NEW PARADIGMS IN VECTOR CONTROL

saving lives

vector control

IVCC
COMBATING INSECT BORNE DISEASE
Innovative Vector Control Consortium
IVCC Formed in 2005 to Meet the Challenge of Innovation in Vector Control

IVCC is a Product Development Partnership investing donor funds in R&D to overcome barriers to innovation in vector control

Not for Profit Company and Charity

Developing Products Through Partnerships

Portfolio
- New Active Ingredients
- New Formulations
- Re-purposed AIs
- New Paradigms

Tools and Diagnostics
Project and portfolio management
Testing
Access
Advocacy
Funding
Communications
Tools Guidelines and Processes

  - Development of the intervention Concept and Draft TPP
  - Proof of Concept
  - Verification of Epidemiological Efficacy
  - Policy Endorsement and Adoption

- Entomology, Epidemiology, Economics, Technology, Sustainability, Acceptability, Delivery and Implementation, Regulatory and Environmental, Target Product Profile, Policy and Strategy.

- Framework for rapid assessment and adoption of new vector-control tools Vontas et al

- Case Study in design of a programme for validation of the spatial repellent paradigm Moore.

- Expert Scientific Advisory Committee.
IVCC and WHO Vector Control Advisory Group have complementary roles

- **IVCC**
  - Create the evidence to validate Target Product Profiles
    - End users
    - Industry
    - Target product profiles.

- **Vector Control Advisory Group**
  - Review and assess the public health value,
  - Make Policy recommendation to MPAC (malaria) and STAG (NTD)
New Paradigms in Vector Control Objectives

1. Protection from disease transmission by outdoor biting mosquitoes.

2. Protection during targeted elimination campaigns.

3. Protective Products distributed through private sector/consumer channels.
New Paradigms in Vector Control Strategy

What needs to be done?

- **Find and Validate** effective product classes and their associated Target Product Profiles.

- **Partner with multiple companies** that have the capability to develop and deliver the products which match the TPPs

- **Prepare** and influence the policy, regulatory, funding and implementation partners to drive adoption.
## Target Product Profile: Example

<table>
<thead>
<tr>
<th>Criteria Type</th>
<th>Essential Criteria</th>
<th>Desirable Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Human Population</strong></td>
<td>1. All people (adults, children and infants) in rural and urban areas in malaria endemic regions.</td>
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| **Efficacy**                | 1. Reduces blood feeding by malaria transmitting mosquitoes to n per day or by x percent  
2. Performance demonstrated against susceptible and known resistant strains | 1. Reduces biting by all mosquitoes to a user acceptable level.                      |
| **Persistance Criteria**    | 1. Must perform at required level of efficacy for t length of time.             
2. Cost/Effort of maintenance at a level that will ensure the long term performance of the product | 1. Persistence of efficacy is greater than the minimum required persistence          |
| **Cost of Implementation**  | 1. Fits within public health products pricing range (approx. $2-5/annum/person). |                                                                                    |
| **End User Suitability**    | 1. Fits behavior of target population with regards acceptability/desirability etc.      
2. No irritancy, unacceptable odour, staining etc. |                                                                                    |
| **Safety and regulatory**   | 1. Product passes risk assessment for community level exposure risk assessment model. 
2. Risks to non target species in line with accepted standards for PHPs at the time of registration submission. |                                                                                    |

The Target Product Profile enables multiple manufacturers to design epidemiologically effective products in a particular class. (cf Bed nets)
How can IVCC help in the New Paradigm Space?

- **Encourage a vibrant marketplace for Ideas and Partnerships**
  - Innovation Landscape Mapping,
  - Complement the current IVCC portfolio and other projects in development.
  - Industrialisation partners

- **Portfolio management**
  - ESAC process.
  - Framework for Validation.
  - World class resources in trials design.

- **Funding Management**
  - Integrate multiple funding streams
  - Focussed, effective trials strategy.

- **Prepare for the introduction of new Vector control tools**
  - Links to policy, funding, regulatory and delivery stakeholders.
  - Prepare the ground for rapid introduction
RBM VCWG-9, Geneva
Salle IV & Salle VI
1-3pm, 20 February 2014

New Ideas for New Paradigms in Vector Control

We’re on the lookout for new ideas in Vector Control that may be suitable for development as part of our New Paradigms programme.

We don’t promise to support every bright idea, but we will be available to listen in confidence to explore new possibilities for our new portfolio.

You can drop me a line to say you’re coming, or just turn up on the day.

If you need further information please contact tom.mclean@liverpool.ac.uk
Understanding the Connections
IVCC New Paradigms  Scope

• **In Scope**
  • New Interventions approaches and their associated products.
  • Odour Baited Traps
  • Repellents
  • Swarms
  • Many more to be found ????

• **Out of Scope :-**
  • New designs of Bed Net and IRS that fit the current TPP
  • Genetically or Biologically modified mosquitoes. (Not IVCC skills base)
  • Early Stage research

• **To be debated:-**
  • Housing stock improvement ?
  • ?
  • ?
Processes for Proposal Assessment and Portfolio management

Basic research and Concept Development
- Broad and diverse
- Many funders
- IVCC advise how to progress to POC.
- Too early for IVCC funding.
- Basic Modelling

Proof of Concept
- IVCC Sweet spot
- Design and Fund POC trials.
- Exploit IVCC investment in field sites.
- Fill the expertise gaps.
  • Modelling
  • Economics
  • Social
  • Introduce Industry.

Epidemiological Validation
- IVCC Target
- Design and fund Validation trials.

Policy Endorsement and Adoption
- Support VCAG process
- Beyond IVCC Funding
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