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June 2006

In this issue of Med-Vet-Net News we continue our Workpackage overviews with Workpackage 27 – Trichi-MED – Harmonization of Trichinella infection control methods, quantitative risk assessment in pigs and an early diagnosis in humans to increase treatment efficacy. We report on the first PulseNet workshop and a new Network of Excellence: EPIZONE.

Kumar Sivam announces a new collaboration opportunity for research on neglected zoonoses.

We have latest updates from the Admin Bureau and Project Management team, as well as details of our photo competition.

Med-Vet-Net Communications Unit

# Trichi-MED overview

Workpackage 27 – Harmonization of *Trichinella* infection control methods, quantitative risk assessment in pigs and an early diagnosis in humans to increase treatment efficacy – Trichi-MED

Trichinella is a foodborne parasitic pathogen, which causes hundreds of infections in humans in Europe each year, and is listed in the EC Zoonoses Directive. The routine meat inspection of pigs, horses and game animals for *Trichinella* is estimated to cost the EU nearly €500 million annually.

In humans, infection with trichinellosis is characterized by fever, myalgia (muscle pain) and periorbital oedema (swollen eyelids and facial bloating) and in some cases (<1%) death from myocarditis (inflammation or degradation of heart muscle) or central nervous system involvement. Human trichinellosis remains a serious problem in EU countries as evidenced by outbreaks in France (March 2006 after wild boar meat consumption), Germany (last outbreak in April 2006 after pork consumption), Italy (in Sardinia in December 2005) and Spain (in February 2006). In addition in several New and Associated Member States, trichinellosis is recognized as an emerging disease with outbreaks occurring every year particularly in Bulgaria, Estonia, Latvia, Lithuania and Romania. In neighbouring countries such as Byelorussia, Croatia, Georgia, Russia, Serbia and Ukraine, the prevalence of

Trichinella infection in humans,

domestic pigs and in wildlife

is high. From a medical point

of view, the re-emergence of

trichinellosis, and associated

treatment problems, clearly indicate the need for improvements in drug formulation/administration and for guidelines on these issues.

Recent epidemiological studies and results, from the EC-funded TRICHIPORSE contracts, have shown that four *Trichinella* species are present in Europe. Two species – T. spiralis and T. britovi – are common in central and southern regions. In domestic pigs T. spiralis is more common than T. britovi, while in wild boar the two species are present in the same frequency. Interestingly, in sylvatic carnivores (foxes and wolves), T. britovi is more prevalent than *T. spiralis*. As the characteristics (e.g. infectivity, freeze tolerance) of these Trichinella species differ significantly, knowledge of their epidemiology is central for risk evaluation.

The epidemiology of human trichinellosis differs between regions within Europe. In central and eastern regions, and in Spain, the disease is primary transmitted to humans from pork products. In contrast, horsemeat is considered the major source of infection in France and Italy. However, it appears that this horse meat originates from central and eastern European countries (Romania, Serbia and Poland), where the prevalence of infection in pigs is known to be high.

This epidemiological evidence suggests that environmental contamination is located where the prevalence of *Trichinella* infection in wild animals is high. However, the mechanisms allowing *Trichinella* to persist in an ecosystem are only partially understood. In particular the role of small mammal species in the transmission of this parasite remain unclear, for example *Trichinella* prevalence rates found in carnivores (e.g. red fox) are generally rather low.

# "Human trichinellosis remains a serious problem in EU countries..."

Thus some important questions regarding transmission from food and the environment remain unanswered. For example: What is the reservoir in wildlife and how is it possible to explain the persistence of the organism even when the apparent prevalence is very low? What is the risk for humans in such areas after consumption of pork or pig-derived products?

In addition the needs for monitoring and control remain high. In those New and Associated Member States with a high *Trichinella* prevalence, optimized meat control is particularly important and evidence suggests that the validation and quality control of existing

monitoring procedures requires improvement.

### Trichi-MED

Trichi-MED is Workpackage 27 of Med-Vet-Net and builds on several previous European contracts: TRICHIPORSE (contract QLK1-2000-01156) which started in 2000 and which was later extended to a Lithuanian partner (contract QLK1-2002-02826). These first EU contracts focused on developing improved diagnostic



Trichinella

tests for *Trichinella* in pigs and horses. In September 2004 the Med-Vet-Net workpackage (WP 11), TrichiNet, was started with the aim of establishing a European network for the risk assessment, detection and control of trichinellosis. This network:

- developed a central database of prevalence and epidemiology of *Trichinella*;
- assessed available technologies for meat inspection;
- established a central repository for standardization;
- disseminated research information to stakeholders;
- developed a road map for future research on *Trichinella* and trichinellosis.

Amongst the main outputs of TrichiNet were: the organization of an International Symposium on Nematode parasites ('Nematode Parasites Symposium: genetic diversity; virulence genes; diagnosis and control methods'); supporting evidence for one patent obtained with the cooperation of Changchun University (PR China) and a Mexican student from the CINVESTAV of Mexico; six peer reviewed papers published or submitted; and data included in one EFSA report (Opinion of the scientific panel on biological hazards on the 'Request for an opinion on the feasibility of establishing Trichinella-free areas, and if feasible on the risk increase to public health of not examining pigs from those are for *Trichinella* spp.'. EFSA journal (2005), 277, 1–37. EFSA Q2005-001).

Trichi-MED, as a new Workpackage of Med-Vet-Net, will focus on three major aspects:

- 1. 1. Human surveillance with the unique opportunity to include several hundreds of fully characterized human cases in EU and neighbouring countries.
- 2. Veterinary control: based the previous results from TrichiNet, a standard method will be proposed for national reference laboratories and ring trial tests will be designed and organized.
- 3. 3. Risk assessment by integrating animal and human case data from those regions where the emergence of *Trichinella* in pigs has been followed by human cases. These data will enable an estimation of the risk of infection to humans in areas where porcine trichinellosis has occurred. This risk assessment model will inform proposed risk-based *Trichinella* regulations to be implemented in the near future.

One major focus will be the harmonization of the veterinary and public health control strategies

between national reference laboratories in the EU. In addition, reservoir(s) in areas where *Trichinella* is emerging will be investigated in order to understand parasite transmission routes. Such information may lead to new approaches to estimate human infection risks. To this end, the integration of human and animal data from outbreak investigations will also provide valuable information.

### Workplan

Workpackage 27 will provide an integrated approach to research on trichinellosis (see Figure 1). The workpackage activities are divided into five main tasks. The first two tasks focus essentially on the diagnosis and treatment of human trichinellosis. This work will largely be funded from sources external to Med-Vet-Net. These tasks include the development of a scheme for diagnostic and treatment procedures in suspected cases of human trichinellosis and the creation of a system to collect and exchange information. For example, an algorithm to precisely define acute cases of trichinellosis has been written and recently used in a Spanish outbreak. In addition, comparison of the sensitivity and specificity of existing and newly developed tests for the diagnosis of the early stages of human trichinellosis will be undertaken. As part of this, the suitability of recombinant peptides of two Trichinella stages (newborn larvae and muscle larvae) for early human diagnosis will be evaluated. Preliminary technological developments to this end have already been undertaken in TrichinNet.

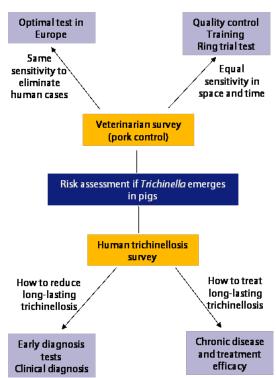


Figure 1. Integrated approach to research on trichinellosis

The third task will compare the accuracy of the artificial digestion methods currently used for routine *Trichinella* inspection in pork in compliance with EU legislation (Directive 77/96/EEC). In this context, the two Stomacher methods (methods IV and V and the magnetic stirrer method (method VI) will be especially considered. Using the results of this comparison, a 'gold standard method' for the direct detection of *Trichinella* will be established.

The fourth task is to continue to maintain the Trichinella repository, which provides a source of reference materials for Trichinella researchers. Trichinella isolates and strains from infections in humans and animals have been collected in previous studies and are maintained at the International Trichinella Reference Centre, (ITRC) at ISS (Rome, Italy). This Central Repository has been the official reference laboratory for both the OIE and ICT since 1988 and 1992, respectively, and is supported by these two organizations. This laboratory is now the EC Reference Laboratory for Parasites. Procedures to maintain and transport Trichinella isolates, as well as to collect and preserve the parasite larvae, were defined in TrichNet. Two reference strains for each species and genotypes of Trichinella identified to date are currently maintained in vivo.

Continued epidemiological surveillance will be performed in areas where the prevalence of infection is high. The identification of any larvae obtained will be carried out using a multiplex-PCR protocol in order to ensure comparability

of new epidemiological results with the results previously obtained in TrichiNet and those present in the literature.

The final task will aim to identify the reservoir(s) of infection and develop a quantitative risk assessment model for pork consumption. For these purposes, one or two geographically defined area(s) (example from one of the islands in the Mediterranean Sea where *Trichinella* recently emerged) will be selected in collaboration with the local authorities. The status of Trichinella in the wildlife in these area(s) will then be defined and used to provide: (i) an epidemiological estimation of the geographic distribution of the infection; and (ii) inform a model to design plausible scenarios for the evolution of this distribution.

# PulseNet training

## First PulseNet Europe training course

With funding from the Training and Personal Development task of Workpackage 2 (Strategic Scientific Integration), the first PulseNet Europe PFGE laboratory and image analysis training course was organized at the Health Protection Agency (HPA), Centre for Infections, England, 6–10 February, 2006.

The 15 participants came from food, public health and veterinary laboratories from Austria, Czech Republic, Denmark, Finland, Germany, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Romania, Spain and Sweden.

Participants were also very interested in other PCR-based methods such as plasmid analysis, variable number of tandem repeats (VNTR) and multi-locus VNTR (MLVA), which were presented at the course by trainers and invited speakers. Further, the training course provided participants with a good opportunity to meet each other and share their experience, for example, of troubleshooting.

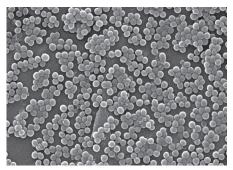
The next step for the training course participants will be the European Quality assurance system (EQAS) organized by PulseNet Europe which will certify them to submit the analysed gel images directly to the PulseNet Europe central database.

Susanna Lukinmaa PulseNet Europe coordinator

# Neglected zoonoses

# Collaborate to capture research opportunities

Many of us work on zoonoses that we feel should receive more attention and specifically more funding because what is today's minority interest can be come a major public health problem tomorrow.



#### MRSA

This threat is recognized by the European Commission and it is likely that Framework 7 (FP7) will acknowledge this and there may well be a call within FP7 for research into some neglected zoonoses.

To maximize our chance of being successful in FP7 calls, or any other research bids, we are pursuing an exploratory project to create a number of directories of people who are interested in several neglected zoonoses. These directories will contain not only interested people within Med-Vet-Net but also the details of relevant partners from outside our formal network.

We aim to start by highlighting the following diseases: bartonellosis; borreliosis; rickettsiosis; anaplasmosis and erlichiosis; Q fever; chlamydiosis; MRSA; *Streptococcus suis*; Flaviviruses; hepatitis



PulseNet training participants

The first part of the week-long training course included a three-day theory and hands-on laboratory course in which participants were introduced to the PulseNet standardized protocol



**PFGE** workshop

for *Salmonella, E. coli* and *Listeria monocytogenes*. The second half of the course comprised a two-day theory and hands-on course on the PulseNet Europe customized BioNumerics database and Communication system (PNE forum).

## **EPIZONE**

On 13 June 2006 the EU-funded research project EPIZONE was launched at the Centre Albert Borschette, Brussels.

EPIZONE is a Network of Excellence supported by the EU's Sixth Research Framework Programme with a total EU contribution of €14 million. EPIZONE aims at improving research on preparedness, prevention, detection and control of epizootic diseases within Europe to reduce the economic and social impact of future outbreaks of foot-and-mouth disease, avian influenza, classical swine fever and other relevant epizootic diseases such as bluetongue and African swine fever.

Similarly to Med-Vet-Net, EPIZONE will develop an organizational structure based on a 'Virtual Institute'. It will ensure common access to resources such as collections of clinical materials and strains, expertise, high-containment facilities, animal facilities and specialized equipment. It will establish structured training including practical courses and 'distance learning', and opportunities for mobility of scientists. It will also create teams of 'experts' for acute needs. EPIZONE will establish links with other groups and networks outside the EU.

More information on EPIZONE is available at: http://ec.europa.eu/research/press/2006/pr0706en.cfm

E virus; borna disease; and parasitic diseases.

It is important to emphasize that this is not the end of the process.

- The list above may well change following discussions.
- Anyone can suggest anything, and I will try to help them collate the information.
- We want to address the needs of FP7 at a later date.

In the near future, colleagues will be contacting institute representatives and others to gather this important and foundation-building information. It will be really great if everyone feels that they can contribute to this.

If you want to know more, or feel that your own favourite neglected disease is being neglected by us please contact me.

Kumar Sivam email: k.sivam@vla.defra.gsi.gov.uk Tel: +44 (0)7795 060716 http://www.medvetnet.org/cms/ templates/doc.php?id=80

## Project management

## **New working practices**

As many of you know, the Project Management Team has been working hard on finalizing the reports and deliverables from the completed and ongoing Workpackages in time for the Annual Report. This month the Communications Unit has completed the development of a new electronic office

area within the private website and which can have restricted workspaces for working documents. The Project Management Team now have a restricted-access webspace – 'Member Workplace' – for the placement of reports and deliverables for the approval process by the Co-ordinating Forum, Governing Board and Advisory Panel. Members of these bodies can only access the workspace area once they have activated their individual log-ins. The workspace has opportunities to make comments and deliver revisions and members of the

continues next page



Collaboration tools available in Workplace area of private website

## Science communication internship

As part of its overarching 'Spreading Excellence' Workpackage 3, Med-Vet-Net is offering positions for a Science Communication Internship. The Internship is open to any current student, researcher or staff member of the Med-Vet-Net partner institutes. There is limited opportunity for external participants to attend modules at their own cost. After an evaluation of the first 3-month full-time internship, it has been decided to offer future training as modules to make it easier for people to participate and fit into their current work commitments. While the final programme is still currently being designed, a brief outline is given below. Each module will run between 2 and 4 weeks.

**Module 1: Communication – Why and How?** – Why do we need to communicate? What happens if we don't? Covers all essential skills needed for successful communication such as writing, presenting, networking, interviewing, being assertive etc. (NB: It is compulsory to undertake this module before completing any others)

**Module 2: Influencing the Media and Publishing** – Examines two-way communication with the media so we can understand each other's needs. Topics include broadcasting (TV, radio), press (newspapers, magazines, journals), writing press releases, media skills, desktop publishing (InDesign) and public relations.

**Module 3: Influencing Stakeholders** – examines communications with scientists, decision makers, government, industry, NGOs, museums, schools and the public. You will gain skills in influencing, networking, writing proposals, organising conferences and events.

**Module 4: Virtual Communications** – a look at new and emerging technologies. Topics include web design, online communications, graphics, basic HTML. Some assignments will be pre-set and work will be required from participants while they are located at their home institute. Following completion of the modules, it is expected that participants will return to their Institute and apply the skill+s learnt by communicating the work of Med-Vet-Net in their country, as well as assisting the Med-Vet-Net Communications Unit with the dissemination of information throughout Europe.

During the Internship modules, the candidates will be mainly located at the offices of the Society for Applied Microbiology in Bedford, UK, with some additional travel throughout Europe to other partner institutes and Brussels. Accommodation, travel and associated expenses will be provided.

The exact timing and work structure of the modules is currently being finalised, but it is proposed that Module 1 will be offered from 15 October 2006, with subsequent modules in early December, early February, and late March. Repeat modules will be run over the next three years.

Please send expressions of interest to Teresa Belcher: teresa@sfam.org.uk

Co-ordinating Forum, Governing Board and Advisory Panel have only 4 weeks to comment on these documents before they are available to the EC and, if relevant, publicly distributed.

### **Working with EFSA and ECDC**

On the 13th June an informal meeting was convened between Med-Vet-Net, DG Research, EFSA and ECDC to discuss opportunities for active collaboration. Both EFSA and ECDC have representatives (Marta Hugas and Andrea Ammon respectively) with observer status on the Med-Vet-Net Advisory Panel. This hopefully enables both European agencies to be aware of our activities. Although, the constitutions of such agencies appear to preclude them actively working with a Network of Excellence, like Med-Vet-Net, they both use the expertise of individual members of our network. In fact from the recent call from ECDC for expert panel members over 40 scientists from our constituent partners were named. The number of Med-Vet-Net members on EFSA expert panels is unknown but must be significant. This means that as a group of European experts, Med-Vet-Net will continue to input data and advice needs into EFSA and ECDC. In addition, it was agreed that EFSA and ECDC will participate in relevant research workpackages, at their own cost, and that opportunities for joint training programmes will be investigated. Finally, we are actively looking at the opportunity

for Med-Vet-Net to take short-term missions at ECDC or EFSA to improve our contacts with these agencies.

## **Club 5 Annual Meeting 2006**

From previous comments in this newsletter, you may recall that Med-Vet-Net was born from an ongoing collaboration between the government veterinary institutes in the United Kingdom, The Netherlands, France, Sweden and Denmark. This ad hoc organization is now called Club 5 and meets on an annual basis to formulate polices for collaboration. Representatives of Med-Vet-Net (Diane Newell and Andre Jestin) attended this meeting held at Afssa in Paris 21-22 June and presented a progress report. Our network activities were highly praised by these founder members.

#### **EPIZONE**

Another major output of Club 5 has been the new Network of Excellence, EPIZONE, which was launched on 1st June 2006 with a kick-off meeting in Brussels. The main strategic objective of EPIZONE is to improve research on preparedness, prevention, detection, and control of epizootic diseases by improvement of excellence through integration and collaboration while taking into account the public health concerns of consumers and other stakeholders throughout the food chain. The network

comprises 18 institutes from 12 countries, FAO and one SME. The network website provides further information on objectives and structure at: http://www.cidc-lelystad.wur.nl/UK/research/international+cooperation/epizone/

It is with pride that we note the EPIZONE has largely adopted the model provided by Med-Vet-Net for its management structure, integration and research activities. We wish them success in the future.

**Diane G Newell** 

# Private website

### **Individual logons reminder**

Just a reminder that the Med-Vet-Net private website now has individual logons. The old 'mvn' logon will soon be removed. This means that you won't be able to use the private website until you have created a new account for yourself.

In order to create a new account:

- 1. Go to the membersite (login as 'mvn' as usual).
- 2. Click on 'Create account' on the menu bar (bottom, left) and follow the instructions. You'll be sent an email message and you'll have to confirm by clicking on a link in that message.

If you have any problems with logons please contact communications@ medvetnet.org

Photo competition
UIN! WIN! WIN! WIN

'A picture can say a thousand words' and the Communications Unit is looking for just that picture. We need an image that encapsulates Med-Vet-Net and the work of the Partner Institutes. Competition entries can be photographs or illustrations so it's time to get snapping or drawing!

The winning entry will be used on the cover of the 2006 Annual Report with acknowledgement of the winning entrant, who will also receive a special Med-Vet-Net prize.

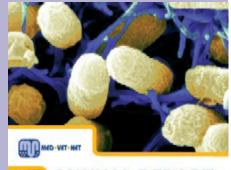
#### **Entry details**

All entries must be received by 1st September 2006.

Please send us original colour photos, slides or illustrations (which we will return after the competition has closed) or high-quality digital images (in Tagged Image File Format (TIFF) and at least 2600 pixels in width). For now, digital images should be sent in on CD-ROM (FTP details to follow). Colours of electron microscopy images can be changed as desired.

Please include with your entry an informative caption, including names of any people appearing in the photo. Ensure you have copyright to use the image.

For more information contact: communications@medvetnet.org





The Communications Unit is always grateful to receive images for use in Med-Vet-Net publications so please continue to send us any suitable photos or illustrations.

# Admin Bureau update

#### **Finances**

All partner institutes have now received the first payment of the second grant from the EC. This money will fund Workpackages started in March 2006 until February 2007. In order to avoid any financial underspend within the second year report, Workpackage expenditure should not be delayed.

Monies remaining unspent from the first Joint Progamme of Activities have now been identified and will be reallocated by agreement with the Co-ordinating Forum.

### Web conferencing

As part of improvement of networking and new electronic communication tools to be put in place within the network, a web conferencing service called WebEx [see Med-Vet-Net Newsletter May 2006] has been contracted and will be promoted within the network. WP01 and WP03 will jointly manage this service for the network by co-ordinating, and hosting web meetings, and training members to use WebEx.

Using WebEx, it is easy to organize and hold live audio—video electronic meetings in which documents can be shared, edited, and approved online. WebEx is easy to install, run and use. This tool should allow network members to collaborate more easily than has been previously possible at a distance.

The network will distribute up to 100 webcams to Institute Representatives and Workpackage participants. The Webconferencing system will be fully operational by the end of summer 2006.

### **Future management meetings**

The following meeting dates have been agreed:

- A meeting with DG Research and the network EC reviewers, on 13th September at Afssa, Ploufragan, Britanny, France, to review Med-Vet-Net progress in the second year.
- The Co-ordinating Forum Meeting No. 5, organized by VMRI, 27–28th September at the Academy of Sciences in Budapest, Hungary.
- The Governing Board Meeting No. 4, organized by the BFR, 30th–31st October at the BFR offices in Berlin, Germany.

Dedicated webpages for each meeting have been created on the private website. All relevant information for these meetings will be available on these webpages.

**Admin Bureau** 

# **External** congress

## Priority Setting of Foodborne and Zoonotic Pathogens

Berlin, Germany, 19-21 July 2006

An international conference organized jointly by Med-Vet-Net and the US Food Safety Consortium. To promote progress in food safety priority setting by identifying key scientific issues and opportunities and fostering international scientific collaboration. www.medvetnet.org/priority

#### AAEA Pre-conference Workshop

'New Food Safety Incentives and Regulatory, Technological, and Organizational Innovations' Long Beach, California, USA, 22 July 2006

The workshop starts with a panel of three industry food safety innovators discussing how their companies control pathogens in the food supply chain, the economic incentives (or disincentives) faced and the role of innovation.

Researchers from eight countries follow and share their methods, results and ideas on food safety innovation and economic incentives. www.fsn-aaea.org

#### 20th ICFMH on Food Safety and Food Biotechnology: Diversity and Global impact Bologna, Italy, 29 August to 2 September 2006

This congress is a great opportunity for food microbiologists, tecnologists and students involved in the food industry as well as regulatory agencies to improve their understanding and discuss topics related to food safety and new-emerging challenges that the scientists have to cope with in order to ensure a safe, secure, nutritious and appealing food supply to a wide range of different consumers.

www.foodmicro2006.org

#### 2nd European Veterinary Immunology Workshop Paris, France, 4–6 September 2006

This workshop will run sessions on the following topics:

- From innate to adaptive immunity
- Infection & immunity
- Clinical immunology / Immunopathology
- Immunological tools
- Immunomodulation
- Comparative immunology (fish, avian)
- Immunogenomics (Genomic approaches in veterinary immunology)
- Leukocyte subsets and functions The role of dendritic cell subsets in initiating immune responses
- How many more?: Porcine CD8+ lymphocyte subsets and their functions
- Mucosal immunology
- Novel strategies of vaccine development (incl. probiotics etc.).

www.inra.fr/Internet/Projets/eviw/EN/index.php

7th International Congress on Veterinary Virology

Faculdade de Medicina Veterinária in Lisbon, Portugal, 24–27 September 2006

The scientific programme will consist of plenary invited lectures by renowned scientists, oral presentations and poster sessions selected by the Scientific Committee.

www.esvv2006.org/welcome.php

#### PRION2006

Strategies, advances and trends towards protection of society
Centro Congressi Lingotto
Turin, Italy, 4–6 October 2006

The programme will include state-of-theart lectures, oral presentations selected from contributed abstracts and poster sessions on the themes of NeuroPrion Network (prevention, control, treatment, management and risk analysis of prion diseases) and discussions focused on basic research. This event will provide a great opportunity for scientists from all over the world to share their findings and progress in an attractive and interesting setting. www.newteam. it/PRION2006/

Nano and Microtechnology in the Food and Health Food Industries

NH Grand Hotel Krasnapolosky, Amsterdam, Netherlands, 25–26 October 2006

The conference will have sessions on:

- Nano and micro technologies in food processing, monitoring, labelling, storage, distribution and related issues
- Using nano and micro technologies to meet the challenges of food for nutrition and food for health
- New techniques and technologies for rapid safety testing, and prevention of food borne disease
- Safety and regulatory issues related to the use of new technology. www.nano.org.uk

# Good luck...

## ...but not goodbye!

As this is my first Newsletter, I'd like to thank Lucy Harper for her help and patience in 'handing over' to me as editor. The Communications Unit wish her the best of luck and success in her now full-time post as SfAM's Communcations Officer. And, as she continues to share an office with us, we'll no doubt keep drawing on her expertise!



## Contact us

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Contributions and suggestions are welcome. Deadline for publication is 1st of each month.

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