

**Minutes of the 1st Meeting
Informal Partners for Rabies Prevention Group
Alliance for Rabies Control
Banna, Italy, 6-7 May 2008**

Coordinator: Deborah J Briggs

Rapporteurs: Thomas Müller, Noël Tordo

Moderator: Anthony Fooks

Participants

- Michael Attlan (Sanofi Pasteur)
- Kate Aultman (B & M Gates Foundation)
- Ferdinando Borgese (Novartis)
- Hervé Bourhy (Institut Pasteur)
- Deborah Briggs (ARC)
- Leon Russell (WVA)
- Gideon Bruckner (OIE)
- Natalia Cediol (FAO)
- Sarah Cleaveland (University of Edinburgh)
- Katinka de Balogh (FAO)
- Kim Doyle (Fondazione Spinola)
- Anthony Fooks (VLA)
- Karin Jager (Intervet)
- Francois Xavier Meslin (WHO)
- Thomas Müller (FLI)
- Anastasia Pantelias (B & M Gates Foundation)
- Olga Popova (Crucell)
- Charles Rupprecht (CDC)
- Carolin Schumacher (Merial)
- Noël Tordo (Institut Pasteur)

1. Presentations and Discussions

1.1. Why an informal group? – Deborah J Briggs

- 1.1.1. No single organization can tackle the rabies problem, bring people/talents together
- 1.1.2. We can work more effectively within a partnership by using the skills and capacities of all partners (information/funding/advocacy/methods, etc)
- 1.1.3. WRD – 2007 revealed the worldwide need/expectation for more action
- 1.1.4. There is a growing momentum to increase rabies prevention activities globally
- 1.1.5. Will provide a platform to share technology/information and find ways to disseminate information
- 1.1.6. Provide tools to those who need them most

1.2. How is the group designed?

- 1.2.1. Informally – no formal structure, no formal membership, open to all stakeholders that bring talents/skills/information to share
- 1.2.2. Inspired by other informal groups (e.g. Partners for Parasite Control which includes WHO member states, UN agencies, NGOs, universities, research institutes, industry, etc.)

1.2.3. Main goals of most informal groups are: Education, collect and share data, availability of interventions, general advocacy, research on new tools if needed.

Discussion: What are some of the expectations of members of the informal group?

- all of us have to be on the same level, e.g. where are we, where do we want to go, programme/managing expectations, at the moment there is no comprehensive package
- most objectives are actually captured in the resolutions of scientific conferences (Kiev/Paris) but apart from what WRD accomplished, nothing happens afterwards: what could be done to get it more exposed, more transparency, to implement recommendations?
- this informal group is to do something about the frustration felt by all: we are stuck in small-scale projects instead of a long-term approach, previous organization road maps have not worked, there needs to be a marshalling of resources, a need for a framework to work together
- working to make WRD a larger event
- we need to be careful with large/vague objectives: better restricted and quantifiable objectives with evaluation of milestones with deadlines, need to put rabies on the radar screen,
- Why is rabies currently not a priority: need to attract more awareness, secure the link between decision makers and people dealing with rabies on day to day basis
- We all know that concrete hurdles exist hindering successful rabies elimination in countries (dog only, no trade implication, poor population...), we need to change attitudes

1.3. Re-stating the rabies problem – Francois X Meslin

1.3.1. Points to consider about rabies globally:

- 1.3.1.1. Underreported/misdiagnosis, particularly in Africa
- 1.3.1.2. Increasing complexity, lyssavirus genotypes with variable geographical dispersion, multiple-reservoir species
- 1.3.1.3. But dog and dog-bite is the most important problem for human rabies worldwide
- 1.3.1.4. If rabies is present on all continents the burden of disease is not equivalent
- 1.3.1.5. Difficult to assess the exact burden of rabies, possible confusion with other diseases, e.g. cerebral malaria
- 1.3.1.6. Estimations from the model published by Knobel et al, 2005; Sudarshan et al, 2007: 55,000 deaths/year on average (31,500 in Asia, 23,700 in Africa), most of the cases occur in rural areas
- 1.3.1.7. 3.3 billion people are living in rabies endemic areas
- 1.3.1.8. Ranking 4th among neglected diseases using DALYs scores: lymphatic filariasis (5000) > enteric nematodes > leishmaniasis > rabies (1940)>>dengue (1000)
- 1.3.1.9. PEP coverage/country is variable, sometimes used in excess, BUT without PEP, rabies would be ranked 1st in DALYs scores: 303,304 predicted human deaths/year
- 1.3.1.10. Wrongly considered static: lack of rabies control in dogs leads to re-emergence in human rabies (examples: China, Vietnam), this re-emergence is not only due to enhanced surveillance
- 1.3.1.11. Disease of poverty, when eliminated in dogs direct benefit for humans (Europe, Latin America), upon dog elimination possible increasing of non-dog mediated terrestrial rabies but with lower consequence on human health.

Discussion points:

- Need to make a bigger deal out of underreporting, need for more accurate estimations to avoid erroneous evaluation of the issue by public health decision makers
- Need also to widely distribute surveillance data, these data available to politicians, use the “political” voice (3.3 billion “voting” people)
- Cambodian example: intensive surveillance in 1 hospital has dramatically increased statistics and attracted political interest (coordination Health/Agriculture). Even if there are limited resources, they need more attention, more money; Vietnam/Madagascar examples: sudden switch from suckling mouse brain vaccine to cell culture vaccine has increased human cases (more expensive, poor population). How can countries better utilize and prioritize the limited resources they have, or access to specific funding support/programs utilize and prioritize the limited resources they have, or access to specific funding support/programs
- Columbian example: Money is there but need to increase training of personal to deal with rabies. Also need to increase awareness of rabies, re-assessment of the global economic burden - actual cost, look at the whole picture: utilize e-networks, veterinary associations, educational strategies
- However it is important to remember that Latin-America (particularly Mexico) has made substantial progress
- One of the first steps is to ensure that rabies is a notifiable disease all around the world, in every country to keep the momentum going

1.4. How can we solve the global rabies problem? – Sarah Cleaveland

- 1.4.1. Tools are available – e.g. can control rabies in animal reservoirs (population management, vaccines): efficiency demonstrated in dogs and wildlife (fox-Europe, coyote-Texas, etc); human pre-exposure vaccination, post-exposure prophylaxis
- 1.4.2. Factors affecting continuation of problem – e.g. lack of awareness, education; local ecology; availability of vaccines, etc.
- 1.4.3. Burden of rabies – includes: human health (mortality, DALYs, animal bites, psychological impacts); livestock production losses; wildlife conservation impacts; animal welfare impacts; economical impacts (human rabies prevention, animal rabies control)
- 1.4.4. Problems in canine rabies control – includes:
 - 1.4.4.1. political factors (decline in infrastructure and resources for delivery of government veterinary services)
 - 1.4.4.2. ecological factors (dog population size in Africa often underestimated (ratio H/D from 5/1 to 10/1))
 - 1.4.4.3. animal bite incidents is a reasonable indicator for dog rabies (high population turn-over in dogs); culling of stray dogs still widely promoted (most of the dogs have owners, culling of stray dogs is ineffective)
- 1.4.5. The Tanzanian example: is canine control in Africa feasible and cost-effective?
 - 1.4.5.1. Animal side: (most dogs in rural areas are accessible for parenteral vaccination, and people walk long distances to the vaccination centers to vaccinate their dogs
 - 1.4.5.1.1. Vaccination coverage high in adult dogs, low in juvenile, lowest in puppies: (basic reproductive rate for rabies: R_0 , on average each rabid dog infects 1.2 other dogs, dissemination controlled where vaccination coverage in dogs is >70%; cost-effectiveness need to be re-evaluated; regular spillover of dog rabies to Serengeti wildlife, no evidence of persistence in wildlife (no specific variants), dog-driven enzootic;

- 1.4.5.1.2. Only few laboratories in developing countries with fluorescent microscopes, need for new diagnostic tests using normal light microscopes (potential of dRIT to improve surveillance)
- 1.4.5.2. Human side
 - 1.4.5.2.1. Awareness and education needs improvement - about WHO recommended schedules: proper wound treatment and washing, proper PEP (promotion of economical i.d. regimen)
 - 1.4.5.2.2. Urgent to limit factors delaying access to PEP: economical status (cost) and distance to treatment centers
 - 1.4.5.2.3. Facilitate access to biologicals
- 1.4.5.3. Future challenges
 - 1.4.5.3.1. Integration of disease control measures between human and animal health sectors (dog vaccination + PEP)
 - 1.4.5.3.2. Need to develop strategies to efficiently survey and prevent reintroduction (natural barriers)

Discussion

- *Need to increase awareness/knowledge, e.g. the fact that many people believe that maternal immunity may be an obstacle to vaccinate dog puppies, by overcoming these incorrect concepts, increased vaccination coverage in puppies would be possible*
- *Issue of costs - what is the “return” for veterinary services performing dog vaccination? The need for a global perception of benefit (one medicine), establishment of rabies free zones is costly, the maintenance (keeping free of disease) is still more costly and frequently underestimated (movement control/border control, etc.)*
- *It is important to integrate the 2 costs and this needs to be explored*
- *Motivation is important to engage programmes but it is not sufficient to make them sustainable. Need (e.g. Tanzanian) government to sustain the programme on a long term, even if the initial group is stepping out. Important to motivate/involve local population on a long term success story to organize transfer of responsibility at the country level.*
- *Always need to start with and involve deeply a few drivers or champions in each region, national and local area. It is important to keep in mind the global picture to move programs from local to national to regional success*
- *In Latin America, PAHO was the driving force putting and keeping together human and agricultural sectors of each country with strong inter-sector collaborations, in Mexico, for example, where both sectors are under the responsibility of a same direction for rabies control.*
- *What is the agricultural benefit of eliminating canine rabies? The dilemma of costs on veterinary sector and the benefit on the public health sector urgently needs to be explained and information disseminated*
- *How do we bring in others to ensure sustainability?*
- *What happened in Latin America is somehow “contagious” now: several Asian countries have announced canine rabies elimination by 2020; North Africa or Tanzania are beginning their programs. However, still need to integrate rabies benefits into a bigger picture, more interest requested from the veterinary sector*
- *Agree on a strong need for clear economic drivers (OIE, Industry), concerns that the need of controlling other animal disease could fall off rabies from the agenda,*

1.5. Is there a global answer to rabies problem? Deborah Briggs, Charles Rupprecht

1.5.1. Similarities across the world:

- 1.5.1.1. It is virtually 100% fatal, has the highest case fatality rate of any known infectious disease
- 1.5.1.2. It is virtually 100% preventable
- 1.5.1.3. Often misdiagnosed
- 1.5.1.4. Shortage of biologicals
- 1.5.1.5. Lack of awareness
- 1.5.2. Differences across the world:
 - 1.5.2.1. Prevention tactics (Dog, human, children)
 - 1.5.2.2. Vectors
 - 1.5.2.3. Diagnoses expertise
 - 1.5.2.4. Surveillance
 - 1.5.2.5. Prevention priority
- 1.5.3. Sustainability – how can we achieve this goal
 - 1.5.3.1. All partners need to be involved including industrial partners
 - 1.5.3.2. Many issues involved
 - 1.5.3.3. Partnerships with developing countries need to be established

Discussion of point of view of Industry representatives in the Informal PRP Group Discussion:

- *Industry has an ongoing support of specific projects, ie Intervet and the Serengeti project which provides tangible benefits - creation of a positive image*
- *There is some “feel good” benefit when Industry is involved but we need to better manage what has to be done. There is a big gap with decision makers and there is a, need to improve vaccine availability: perhaps it is possible to decrease number of doses (Novartis) and improve geographical coverage (biological to be at the right place at the right time).*
- *It is preferable to support focused local programs because in the long-term it is more sustainable and efficient than only a monetary or product “donation”, for example, Sanofi Pasteur is supporting regional groups (AFROREB/ AREB), regional meetings and group of experts, WRD, etc.*
- *Given the global burden of rabies and only 2 main companies for human vaccines (Sanofi Pasteur + Novartis), and the fact it is possible that many countries will face increasing shortages, how do local producers fit into picture?*
- *Industry still meeting the increasing demand of rabies vaccines (> 20% increase per year)(note : currently the demand is satisfied). The local producers are needed (China, India, etc) to fulfill this demand and some are offering low cost products but quality assurance of their products is requested. RIG limitation is not only due to shortages (equine Ig exists and are available) but also because decision makers are not focusing attention on the need for complete post-exposure rabies treatments, better collaboration is expected in the future with MAbs (Sanofi Pasteur collaboration with Crucell)*
- *Animal health industry is generally less interested with veterinary public health (less direct profit), but companies like Merial and others are now entering this sector. There is a new way of thinking about ‘benefit’ (rabies is central to animal health, the pet market, image etc). However, there are conflicting priorities for Industry and, advocacy is needed to convince internally; need to look for new business models (not only commercially oriented, delivery support, distribution systems partnership for set-up of local production). Animal industry wants to participate openly, as one in the stakeholder chain with corporate citizenship and be a part of decisions. It has more to offer than money for meetings, it has expertise in many areas and would need specific*

items for supporting projects including good organization, clear objectives, deliverables and results

- *There is certainly a lack of awareness, so how can we better ‘communicate’ ourselves as a rabies group on rabies prevention, can industry somehow help in this domain ? Intervet and others indicate that yes this is possible.*
- *Crucell requests that safe and effective products are developed and produced in the correct way, ie Crucell’s MAbs cocktail in collaboration with Sanofi Pasteur to replace RIG. Need to have connection with international organizations (for predictable demand of products), in particular GAVI. Money is available in GAVI (5 billion \$US for the next 15 years) for sustainable programs with comprehensive strategy and substantial/measurable impact.*
- *There is a definite need to work on sustainability, including: industrial partnership, dog population management, improved technological tools*
- *Is industry working on new products (contraceptive tools for birth control) that can be used in dogs ?*
- *Intervet and Merial indicate that there is vision and research but no clear market identified yet*

1.6. New rabies control strategies for Africa (Louis Nel presentation delivered by Anthony Fooks)

1.6.1. Need for improved rabies control strategies (organizations, activities)

1.6.2. Two rabies groups in Africa

1.6.2.1. AFROREB (this informal organization was started 2008, information presented by MA):

1.6.2.1.1. Includes French speaking Africa (14 countries)

1.6.2.1.2. 1st meeting in March 2008 with an educational grant from Pasteur

1.6.2.1.3. Two representatives per country mostly from public health services

1.6.2.1.4. Action (not large discussion) meeting in smaller group in order to define achievable and measurable objectives once they return to their own country (e.g. one of the first meeting recommendations were to make rabies notifiable in their own country), and continuous year long regional projects.

1.6.2.2. SEARG (started 1992)

1.6.2.2.1. Objectives: to put rabies on the radar screen; to generate and maintain local capacities; to raise and maintain awareness

1.6.2.2.2. Problems encountered: after 15 years, still little awareness, no ‘champions’; low critical mass of professionals

1.6.3. What can the world offer to Africa?:

1.6.3.1.1. Laboratory expertise (OIE twinning with labs to ‘marry’ expertise), establish formal partnering between global centers of expertise and African States (partnership would provide autonomy and authority)

1.6.3.1.2. Capacity sharing

1.6.3.1.3. Access to global funding,

Discussion among group members:

- *There is a need for better organization of international rabies meetings,*
- *Can there be a link between AFROREB (public health focus) & SEARG (veterinary service focus) or should these groups remain autonomous?*
- *Need to have equilibrated efforts between the two African groups (financial, veterinary – public health).*

- Dr Bruckner: OIE will support SEARG meeting in Botswana, August 2008. The meeting should be on board with the governments. At the moment it is impossible to join the two rabies groups in Africa for several reasons (language, culture) but links are recommended and already established. Important to carefully select the people who attend the meetings in order to maintain long term sustainability, open the SEARG group to both public health sector and government representatives, OIE – twinning of labs: OIE already has two submitted proposals for laboratory partnership in Africa, and there is a potential for other twinning partnerships in other parts of the world

1.7. Demonstration projects: Generating the data to support prevention strategies, working together and the Informal PRP Group opportunities – Thomas Mueller

- 1.7.1. Goal - to achieve ‘rabies free’ status
- 1.7.2. Concept - Rabies prevention in humans by eliminating rabies in animal reservoirs
- 1.7.3. Key – to use a one medicine approach
- 1.7.4. Concept - To create a paradigm shift in human rabies elimination by using a “one medicine” approach to control and eliminate animal rabies
- 1.7.5. Strategy - Principles, guidelines, develop a road map for a long term action plan which needs to include:
 - 1.7.5.1.State-of-the-art of science and technology
 - 1.7.5.2.Effective under any condition
 - 1.7.5.3.Minimal time & effort – maximal success
 - 1.7.5.4.Maximize ratio benefit (decrease in rabies cases) to costs (money spent)
- 1.7.6. Why is rabies such a perfect disease to eliminate?
 - 1.7.6.1.Oldest known zoonosis to mankind
 - 1.7.6.2.Most intensively studied zoonosis (Epidemiology, pathogenesis, prevention & control)
 - 1.7.6.3.100% fatal but 100% preventable
 - 1.7.6.4.Psychological impact in humans
 - 1.7.6.5.Target for control strategies have been identified
 - 1.7.6.6.Tools for elimination are available
 - 1.7.6.7.Have already successfully eliminated rabies from reservoirs (Europe - dog/fox; Canada-fox/raccoon; USA-dog; Mexico-dog)
- 1.7.7. Why do we need another demonstration project?
 - 1.7.7.1.Neglected disease of poverty, highest burden in poorest developing countries
 - 1.7.7.2.255,000 death annually: >95% of deaths are in Asia/Africa, 50% occur in children <15 years
 - 1.7.7.3.Epidemiological, religious & cultural differences are present, esp in Asia
- 1.7.8. What is the value of supporting such a project?
 - 1.7.8.1.Proof of concept
 - 1.7.8.2.Setting of standards for a particular region, will encourage other countries
 - 1.7.8.3.Wake-up signal for politicians
 - 1.7.8.4.Gain in credibility for all stakeholders
 - 1.7.8.5.Sustainable improvements in public/veterinary health sectors, data collection
- 1.7.9. How can we do this? What do we need?
 - 1.7.9.1.Passion & enthusiasm
 - 1.7.9.2.Working & pulling together: involvement of all stakeholders

- 1.7.9.3.Road map & clear objectives, deliverables, timelines, results
- 1.7.9.4.Multi-dimensional partnership of public and private sector resources
- 1.7.9.5.Principles & guidelines for decision makers
- 1.7.10. Who can how contribute?
 - 1.7.10.1. Stakeholders:
 - 1.7.10.1.1. Donors - Funding
 - 1.7.10.1.2. WHO - Recommendations for human rabies prevention
 - 1.7.10.1.3. OIE - Recommendations for animal rabies control
 - 1.7.10.1.4. FAO - Project assistance
 - 1.7.10.1.5. WHO & OIE CCs - Expertise, strategy, analyses
 - 1.7.10.1.6. WVA – Education, awareness, communications
 - 1.7.10.1.7. ARC - Awareness, education, communications
 - 1.7.10.1.8. NGOs - Assistance on spot, ABC programs
 - 1.7.10.1.9. Industry - Supply of biologicals, expertise
 - 1.7.10.1.10. Academics – R&D, competence
- 1.7.11. How to overcome problems?
 - 1.7.11.1. Selection of appropriate pilot project areas
 - 1.7.11.1.1. Rabies Consultative Group, Geneva, 16/17 October 2007
 - 1.7.11.1.2. Independent panel (FAO, OIE, WSPA, WHO)
 - 1.7.11.2. International advisory board
 - 1.7.11.3. Strong and sustainable political commitment of candidate countries
- 1.7.12. Reasons for setbacks in rabies control (not exhaustive)
 - 1.7.12.1. Violation of principles (no long-term planning, decreasing awareness, loss of motivation, other priorities (diseases))
 - 1.7.12.2. Failure in organization mostly due to limited financial resources (no chain of command, no cool-chain of vaccines, too small-scale vaccination, no adaptation of strategy)
 - 1.7.12.3. No continuous control (deficient surveillance, no centre of expertise, no exchange of information, no cross-border activities, no epidemiological analysis).
- 1.7.13. What is the recipe for success stories?
 - 1.7.13.1. Latin-America – In 1983, Latin countries in the Americas developed w/PAHO the plan of action for urban rabies elimination, which was expanded in 1991 to other neglected areas, such as small rural areas.
 - 1.7.13.1.1. Support by PAHO who induced strong political commitment by organizing biannual meetings of representatives of Ministry of Health & Agriculture of all country.
 - 1.7.13.1.2. National day for dog vaccination (free of charge)
 - 1.7.13.1.3. Strategic partnerships with CDC and USDA
 - 1.7.13.1.4. Annual RITA meetings
 - 1.7.13.1.5. Biannual rabies border meetings (Mexico-USA)
 - 1.7.13.2. Europe – fox (Until 1990 projects were considered field trials; after that date, the EU supported full scale elimination projects within the EU). Countries that are ‘neighbouring’ to the EU can benefit from EU co-financing if they have established rabies elimination programmes that meet the EU standards.
 - 1.7.13.3. National level – (Strong political commitment, legal basis; National rabies committees and round-tables; Involvement of all stakeholders; Diagnostic network & surveillance)
 - 1.7.13.3.1. International level –(Regional WHO meetings on rabies control (West Europe / Middle & East Europe); EU: 50% co-financing of

ORV campaigns; Bilateral meetings with neighbouring countries;
Scientific conferences (WHO/OIE); Rabies Bulletin Europe)

1.8. Raising awareness: WRD events 2007 – Deborah J Briggs

- 1.8.1. Global call to action to do something about the continuing tragedy of rabies across the world
 - 1.8.1.1. Preparation of logo to identify WRD; slogan - *Working together to MAKE RABIES HISTORY™*; Educational toolkits (teachers, veterinarians, physicians, media etc.); publications; securing partnerships
 - 1.8.1.2. Provides a means to disseminate information
- 1.8.2. Achievements of WRD 2007:
 - 1.8.2.1. Events held in at least 74 countries: > 400,000 participants involved; > 600,000 animals vaccinated; > 54 million people educated through media outreach
 - 1.8.2.2. New/re-energized rabies prevention campaigns initiated by several governments
 - 1.8.2.3. Created a global community of rabies workers
 - 1.8.2.4. Fund raising
 - 1.8.2.4.1. CVMs involved raised money in assoc with their events for WRD
 - 1.8.2.4.2. Matching funds from the Canadian Chapter of Veterinaires Sans Frontieres/Veterinarians Without Borders (VSF/VWB)
 - 1.8.2.4.3. More than 40 proposals submitted to ARC for the funds raised from WRD 2007
- 2. Who is willing to support the Partners for Rabies Prevention informal group and WRD and what does each participant bring to the table?
 - 2.1.** Participants in attendance agreed that everyone (scientists, industry, NGOs, etc) will need to put their own agenda aside in order to move rabies prevention forward on a global level
 - 2.2.** All participants agreed to support WRD to their best ability
 - 2.3.** Specific strengths from individual participants of the meeting included:

- VLA: *laboratory expertise, advocacy, support of WRD, training,*
- PI: *laboratory expertise, training & courses, surveillance, translation in French of educational materials, EU supported program (North Africa)*
- PI: *support of WRD, expertise in research & courses on rabies and other zoonoses, antiviral and vaccine, reagents, BSL 4 lab for research*
- CDC: *promotion of one medicine approach, expertise, legacy commitment to the disease, training of epidemiologists, availability of fellowships, provision of stuff (donation of many biological tools developed at CDC including mAbs and other molecular tools, reverse genetics, dRIT), technical training for rabies prevention activities including development vaccines and diagnoses etc, in-country training*
- Sanofi Pasteur: *support for WRD, commitment to long-term approach, educational tools (i.e. video footage), governmental contacts, communication, support of Africa and Asia rabies expert bureaus (AfroREB/AREB),*
- Fondazione Spinola: *support of WRD*
- Novartis: *support of WRD and awareness campaigns in various countries, internal communications, solid clinical development of vaccines (i.d.)*
- WHO: *long history of supporting rabies at global level, working to get rabies back on the WHO agenda (WHO director for initiative for vaccine development), network of WHO CCs including Asia, initiation/organization of regional elimination programs and technical committees (Asia, America through*

	<i>PAHO,...), partnership/collaboration with FAO/OIE, with GAVI (rabies vaccines),</i>
	<i>partnership with NGOs for WHO no problem but problems with private sector (possible conflict of interest),</i>
<i>ARC:</i>	<i>advocacy, link with wildlife conservation agencies, bring in other rabies foundations</i>
<i>WVA:</i>	<i>70-80 countries, contacts with vets in these countries, communications to other vets throughout the world, advocacy, collaboration agreements with OIE, WHO, FAO, world veterinary day support of WRD,</i>
<i>Merial:</i>	<i>continuous involvement in veterinary public health programs, sponsoring of the WRD using own distribution channels (150 countries), educational film on one-medicine approach, dedication of resources, work on corporate citizenship (education/capacity building), help for strategic vision, strategy design and impact (logistics, distribution channels) – but: input dependent on results!</i>
<i>OIE:</i>	<i>emphasize rabies in global animal health, global evaluation of veterinary services (PVS) followed up by gap analysis, initiative on new human-animal interface (FAO/OIE/WHO), AI as a model: redirection of money from donors for AI to rabies in hot spot areas, building of OIE twinning laboratory partnership, support of WRD,</i>
<i>FLI:</i>	<i>WHO CC, OIE reference lab (activities according to terms of reference), laboratory and epidemiological expertise, expertise on planning/execution/evaluation of ORV campaigns in wildlife, dog vaccination,, support of WRD</i>
<i>Crucell:</i>	<i>development of an innovative mAb cocktail for rabies PEP, advocacy and contribution in building awareness, bringing excitements and new solutions to the rabies field, vaccine industry consistency representation on the GAVI working group, sharing available information and inform progress</i>
<i>Intervet:</i>	<i>support of WRD, corporate citizenship, set-up of communication strategy,</i>
<i>FAO:</i>	<i>use the momentum of AI, support one world – one health, rabies has good chance to be put on the agenda of FAO, support of WRD, support strengthening of veterinary services, engaging regional veterinary health centers and networks, extra budgetary funding (allocation of money from outside), technical assistance with demonstration project</i>
<i>GATES:</i>	<i>funding of demonstration projects, strengthening and support of activities</i>

3. Example of one informal group “GCDPP” (Global Collaboration for the Development of Pesticides for Public Health) – Kate Aultman

- Secretary housed at WHO,
- first such group to involve industry,
- membership is informal,
- GF supporting WEB site, exchange of information
- development of new tools (limited), opportunity to air issues,
- practicalities of vector control,
- creation of a vision what the group wants to be achieved

3.1. Translated into the rabies domain, the main questions would be:

- 3.1.1. What would the members of the Informal PRP Group like to achieve through this group (e.g. vision)?
- 3.1.2. A clear articulation of how rabies free status will be maintained: cost-effectiveness/barriers

3.1.3.

4. What does the rabies community want to achieve through the Informal PRP Group?

Output	Contributors	Resources	Timeline/scale
Vision Elimination of suffering from dog-mediated human rabies	Informal PRP Group ARC	Expertise, time and leadership of the group members	Long-term (dates) High level global
Mission Elaborate a comprehensive plan/program to achieve that goal			
Strategic goal plan Elimination of dog-mediated rabies worldwide, Prevention of human rabies Control of wildlife rabies			
Road map Elimination of dog-mediated human rabies: South-East Asia by 2020 Latin America by 2010 North Africa by 2020 Sub Saharan by 2050	Expert groups <ul style="list-style-type: none"> • region/countries • expertise • human • animal 		Mid-term: 0-5 years Mid level: regional
Strategic implementation/Action plan 1.communications 2.pilot project – it can be done 3.advocacy/awareness/policy building 4.capacity building (epidemiology/surveillance / diagnostics/vaccination) 5.Research and development 6.fund raising			
Projects (to be updated as groups define their goals) 1. pilot projects <ul style="list-style-type: none"> - Tanzania - KZN/South Africa - Philippines 2. Communications - WRD	Project team <ul style="list-style-type: none"> • WHO working group • ARC • Informal PRP Group • Other stakeholders 		Short-term: Low level: country/field of expertise
Milestones, accountabilities (for every action plan) Deliverables (benefits,timing			

4.1. Goal/vision:

4.1.1. Elimination of dog-mediated rabies worldwide

4.1.1.1. Deadlines include: SE Asia (2020); L America (2010); N Africa (2020); Sub Saharan (2050)

4.1.2. Prevention of human rabies

4.1.3. Control of wildlife rabies

4.2. Activities that will be necessary to achieve goal/vision (alphabetical):

4.2.1. Advocacy – policy building

- 4.2.2. Capacity building – epidemiology/surveillance – prerequisite for sustainability
- 4.2.3. Communications – dissemination of information to all parts of the world
- 4.2.4. Pilot projects – proving it can be accomplished
- 4.2.5. Research and development – new tools to make the job easier (e.g. contraception for the dog population)

4.3. Group participation: The informal group is to be open for other participants that have something to bring to the table to help move global rabies prevention forward, e.g. potential other participants may include (PAHO, WSPA, Veterinary companies, industry, etc)

5. Development of a Road Map for global rabies prevention

5.1. General Coordinator for Informal PRP Group: It was agreed that until the next informal meeting, Deborah Briggs would serve as the General Coordinator for the Informal PRP Group. The next informal group meeting is scheduled to occur in conjunction with the RITA meeting. The date agreed upon was October 4, 2008.

5.2. Specific activities: Five areas were agreed upon as specific activities and five volunteers/nominees from the participants were initially requested to serve as coordinators for group activities. The coordinator of each group should involve additional stakeholders and contributors, as required, to assist in achieving the objectives of the group (several stakeholders or contributors from a same institution or company are also possible). The General Coordinator for the Informal PRP Group will ensure an appropriate balance between representative stakeholders and contributors. Groups were defined as follows:

5.2.1. Advocacy – Still under discussion

5.2.1.1. Group contributors - Francois-Xavier Meslin, Kim Doyle, Caroline Schumacher, Michael Attlan, Katinka de Balogh

5.2.2. Capacity Building – Dr Michael Attlan

5.2.2.1. Group contributors: Hervé Bourhy, Gideon Bruckner, Francois-Xavier Meslin

5.2.3. Communications – Dr Karin Jager

5.2.3.1. Group contributors: Natalia Cediol, Thomas Müller, Kim Doyle, Ferdinando Borgese, Michael Attlan, Katinka de Balogh, Leon Russell

5.2.4. Pillot Projects – Dr Thomas Mueller

5.2.4.1. Group contributors: WHO Pilot Project group, Gideon Bruckner, Francois-Xavier Meslin, Charles Rupprecht, Anastasia Pantelias, Anthony Fooks, Noël Tordo, Hervé Bourhy, Thomas Müller, Ferdinando Borgese, Michael Attlan, Leon Russell

5.2.5. Research and Development – Dr Charles Rupprecht

5.2.5.1. Group contributors: Hervé Bourhy, Anastasia Pantelias, Anthony Fooks, Noël Tordo

5.3. The objectives for each group to complete and present at the next meeting include:

5.3.1. **Gap analysis** - what is in place, what is missing, goals and what is achievable

5.3.2. **Actions** – plan, how can the goal be achieved?

5.3.3. **Deliverables/timelines** - what is realistic?

5.3.4. **Cost analyses** - what will it cost?

5.4. Brainstorming of ideas. Participants expressed ideas that could be considered for completing the group objectives (as outlined above) and eventual development of a

Road Map for the elimination of canine rabies. (Advocacy and Communications activities are listed together):

5.4.1. Advocacy and Communication brainstorming ideas:

- Communication toolkit targeting pet owners (poster, leaflet, audiovisual)
- Communication toolkit on human rabies prevention targeting global population (poster, leaflet, audiovisual)
- TV spots and communication plan, create a song for the control of rabies world wide
- Further develop rabies bulletin in Europe
- Develop a global education library [including ORV of wildlife, compilation, development of a specific website, prepare training slide kit for professionals (physicians and nurses), documents for training and advocacy and translation into several languages]
- Improve the awareness in China involving and taking on board more physicians
- Create information point during the main congress in endemics
- Linking veterinary and medical schools through world rabies day
- Newsletter for rabies prevention activities and materials to be distributed through all networks
- World rabies day activities
- Identify target groups: industry, universities, human health and animal health professionals, public media (printed, internet, TV), experts, human and animal health organization, prepare communication plan per target group
- Prepare communication strategy including tactics and timelines
- Yearly one day massive rabies vaccination campaigns (Brazil model)
- Assess different communication strategies
- Contact the existing regional local networks, associations, companies or groups who may be interested in supporting the initiative
- Concert with charismatic artist to enhance the awareness on the dog vaccination as the best tool to avoid deaths
- Participants to activists – WRD – development of community for change
- Follow up marketing campaign for WRD
- Use ‘new’ communication tools e.g. podcasts, blogs YouTube
- Prepare media toolkit (WRD, ARC, rabies)
- Identify topics where documents are missing and generate them
- Take a picture for a friend around the world with your vaccinated dog

- Create a website for Informal PRP Group

5.4.2. *Capacity building*

- improve data collection and surveillance
- epidemiology: support implementation of diagnosis laboratories in each endemic country (training, reagents)
- epidemiology: identify country based champions to improve epidemiological data collection
- Capacity: assess diagnostic facilities and needs
- Capacity: evaluation of veterinary service delivery and gap analysis
- Africa: promote reporting of data to WHO-OIE
- Africa, Asia: census of the countries where rabies is a notifiable/reportable disease and encourage the other countries to do so

5.4.3. *Pilot project*

- epidemiological assistance in pilot projects (evaluation of vaccination campaigns)

- determine “closed” areas by GIS
- PEP: register more comfortable schedule to improve the accessibility rate and the patient compliance (like Zagreb)
- Proposal development for demonstration project for Gates Foundation
- Demonstration project (technical advice)
- EU rabies elimination project Turkey
- Pilot projects: target implementation of pilot project on pre-exposure prophylaxis in children population living in risk areas
- Catalyze small-scale initiatives in Tanzania along model of AFYA Serengeti project
- Expand the intra dermal regions especially where the vaccine availability is poor (South East Asia)

5.4.4. Research and Development:

- develop a stronger human vaccine to increase preP and improve costs/benefits
- cost-effectiveness studies in countries in order to quantify and give evidence to the governments of the benefits of vaccination
- promotion/ongoing development of oral contraceptives
- Pan-lyssavirus vaccines
- new serological tests for rabies (pseudotypes)
- develop rabies simulation
- surveillance of rabies in Sudan (ongoing project)
- rabies elimination project Turkey
- lab twinning twinning projects
- Improved use of bioinformatics for Dx, biologicals, etc.
- Cytokinogenic human vaccines w/o need for RIG
- improved ORV for dogs, e.g. CAV2
- anti contraceptive vaccines

6. Conclusions (Responsible person and timelines)

ACTION ITEM	WHO	DATE
1. Date of next meeting – in conjunction with RITA – ATL 2. Need to nominate a Chair to guide the next meeting in ATL	All All	Oct 4/08 July 1/08
3. Investigation of provision of an easy method to communicate large files etc	MA	June 1/08
4. Objectives of each group defined (5.3 above)	Groups	Oct 4/08
5. Definition of a vision for the group	Group leaders, DB, CS, NT	Oct 4/08
6. Creation of a logo – is it really necessary?	KJ, Comm group	Oct 4/08
7. List of contact partners	Group leaders, DB	July 1/08
8. Creation of a website for Informal PRP Group	DB, ARC	August 15/08
9. Preparation of a press release for “Rabid Bytes” – circulated and signed off by all	DB	July 31/08
10. Invitation to group chairs to specific RITA session to give presentation on the ideas and objectives of the Informal PRP Group and groups	DB to check with A Tumpey at CDC	May 30/08
11. FAO mission statement template sent to DB to review as an example by NC	NC	May 30/08

APPENDIX
Participants List
Informal “Partners for Rabies Prevention” Group
Alliance for Rabies Control
May 6 – 8, 2008

FRIEDRICH-LOEFFLER-INSTITUTE

Dr Thomas Müller
Friedrich-Loeffler-Institute
Seestrasse 55
D-16868 Wüsterhausen, Germany
EMAIL: thomas.mueller@fli.bund.de

CENTERS FOR DISEASE CONTROL AND PREVENTION

Dr Charles Rupprecht
CDC
1600 Clifton Road MSG33
Atlanta, GA, USA 30333
EMAIL: cyr5@cdc.gov

PASTEUR INSTITUTE

Dr Hervé Bourhy
WHO CC for Reference and Research on Rabies Institut Pasteur
28 rue du Docteur Roux,
75724 Paris Cedex 15, FRANCE
EMAIL: hbourhy@pasteur.fr

Dr Nöel Tordo
Institute Pasteur
Paris, France
EMAIL : ntordo@pasteur.fr

VETERINARY PUBLIC HEALTH NETWORK (Red SPVET)

Dr Natalia Cediell
Red SPVET
Turin University – Italy
Faculty of Veterinary Medicine (Grugliasco)
Department of Epidemiology, Ecology and Animal Production
Turin University, Turin, Italy
EMAIL: natalia.cediell@unito.it

VETERINARY LABORATORIES AGENCY – VLA

Dr Anthony Fooks
Veterinary Laboratories Agency – UK
New Haw, Addlestone, Surrey KT15 3NB, UK
EMAIL: t.fooks@vla.defra.gsi.gov.uk

WORLD VETERINARY ASSOCIATION

Dr Leon H Russell, President
World Veterinary Association
33 Linda Lane
College Station, Texas USA 77845-9401
EMAIL: lrussell@cvm.tamu.edu

FAO

Dr Katinka de Balogh
Senior Officer, Veterinary Public Health
Animal Health Service
FAO
Via delle Terme di Caracalla
Rome Italy
EMAIL: Katinka.deBalogh@fao.org

WHO

Dr François Meslin
ADG/HSE
World Health Organization
1211 Geneve 27, Switzerland
EMAIL: meslin@who.int

OIE

Dr Gideon Brückner
OIE
12 Rue de Prony
7517 Paris, France
EMAIL : g.bruckner@oie.int

ALLIANCE FOR RABIES CONTROL

Dr Sarah Cleaveland
Division of Clinical Veterinary Sciences
University of Edinburgh
Easter Bush, Roslin, Midlothian UK EH25 9RG
EMAIL: Sarah.Cleaveland@ed.ac.uk

Dr Deborah J Briggs
Dept of Diagnostic Medicine/Pathobiology
College of Veterinary Medicine
Kansas State University
Manhattan, Kansas USA 66506
EMAIL: briggs@vet.k-state.edu

GATES FOUNDATION

Dr Anastasia Pantelias
Bill & Melinda Gates Foundation
Seattle, Washington USA
EMAIL: Anastasia.Pantelias@gatesfoundation.org

Dr Kate Aultman
Bill & Melinda Gates Foundation
Seattle, Washington USA
EMAIL: Kate.Aultman@gatesfoundation.org

SPINOLA FOUNDATION

Kim Doyle
Spinola Foundation
c/o Parly Company
12 Rue François Bonivard
Geneva, Switzerland
EMAIL: kim.doyle@attglobal.net

MERIAL

Dr Carolin Schumacher
Merial, Veterinary Public Health
29 Ave Tony Garnier
69348 Lyon Cedex 07, France
EMAIL: carolin.schumacher@merial.com

CRUCELL

Dr Olga Popova, MD
Crucell
Bern, Switzerland
EMAIL: olga.popova@crucell.ch

INTERVET

Dr Karin Jager
Intervet/Schering Plough Animal Health
P.O. Box 31
5830 AA Boxmeer, The Netherlands
EMAIL: karin.jager@intervet.com

NOVARTIS VACCINES and DIAGNOSTICS

Ferdinando Borgese
Novartis Vaccines and Diagnostics
Via Fiorentina 1
53100 Siena Italy
EMAIL: Ferdinando.Borgese@novartis.com

SANOFI PASTEUR

Michael Attlan
Sanofi Pasteur
2 Avenue Pont Pasteur
F 69367 Lyon Cedex 07, France
EMAIL : michael.attlan@sanofipasteur.com