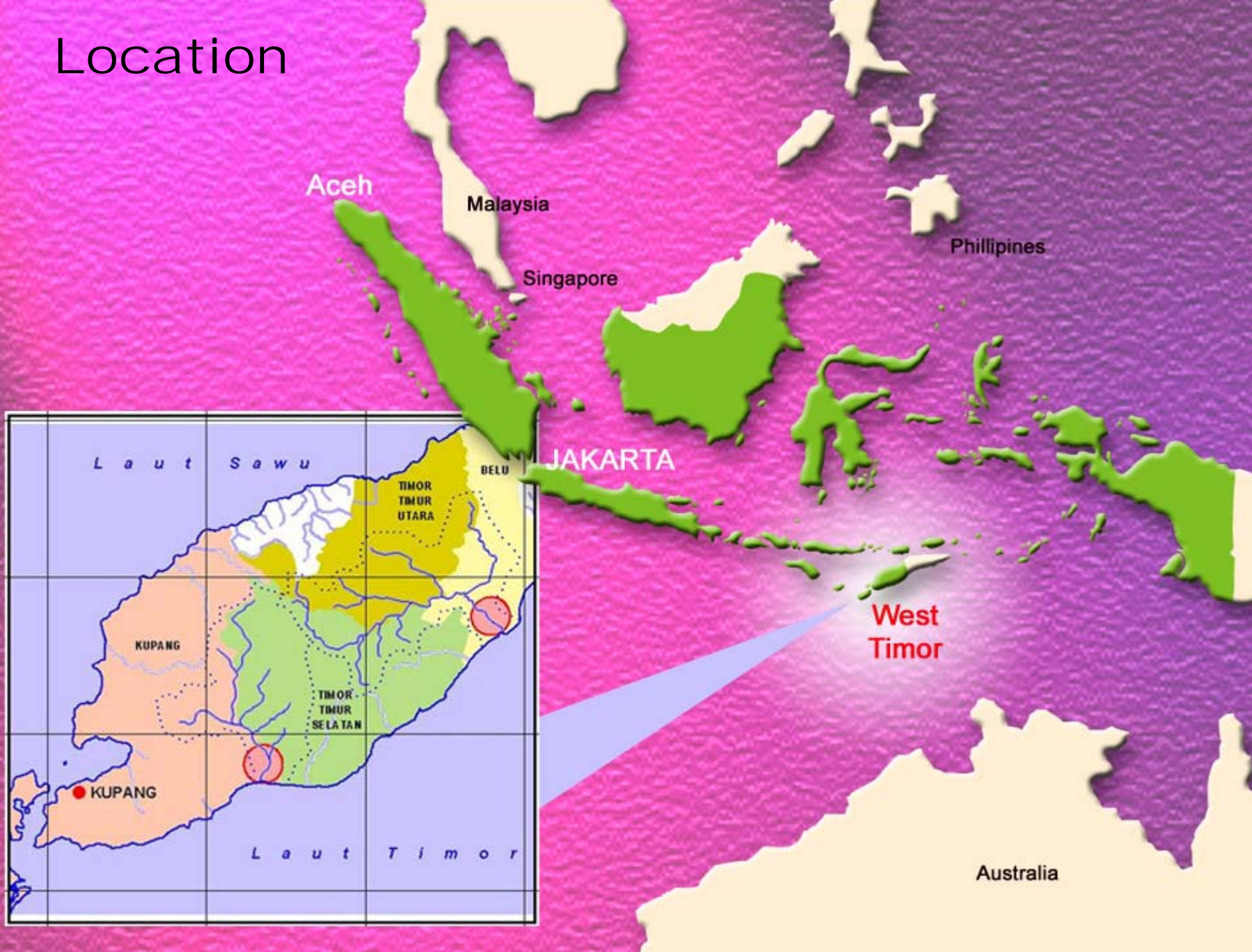


Preventing Diarrhea Following a Flood Emergency: An Evaluation of Home-based Chlorination

West Timor, Indonesia, 2004



Location



Background



- We provided dilute bleach and water treatment instructions to flood victims in West Timor in April, 2004.
- A cross-sectional survey 2 weeks later suggested that diarrhea rates decreased by 56%.

Background

- **In October 2004, 6 months after the emergency response, the population was re-supplied with free bleach and education.**
- **In October-November 2004, we evaluated the program's impact.**



Methods

- **We surveyed households from villages that were selected in a two-stage random sampling process from 2 rural flood-affected West Timor districts: Betun and Panite.**
- **Respondents were asked about water, hygiene, and sanitation practices.**



Methods

- **All households were visited twice a week for 7 weeks to test stored water for free-chlorine residuals and to obtain information about diarrhea in residents.**
- **We compared diarrhea – before and after using chlorine.**



Results



- **We interviewed 320 persons in 61 villages in Betun and Panite; 291 (91%) were female with median age of 31 years (Range: 17–68 years).**
 - ***90% of households used surface or ground water sources***
 - ***97% stored water in the home.***
- **Overall, 51 (85%) of 60 water sources and 213 (67%) of 320 storage containers were contaminated with *Escherichia coli*.**

Results

- **Twice weekly water testing in household storage containers showed an increase in the percentage with detectable free-chlorine residuals from zero at baseline to a peak of 70% in Betun and 94% in Panite.**
- **When compared to non-users of bleach, users had significantly lower diarrhea risk in Betun (RR=0.13, 95% CI=0.1–0.3) and in Panite (RR=0.3, 95% CI=0.2–0.5).**



Conclusions

- **Adoption of home-chlorination practice was high in these two flood-affected districts and associated with lower risk of diarrhea.**
- **To ensure regular access to dilute bleach, a transition to a more sustainable commercial strategy is planned.**

