Participatory Epidemiology Network for Animal and Public Health (PENAPH)

Participatory Epidemiology in Animal and Human Health

Saskia Hendrickx, International Livestock Research Institute (ILRI)
Cyrille Pissang, Vétérinaires Sans Frontières - Belgium (VSF-B)

Antwerp, November 5th 2010
Presentation outline

• Introduction to Participatory Epidemiology (PE)

• PE in Animal & Human Health: A Win-Win combination

• PENAPH: a Network to promote PE and One Health concept

• Conclusion
Participatory Epidemiology

The use of participatory rural appraisal techniques to collect epidemiological knowledge and intelligence
Participatory Rural Appraisal (PRA)

- Qualitative data gathering process
- Key informants
- Problem solving with community
  - Multiple methods
  - Multiple perspectives
  - Triangulation
Quantitative versus Qualitative Epidemiology

**Quantitative**
- Objective
- Numerical estimates
- Data intensive
- Expensive
- Logistically complex
- Long-time frames
- Difficult to sustain
- Information gaps

**Qualitative**
- Subjective
- Flexible
- Rapid
- Discovery
- Simple
- Sensitive
- Skilled field personnel
- Analytical challenges
Qualitative data checking

• Probing
  – Internal consistency

• Triangulation
  – Multiple methods and sources
  – Patterns and coherence
  – Understanding bias

• Understanding conflict of interest

• On the spot analysis
  – Evolving hypotheses and data collection
  – Weighing of evidence
Scoring of evidence

- First hand reports
  - Directly observed
  - Own family
- First hand reports
  - Directly observed
  - Community
- Reports obtained from inquiry
- Second hand reports
  - Hearsay
  - Intelligence but not evidence
Existing Medical & Veterinary Knowledge

Communities know a lot!

• Traditional terms and case definitions
• Clinical presentation
• Pathology
• Vectors
• Reservoirs
• Epidemiologic features
PE applications

Can be used for variety purposes:

• Needs Assessments
• Research
• Disease Reporting
• Disease Surveillance
• Impact Assessment
• It can inform Strategy and Policy Reform
PE tools

- Secondary sources
- Direct observations
- Semi-structured interviews
- Participatory mapping
- Ranking & Scoring techniques
- Diagnostics
Added value of PE

• Better understanding of local terminologies, perceptions, local treatment and health seeking behavior
• Better understanding of the true epidemiological situation in certain areas since many diseases remain unreported.
• Better understanding of an outbreak situation thanks to the use of PE tools (mapping, timeline...)
• Quick way of understanding of important health issues within the community and coming up community sustainable solutions.
Example 1: Timeline of outbreaks constructed by PDS teams in Egypt
Example 2: RVF outbreak in Kenya

RVF outbreak reported in Kenya (and Tanzania) in October 2006 - February 2007.

Immediately after this outbreak, ILRI conducted a participatory survey to estimate the incidence and impact on livelihoods of the disease in North-eastern and Coast provinces of Kenya.

We also characterised the type and timing of the responses executed by the government and other agencies for the purposes of suggesting ways of improving surveillance systems for related outbreaks in future.
# Time line developed in villages in NE province

<table>
<thead>
<tr>
<th>Village</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
<td>M</td>
<td>L</td>
<td>E</td>
<td>M</td>
<td>L</td>
<td>E</td>
<td>M</td>
</tr>
<tr>
<td>Sangailo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ijara</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kotile</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fafi</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saka</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alango-arba</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

## Key
- **Duration of exceptionally high rains**
- **Time when mosquito population increased**
- **Time when clinical cases of RVF were observed in livestock**
- **Time when human cases were observed**
- **Time of intervention by the MoH**
- **Time of intervention by DVS**
- **Time of intervention by the NGOs**
Example 3: HPAI outbreak in Indonesian village
PE, animal & human health

Joint Animal and Human Health Services for Remote Rural/Pastoral Communities

Combine programs, combine means, common strategy for mobile populations. Example: childhood vaccination was linked to Rinderpest vaccination in Sudan.

Currently with resurgence of polio in some areas → combine polio vaccination & PPR or FMD vaccination.

Other examples: VSF work in: Sudan, Liberia, Chad
PE and One health...

→ Ongoing study in Western Kenya with the following objectives:

• Determine the *perceived* causes of childhood diarrhea and the *perceived* relative contribution of enteric zoonoses in childhood morbidity and mortality using participatory epidemiology

• Compare and contrast the results of the participatory epidemiological study with those of the ongoing CDC/KEMRI case-control studies (GEMS & GEMS ZED)

Last phase of the work planned for December 2010
Participatory Epidemiology Network for Animal and Public Health (PENAPH)

9 core partner institutions:

- AFENET: African Field Epidemiology Network
- AU-IBAR: African Union – Inter African Bureau for Animal Resources
- FAO: UN Food and Agriculture Organization,
- ILRI: International Livestock Research Institute
- OIE: World Organization for Animal Health
- Royal Veterinary College / United Kingdom
- US-CDC: United States Centres for Disease Prevention & Control
- 2 VSF (Belgium & Canada)

In addition: Universities & individual members
Participatory Epidemiology Network for Animal and Public Health (PENAPH)

• The PENAPH was set up to facilitate capacity building, research and information sharing among professionals interested in participatory approaches to epidemiology.

• Aims to promote minimum training guidelines, good practice and continued advancement of methods.

• Advocates for inclusion of PE modules into medical & veterinary schools
  – Already included in Chiang Mai University (Thailand) Veterinary Public Health MSc
  – In progress: inclusion in AFENET’s FELTP program
Conclusion

➔ PE is an approach to epidemiology that is sensitive to and benefits local communities
  • Conducted by professionals
  • Incorporates diagnostic testing

➔ It’s flexible, semi-structured and adaptable to changing situations. Data from multiple sources is rapidly analysed for quick feedback and response.
  • Research and active surveillance applications

➔ PENAPH is a growing network designed to build communication between those working on PE across the world in all health related fields.
Thank you!

For more information:

www.penaph.net