European network for the prevention and control of zoonoses

Funded as a Network of Excellence within FP6 for 5 years from 1st September 2004
16 partner institutes: 10 countries, over 300 scientists

Including medics, veterinarians, epidemiologists, risk analysts, statisticians, immunologists, microbiologists, food scientists & molecular geneticists
Aims of Med-Vet-Net

- Improve the understanding, prevention and control of zoonotic, particularly food-borne, diseases in EU
- Raise awareness of zoonotic diseases in policymakers the general public
- Enhance skills and knowledge of European researchers in zoonotic diseases
Integration of partners

- Aims to generate a durable integrated structure to undertake Med-Vet-Net activities

- Management structure
  - “Virtual Institute” with democratically representative bodies for governance (Governing Board) & management (Co-ordinating Forum).

- Implemented in 3 overarching Workpackages by:
  - Project management team (UK)
  - Administration and finance team (Paris)
  - Communications Team (UK/Uppsala)
Core activities

- Research
- Communication
- Training and development
- Knowledge management
- Durable integration
- External collaboration
Strategic Scientific Plan developed in Year 1 by representatives of all partners

- 4 thematic areas
  - Epidemiology, Risk research, Detection/Control and Host-microbe interaction
  - Aim for multi-disciplinary & multi-partner workpackages in areas with gaps in knowledge or critical mass

To date 24 research work-packages commissioned

- 9 completed in first 18 months
- 1 completed at 24 months
- 15 now ongoing
Research

- Bacteria, parasites, viruses
- Food and non-food-borne
  - Salmonella
  - Campylobacter
  - E. coli
  - Q fever
  - Antimicrobial Resistance
  - Trichinella
  - Cryptosporidia & Giardia
  - Lyssaviruses
  - Hepatitis E virus
  - Anellovirus
  - Encephalomyocarditis virus (EMCV)
  - Tickborne encephalitis virus (TBEV)
Research

- New technologies
  - Geographical Information Systems;
  - Host transcript arrays;
  - Genomotyping; etc

- New tools
  - Prioritisation;
  - Consensus risk assessments;
  - Integration of economics; etc

- New approaches to old problems
  - PulseNet Europe;
  - Serosurveillance for disease pyramids;
  - Methods for source attribution

Over 55 peer-reviewed papers in published or in press & a further 25 in preparation
Research Workpackages

• Each Workpackage
  – has a Leader and Deputy
  – An agreed plan and funding for the next 18 months of activity
  – Management and administrative support as required
    • Plus regular management communications through dedicated newsletters and meetings for training and information
  – A web-based login-protected secure communication centre
  – Opportunity for regular face to face meetings for all members
  – Use of free webconferencing facilities (with webcams if wanted)
  – Access to training programme funds to develop workpackage expertise and skills
  – Access to additional resources to develop submission for further funding from EC, EFSA, etc

The facility to include external partners in both the meetings and in the research – at their own cost
Communications

- Dedicated Communications Unit
  - Professional science communicators
- Websites
  - Public & private
  - Working spaces
- Web-based communications
- Newsletter
- Press releases, Media response
- Contact point
- Training science communicators
Training and development

• Training courses and workshops
  – over 130 scientists internal & external trained
  – Epidemiology; GIS; bioinformatics; trichinella
  – PFGE/bionumerics; GSS

• Over 30 short term missions
  – 3 to 60 days
  – Open to external scientists to visit network labs

• 3 PhD studentships and 1 post doc fellow
Training and development

• Science Communications internship
  – Aims to provide intensive training in all aspects of science communication including
    • Web site generation, Media and publishing
    • Interviewing & Influencing stakeholders
    • Writing, press releases etc
  – Now 4 x 2-3 week modules
  – Free to Med-Vet-Net scientists
  – Open to external scientists at own cost - travel & subsistence
  – Next course starts in January
  – Contact Teresa Belcher, Communications Unit
Knowledge management

• Annual Scientific Meetings
  – Keynote speakers, open oral and poster presentations
  – Open to everyone
  – Next - St Malo 11-14th June 2008

• Deliverables
  – Over 150 documents delivered on standard techniques & procedures, databases, ring trials
  – Many publicly available –
    • Report 06-001: Towards an integrated approach in supporting microbiological food safety decisions

• Special Interest Groups
  – New, Emerging & Neglected Zoonoses
  – Wildlife Zoonoses
  – Host pathogen interactions
Durable integration

• Standardised and harmonised procedures
  – Ring trials
• Strain catalogues & collections
• Reagent catalogues & sharing
• Facilities/equipment sharing
• Joint publications providing strategic recommendations to policymakers
• Joint proposals to FP7, EFSA, national agencies
External Collaboration

- All research workpackages have external collaborators
- New projects include new partners
  - FP6 - EUUS-SAFEFOOD,
  - EFSA - Risk assessment salmonella in pigs
  - FP7 - Wildlife zoonoses, foodborne viruses, zoonoses in developing countries, GIS NoE, etc
  - And lead to other collaborations
- International representation of Med-Vet-Net
  - US, Canada, Russia, China
WP 31 tools to estimate & compare the disease burden in the community across Europe

- Studies suggest that there are many more *Campylobacter* cases in the community than reported
- This under-reporting will vary between countries
- Standardised ELISA tests using sera collections
- New collections required & collaboration open
• WP28 Methods of attributing human Salmonella and Campylobacter infections with different animals, food and environmental sources

• Four methods investigated:
  • microbial sub-typing
  • risk (exposure) assessment
  • analytical epidemiology
  • outbreak investigations

• Paper on harmonised concepts definitions of human illness attribution

• International meeting in collaboration with WP23 on disease prioritisation

• Training workshop completed
WP8/30 Campylobacter molecular epidemiology

CAMPYNET 1
- Development of international strain set to harmonise molecular typing methods
- Typed by most available methods
- Available from J Wagenaar, ASG, The Netherlands

CAMPYNET 11
- Further characterisation of strain set for
  - Virulence
    - in vitro invasiveness, adherence & toxin
    - Antimicrobial resistance

CAMPYNET 111
- developing collaborations between epidemiologists and microbiologists
- Critical reviews on host and pathogen perspectives
WP2 Comparison of Campylobacter risk assessment models: towards a European consensus model

- Compared 4 “Campylobacter in broiler meat” models developed in Europe
  - Presented at CHRO meeting 2007
  - Now developing consensus framework to harmonise EU approach
WP33 Early host immune responses to Campylobacter infection

- Susceptibility to infection is dependant on a number of factors including immunity and response to infection is poorly understood
- Standardised mice model of oral infection developed
- Mouse intestinal tissue investigated for host response using mouse host immune transcript arrays
Special Interest Group - Control & Prevention of Campylobacter in poultry

Will develop a network of enthusiastic scientists to

- Catalogue research groups, expertise and ongoing projects in Europe
- Focus on practical & feasible interventions through the food chain
- Meeting in spring/summer 2008
- Generation of research plan for New Workpackage to start September 2008
- Respond to planned call in FP7 2009
Conclusions

• *Campylobacter* is the major cause of reported zoonoses in Europe

• Med-Vet-Net is responding to the need for control and prevention of this disease by
  – Strategically addressing research needs across the whole food chain
  – Integrating the activities of the major campylobacter groups in Europe
  – Providing a multidisciplinary network of expertise, resources and skills
  – Delivering tools for policymakers & other stakeholders
  – Developing a new network of scientists to respond to European needs for prevention & control
• How to find out more?
• [www.medvetnet.org](http://www.medvetnet.org)
• Register for regular newsletters automatically delivered to your email box
• Annual Reports
• Deliverables & publications
• Attend Annual Meetings
• Join Workpackages
• Communications@medvetnet.org