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Can the presence of insecticide treated materials in the household control dengue vectors?

Submission date 17/03/2010	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 18/03/2010	**Overall study status** Completed	
Last Edited 19/02/2020	**Condition category** Infections and Infestations	

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
075930

Study information

Scientific Title
A cluster randomised controlled trial of household-based insecticide treated window curtains and water jar covers for control of the dengue vector Aedes aegypti in the community

Acronym

DENCO Venezuela

Study objectives
We investigated whether window curtains and covers for domestic water storage containers, both made from long-lasting insecticide-treated netting and deployed either separately or in combination, could reduce populations of Aedes aegypti, the mosquito vector of dengue, to levels that could reduce dengue virus transmission in treated communities.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. Research Ethics Committee of the Liverpool School of Tropical Medicine approved on the 2nd February 2006 (ref: 06/12)
2. Bio-ethical committee of the Jose Witremundo Torrealba Research Institute, Trujillo, Venezuela, approved on the 18th June 2006

Study design
Cluster-randomised controlled trial

Primary study design
Interventional

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Dengue (including Dengue Haemorrhagic Fever [DHF] and Dengue Shock Syndrome [DSS])

Interventions
Curtains made from deltamethrin-coated polyester netting (Long Lasting Impregnated netting; PermaNet® Vestergaard-Frandsen, Lausanne, Switzerland), hung in all outer windows regardless of the presence or absence of other window coverings (World Health Organization Pesticide Evaluation Scheme [WHOPES], approved material for indoor use).

Insecticide-treated water storage container covers are provided as ready-to-use products (a pre-packaged standard size with elasticated border, to close round the water container rim). Treated households provided with enough covers for all large household receptacles that hold water for longer than 1 week (it is from these containers that most Aedes aegypti emerge).

Control households received no treatment.

Following introduction of ITMs, the total duration of both intervention and follow-up was 26 months.

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
Entomological outcomes, the standard larval indices for the Aedes aegypti mosquito vector of dengue:
1. Breteau index: number of containers with immature stages per 100 houses
2. House index: number of houses containing immature stages per 100 houses
3. Container index: number of containers with immature stages per 100 containers with water
4. Pupal surveys were also undertaken to calculate the number of pupae per person index (number of pupae collected/human population in a sector)

Follow up surveys made to all houses at 1, 18, 24, 26 months post-intervention. Analyses to measure impact of the intervention on dengue vector populations will be undertaken according to intention to treat and per protocol (based on extent of coverage as determined in follow-up surveys).

Key secondary outcome(s))
1. Seroconversion rates (as measured by IgM ELISA) in households in the treated and control sectors compared at baseline and at the trial's end. Members of each household between 2 - 8 years of age specifically selected for the study.
2. Interview surveys used to determine:
2.1. Household characteristics
2.2. Previous vector control intervention
2.3. Better understanding of the local population's knowledge, attitudes and practice about previous methods of dengue prevention and control, and about ITMs for the same purpose
3. Insecticide-susceptibility assays undertaken before, at follow-up surveys and after intervention

Each house was also georeferenced with a handheld global positioning system receiver to permit subsequent overspill effects between adjacent treated and control clusters to be quantified.

Completion date
31/10/2008

Eligibility

Key inclusion criteria
All occupied households

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Other

Sex
All

Total final enrolment

1122

Key exclusion criteria
1. Business-only premises
2. Multi-storey buildings

Date of first enrolment
01/07/2006

Date of final enrolment
31/10/2008

Locations

Countries of recruitment
United Kingdom

England

Venezuela

Study participating centre
Liverpool School of Tropical Medicine
Liverpool
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Sponsor information

Organisation
Liverpool School of Tropical Medicine (UK)

ROR
https://ror.org/03svjbs84

Funder(s)

Funder type
Government

Funder Name

European Union (EU) (Belgium) - Sixth Framework Programme (FP6): INCO-DEV-2 (ref: PL 517708)

Funder Name
The Wellcome Trust (UK) (grant ref: 075930)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	27/05/2006	19/02/2020	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes