



Surfer Health Study

Study Early Progress Update

June 6, 2014

Beach Bacterial Contamination in Wet Weather Is Problematic

- **Good progress has been made on cleaning up dry weather**
- **Wet weather bacterial contamination levels always seem high**
 - Sources are uncertain
- **Remediation strategies are expensive**
 - TMDL compliance deadlines are on the horizon

Wet Weather May Not Be The Same As Dry Weather

- An assumption that non-human sources of FIB carry less risk than human sources
- The relationship between FIB and illness can be different with non-human sources
- There has not been a qualified epidemiology study in wet weather

Our Study Questions

- Is water contact associated with an increased risk of illness?
- Is illness risk greater from exposure following wet weather compared to dry weather?
- What is the association between levels of *Enterococcus* and illness following wet weather events?
- What level of *Enterococcus* corresponds to the same risk of illness as current water quality objectives?

A Wet Weather Epi Study Has Never Been Attempted

- We started with a Pilot Study
 - Two foundational goals
- Test logistics
 - Can we do the sampling?
- Test feasibility
 - Will our study design provide answers?



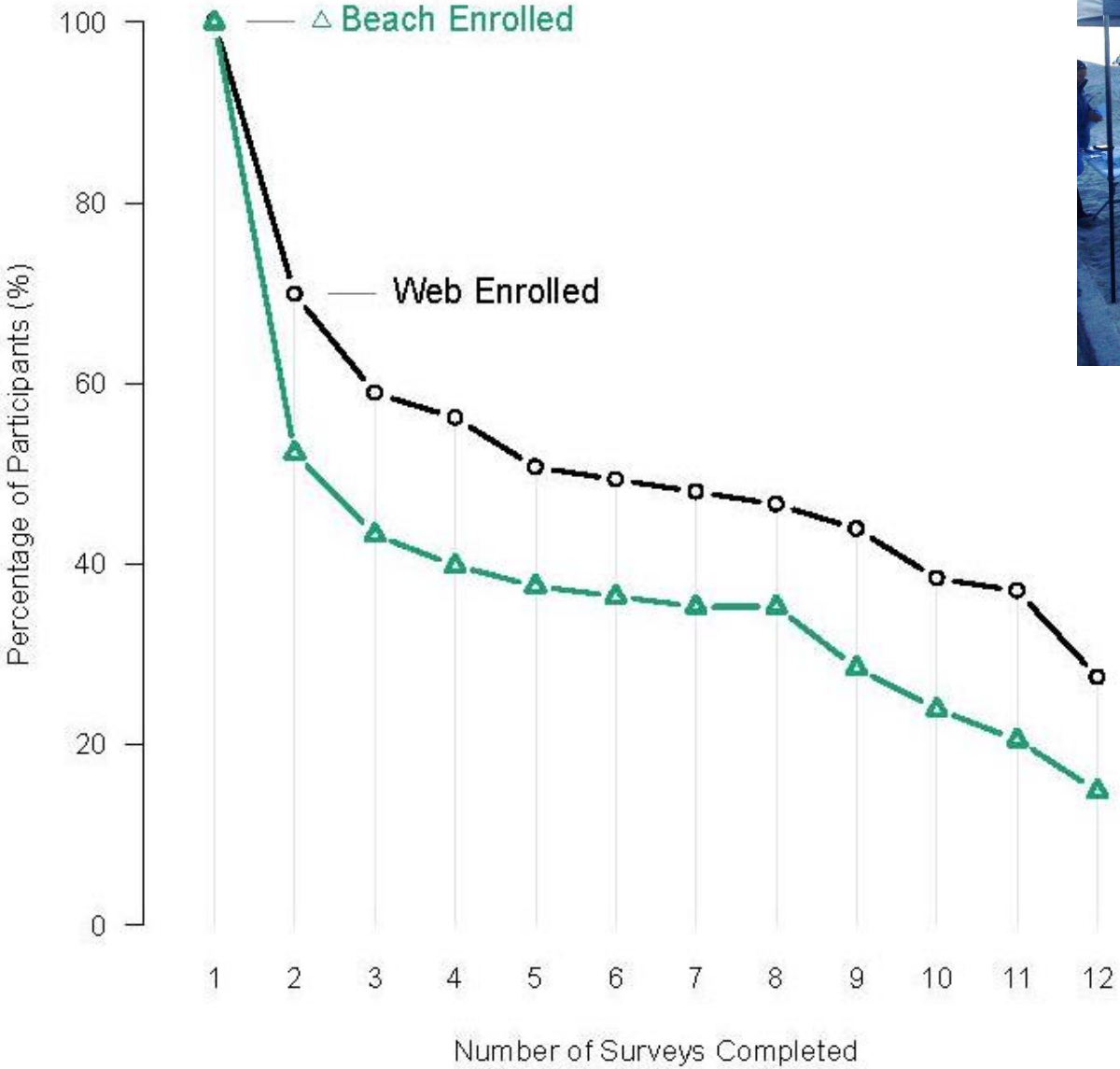
Surfers Are Our Biggest Challenge

- **Surfers are the largest population in the ocean following storms**
 - They are most “at risk” cohort
- **Surfers may enter the ocean frequently**
 - Multiple exposures days
- **Surfers may use multiple beaches**
 - Multiple exposure locations



Pilot Study Approach

- **Two beaches**
 - Ocean Beach and Tourmaline Surfing Park
- **Collect water quality daily**
 - Intensify during storm events
- **Recruit 100-200 surfers**
- **Follow their surfing activity and health status weekly for three months using web or cell phone app**
 - Compare illness rates when surfing vs. not surfing
 - Compare illness rates surfing in dry vs. wet weather



Surfer Health Study









[F.A.Q.](#)
[View Consent Form](#)
[Contact](#)
[Brochure](#)



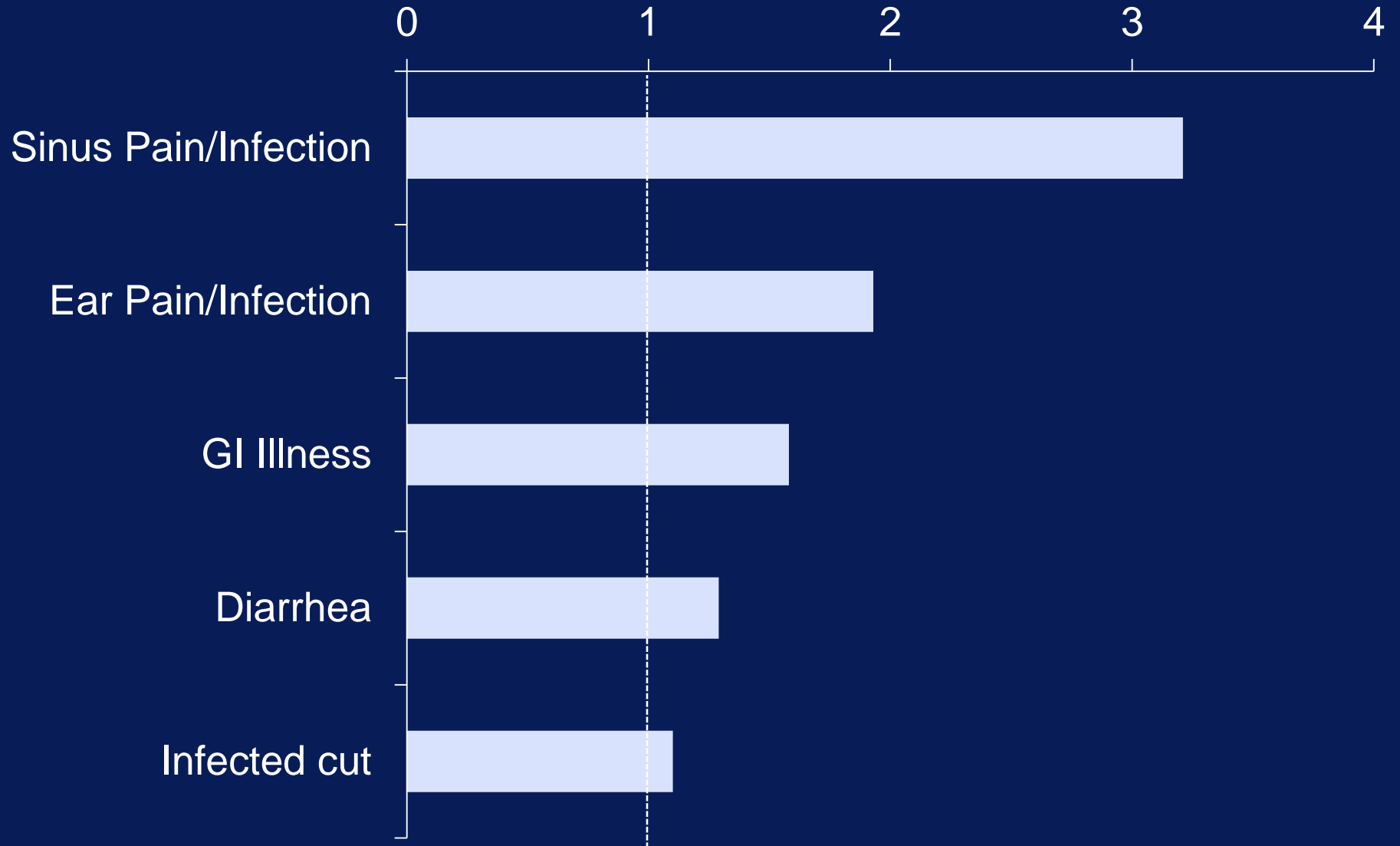




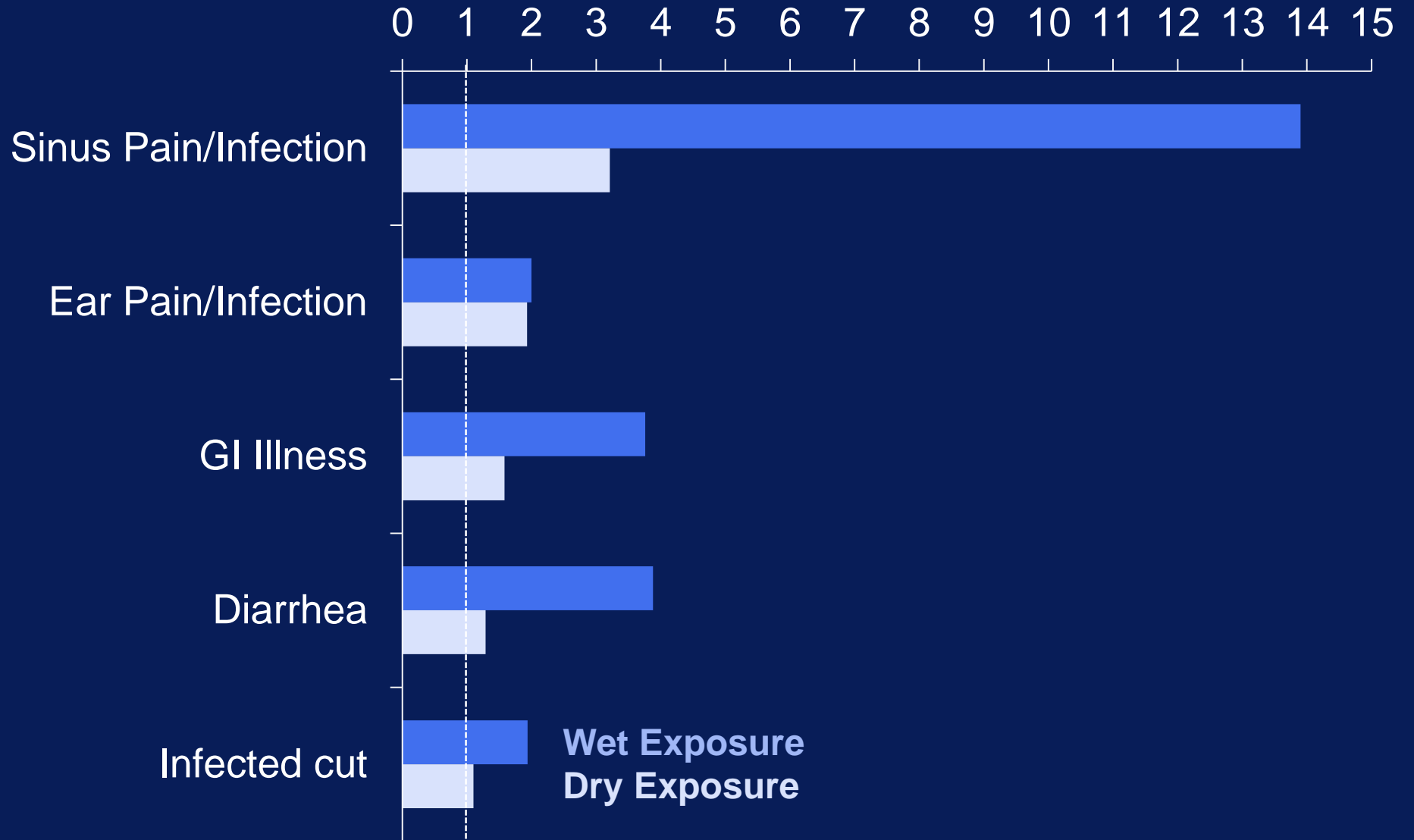




Incidence Risk Ratio



Incidence Risk Ratio



Time For Deciding Next Steps

- We know we can conduct (and improve upon) the study logistics
 - Sample collection, surfer recruitment, reporting
- We know the study design can work
 - power analysis indicates we will need 3 to 7 times more “exposure days” for statistical confidence
- Is it worth continuing on with the full study?
 - How representative are these two beaches?