CDC/USAID activities related to DLs

- Study in western Kenya (completed)
- CDC/USAID supported study (planned)
Study Design

- Study was conducted in 6 pairs of villages; one village in each pair was randomized to receive ITWLs.
- ITWLs were installed in all sleeping rooms beginning in late May 2010; installation was completed in late July; a total of 1700 house structures were fitted with ITWLs.
- Enrollment of study compounds began in June 2010.

Green=ITWL Villages
Black=non-ITWL Villages
Enrollment

- 555 Compounds (269 ITWLs, 286 ITNs only) within the study villages were randomly selected.
- Within the selected compounds, all persons aged 6 months to 11 years were eligible for inclusion in the study.
- Baseline questionnaire was administered and a blood smear was taken at enrollment.
- Participants were provided with a treatment dose of Coartem regardless of symptoms/microscopy results and a new long-lasting insecticide treated net.
Follow Up

- Participants were asked to come to a health facility at monthly intervals
  - Questionnaire administered
  - Hb read using a portable Hemocue machine
  - Blood smear taken
- Participants were encouraged to report to the study clinician when they were sick
- Follow ups continued for 6 months or until the 1st positive blood smear
Statistical Analysis

- Began measuring malaria parasitemia incidence rates 10.5 days after enrollment
  - Not “at risk” for new malaria infection 10.5 days after AL presumptive treatment at enrollment*
  - Also decreased time “at risk” by 10.5 days if AL given when BS negative*

- Incidence rates compared using Poisson regression
  - GEE to account for correlation within compound
  - In adjusted analysis, controlled for
    - baseline parasitemia
    - seasonality, ITN use as time varying variables

# Incidence Rate Ratios

<table>
<thead>
<tr>
<th></th>
<th>ITNs + ITWLs</th>
<th>ITNs only</th>
<th>Rate ratio (95% CI)</th>
<th>Adjusted Rate ratio* (95% CI)</th>
<th>Adjusted PE* % (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Events</td>
<td>Person-yrs at risk</td>
<td>Rate per 100 person-yr</td>
<td>Person-yrs at risk</td>
<td>Rate per 100 person-yr</td>
</tr>
<tr>
<td>Overall</td>
<td>461</td>
<td>227</td>
<td>2.03</td>
<td>584</td>
<td>207</td>
</tr>
<tr>
<td>6 mth – 4 yr</td>
<td>185</td>
<td>93</td>
<td>1.98</td>
<td>225</td>
<td>94</td>
</tr>
<tr>
<td>5-14 yr</td>
<td>276</td>
<td>133</td>
<td>2.07</td>
<td>359</td>
<td>113</td>
</tr>
</tbody>
</table>
## ITWL Condition

<table>
<thead>
<tr>
<th></th>
<th>February 2011</th>
<th>October 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houses Surveyed</td>
<td>184</td>
<td>170</td>
</tr>
<tr>
<td>ITWLs Removed</td>
<td>0 (0%)</td>
<td>2 (1.1%)</td>
</tr>
<tr>
<td>Bioassay Mortality</td>
<td>99.6% (n=45)</td>
<td>99.1% (n=50)</td>
</tr>
<tr>
<td>Mean No. Holes/House</td>
<td>2.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Median No. Holes/House</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>ITWL Material/House</td>
<td></td>
<td>37.0 m²</td>
</tr>
<tr>
<td>Holes/m²</td>
<td></td>
<td>0.14</td>
</tr>
</tbody>
</table>
Planned study

- Funding available for an additional evaluation of DLs
- Funded by USAID and supervised by CDC & USAID
- RFA to go out within the next 4 weeks (?)
  - 3 arm study (DLs, IRS, nets only)
  - PMI country
  - Moderate to high prevalence (>20%)
  - High bednet coverage (>80%)
  - Study area must have pyrethroid susceptible mosquito populations