EUROPEAN NETWORK FOR INFECTIOUS DISEASES

REPORT of the SECOND ANNUAL MEETING

April 7 - April 8 2006, London, England

SUMMARY

1. The second meeting of EUNID, a European project aiming to create a network of infectious disease experts with expertise in highly infectious diseases, was attended by national officials and national representatives from 13 of the 16 states involved in the project.

2. EUNID participants may view the presentations made at the meeting on www.eunid.com

3. Participants reviewed the proposed curriculum for training on the management of highly infectious diseases and the content of the proposed training module, and agreed to send comments, suggestions and amendments to Dr Baka.

4. Participants discussed criteria for admission to highly isolation units (HIUs); further work will need to be undertaken to draft a document for discussion and agreement during the year.

5. Participants discussed the proposed auditable criteria for specification and management of HIUs; further work on developing these will be undertaken by the EUNID project team and EUNID members during the year.

6. Participants discussed the proposed guidance on choosing, using, donning and removing PPE in HIUs, and agreed to send comments, suggestions and amendments to Dr Puro.

7. Participants were updated on the status of the publication of data from the EUNID inventory of HIUs in EUNID member countries; it is hoped that rapid responses from those who have yet to provide comments or data will enable the paper to be finalised this summer.

8. Representatives from Denmark, Estonia, Ireland and France provided short presentations reviewing available information on HIS facilities/ ID resources in their countries

9. The third meeting of EUNID will be held in March-April 2007

1. Background

The European Network of Infectious Disease Physicians (EUNID) is a European project, funded by the European Commission, DG SANCO Public Health through the work programme 2003. EUNID consists of partners from 16 member states (the original 15 EU member states, plus Estonia), who together have broad, multi-disciplinary experience of the management and control of highly infectious diseases. The main aims of EUNID are to enhance and maintain co-operation, communication, and exchange of information on highly infectious diseases among infectious disease clinicians, and to enhance preparedness and response within Europe to health threats from highly infectious diseases, whether naturally occurring, newly emergent, or deliberately released. The project started in mid 2004; this was the second meeting of national officials (or their alternates). EUNID members may review the meeting presentations on the EUNID website (www.eunid.com).

Dr G Ippolito, Scientific Director, INMI, Lazzaro Spallanzani, Rome, EUNID Project Leader, opened the meeting, held at the Health Protection Agency Centre for Infection (HPA), welcomed participants, including the new

representatives for Ireland and France, and introduced the current EUNID project coordination team from INMI, Rome (Dr V Puro, team leader; Dr F Soldani, project manager; Dr G de Carli, training; Dr FM Fusco & Dr C Nissii project links to EuroP4 and ETIDE; R Iacovino, project secretary). It was intended that links between EUNID and the European Centre for Communicable Disease (ECDC) would be strengthened as ECDC became increasingly well established, and that the EUNID project team would also collaborate closely with complementary EC funded projects, EuroP4 (the European network of BSL4 laboratories) and ETIDE (European Training in Infectious Disease Emergencies), both of which are coordinated from INMI. It was intended to apply through the EC 2006 call for proposals for continued funding for EUNID, which, if successful, would allow inclusion of additional representatives from institutions in newly joined member states.

2. Participants (see appendix 1 for details)

Participants from infectious disease units, national institutions, and/or public health authorities in Austria, Denmark, Estonia, Finland, Germany, Greece, Ireland, Italy, Luxembourg, Spain, Sweden, the United Kingdom, and the ECDC were present at the 2nd EUNID meeting; national officials from Belgium, the Netherlands, and Portugal were not able to attend.

3. ECDC and current activities on European preparedness for infectious disease emergencies
(Dr D Coulombier, Unit for Preparedness and Response, ECDC)

European response capacity pre-ECDC was centred mainly on EC funded surveillance networks, developed on the initiative of researchers from the member states in response to directive 2119/98/EC. These had functioned well, within their remits, but had not covered all the diseases specified by 2119/98/EC and were, ultimately, unsustainable. In addition, experience during the anthrax threat in 2001 and the SARS epidemic in 2002-2003 had highlighted the need to strengthen response capacity within Europe.

ECDC was established by Regulation 851/2004/EC in 2004, and is now operational. The founding regulation provides a very broad mandate. At present, the centre has a staff of about 80 and a budget for 2006 of 16M€; the escalation proposed would provide for around 300 staff and an annual budget of 80M€ by 2011-12.

ECDC has four main units, covering: scientific advice, preparedness and response, surveillance and communication, and administrative services. The centre will not have laboratory facilities, since it is not the intention to replicate, or compete, with existing, well-established institutions, but rather, to ensure that existing capacity is better coordinated.

The functions of the Unit for Preparedness and Response include epidemic intelligence (keeping track of emerging health threats, monitoring ProMed, GOARN, GPHIN, Gideon, and EC alert systems; providing timely scientific advice and risk assessment on emergent health threats, and operating the Early Warning and Response System); provision of technical assistance and training in outbreak investigation and response, including the identification of outbreak assistance teams. Staff members were deployed to Iran, Azerbaijan and Turkey in response to requests for assistance with avian influenza, and an 'outbreak team leader' course has been developed; training activities planned for 2006-7 included provision of short courses at national level, development of web-based training materials, and ensuring a smooth transition in the arrangements for EPIET.

ECDC's organisation is matrix-based, with subject-specific working groups and task forces (e.g. influenza, HIV/AIDS, STI and bloodborne infections, antimicrobial resistance) cutting across all four of the function-based units.

4. Development of consensus guidelines, including criteria for admission to highly secure infectious disease units (Dr S Mardel, WHO)

Participants at the first EUNID meeting in 2005 agreed the definition of a highly infectious disease, and a list of diseases that fit the definition (see www.eunid.com) but EUNID still needs to develop criteria for admission of patients to a high security infectious disease unit. Further work will need to be undertaken during the year to draft a document for comments and amendments.

5. Development of core curriculum and training modules for the European Specialist on management of highly infectious diseases (Dr A Baka, Hellenic Centre for Disease Control & Prevention, Greece)

The proposed curriculum and content of the training modules were discussed (see www.eunid.com) in detail. In general it was felt that courses should target physicians. It would be necessary, when agreeing on course length, to balance making the course short enough for physicians to attend it (the longer the course, the more difficult this would be) with ensuring that the course was not so compressed that participants and trainers were exhausted by the experience; a requirement for pre-course preparation or a partially web-based course could be helpful. The literature on curriculum development, training objectives and course evaluation is still relatively small. Work done by EUNID will complement, rather than duplicate, work due to start in ETIDE (European Training in Infectious Disease Emergencies, later this year, in which a 'train the trainers' course will be developed), and work done by ECDC (including the outbreak team leaders course). It was agreed that some form of pre- and post-course assessment would be desirable, and that arrangements should be made to ensure that CPD/CME or like points would be awarded on completion of the training module. Participants were asked to send suggestions, comments and amendments to Dr Baka (a.baka@keel.gr).

6. Audit of infectious disease units in Sweden (Dr P Follin, Linköping, Sweden)

Sweden is divided into 21 counties, grouped loosely in regions, and has 28 infectious disease units, with 820 infectious disease (ID) beds (45 %, 395, in single-bedded isolation rooms). There are three large (>40 bed) units, in Malmö, Stockholm, and Göteborg), 15 medium –sized units (20 –40 beds), and 10 smaller (15 –20 bed) units (median 0.10/1000 inhabitants; range 0.05 – 0.27).

The 2005 EUNID inventory had highlighted some of the difficulties in obtaining clear and accurate information about resources for management of patients with highly infectious diseases. Preliminary results of a 2005 survey conducted through The Swedish Society for Infectious Disease Physicians (www.infection.net) suggested that there were 231 negative pressure rooms in 21 ID units in Sweden; and at least 57 (numbers exclude Stockholm) rooms in ID wards or within ITUs with intensive care capacity. Numbers of negative pressure rooms within a unit range from >40 (Göteborg) to <5 (e.g. Linköping, which has a few, very highly secure, rooms). Swedish hospital design standards require 4-6 air changes per hour; thus, there are no rooms with >6 ac/hour. In 2006 independent examiners will, at the request of the National Board of Health and Welfare, audit the Swedish HIU.

Audit protocols should be standardized and evidence-based. There was a trade off in inventory design: the simpler and easier technique, the less complete and reliable the data might be (cf questionnaire based data cf data from on-site observations by non-biased professionals, or rotational/triangular visits). When considering design standards for highly secure isolation, or assessing existing resources, other questions that might be asked included: Is the anteroom lockable? Is the anteroom single or double? How is exhausted air routed? How are pressure levels maintained, verified and monitored? What is the pressure gradient between the anteroom and the entry corridor?

7. Auditable criteria for high isolation unit (HIU) provision (Dr B Bannister, Royal Free Hospital, London)

After the presentation, a working group discussed this topic in detail; the outcome of the discussion was then presented to the meeting as a whole.

Participants agreed that it would generally be desirable to have at least two HIUs in each member state, though a single unit, could, with appropriate collaborative agreements with nearby MS, work well. The unit should be situated alongside a tertiary/specialist referral/university hospital, either in a stand-alone pavilion, or within the main building, provided that engineering controls and operational protocols were in place to ensure safety. Close liaison with critical/intensive care experts was recommended in both planning and in subsequent patient management; critical care capacity should be built into the HIU at the design stage. It should also be noted that HIUs regularly need to use expert advice on engineering, advice on the management of paediatric cases, and more complex medical management of adults (eg haematology, renal medicine), and extra equipment might be needed in an emergency.

Participants agreed that there should be a requirement for isolation rooms to be at negative pressure, but there was considerable debate about the most desirable pressure gradients, and the desirable number of air changes/hour; participants also agreed that systems for constant visualisation of pressure adequacy should be in place, and that the entire system should be tested and validated at least twice a year. There is less evidence for the need for HEPA filtration of exhausted air; however, participants thought that this was probably a desirable feature, provided that filters were correctly maintained through a planned preventive maintenance programme.

Laboratory services used for patient management (whether in a laboratory attached to the HIU or elsewhere) should be compliant with EC directives on biological agents, and with other international guidance on biosafety and biocontainment. Use of point-of-care diagnostics should be maximised; autoanalysers could be used provided that appropriate safety protocols were available and applied. Diagnostic samples should be packaged and transported in accordance with UNECE guidance by trained and accredited companies; and HIUs/attached laboratories should have a tested and validated accident response protocol (covering healthcare worker protection and environmental decontamination), and there should be adequate pre and post event provision of occupational health care.

Training of staff and regular evaluation/updating are important and appropriate quality assurance systems should be in place. Other staff protection issues included training in the use of appropriate PPE, and provision of changing-room and showering facilities; showering/washing was an important part of the decontamination/accident response process, and provided a fail-safe against breaches of protection.

Within HIUs in Europe, modes of clinical waste management vary; national guidelines, and imposed restrictions differ. Much of the available evidence base is derived from industrial/large-scale waste management systems, and may not be applicable to smaller scale systems. There was debate about the need for, and efficacy of, treatment of liquid waste. Participants were generally unsupportive of the need for fumigation of units; other options should be explored. It was agreed that all equipment dedicated or identified for use within HIUs should be easily decontaminable.

Further discussion is needed on patient transport (which modes are acceptable/desirable?); operational policy and risk management tools; admission audits; adverse event registers and their evaluation, and sharing of information on adverse events.

8. Choice, correct use, donning and removal of PPE and working proposal (Dr V Puro, INMI, Rome)

After the presentation, a working group discussed this topic in detail; the outcome of the discussion was then presented to the meeting as a whole.

Participants re-reviewed existing worker protection legislation on PPE and, in particular, respiratory protection for health care workers exposed to highly infectious diseases.
The working proposal discussed by participants assumes that staff will have been trained in, and will practise, high quality standard infection control procedures (e.g. hand hygiene, careful sharps management, respiratory hygiene/cough etiquette); identifies high risk procedures (aerosol provoking procedures; procedures where there is a risk of sharps- or blood-splash exposure) and high risk patients (e.g. those with a coagulopathy, or diarrhoea), and lays out the recommended protection for face, eyes, body, and respiratory system by type of unit and condition of the patient.
In choosing PPE, the partners agreed to balance between the choice of specific PPE for each HID and the supply to HIU staff of relatively homogeneous protocols in order to encourage adherence to infection control measures.

The proposal as finalised during the meeting can be viewed on the EUNID website; participants are encouraged to send comments, suggestions and amendments to Dr V Puro (puro@inmi.it)

9. EUNID inventory of HIUs (Dr FM Fusco, EUNID, INMI, Rome)

The status of the inventory of HIU facilities in EUNID member countries was discussed. Partners had been sent a draft of an article and invited to comment on, correct, or confirm the section relevant to their country, which was based on data collected in the 2005 survey. The process resulted in much clearer data. Denmark, Estonia, Finland, Luxembourg, Sweden, United Kingdom, Austria and Italy have responded; Germany, Greece, the Netherlands, and Portugal have yet to respond; data for the inventory are also expected from the new partners in France, Ireland and Spain.

The plan is to finalise the data, and the content of the paper, as soon as possible. Additional data should be forwarded to (fusco@inmi.it).

10. HIUs and management of patients with HIDs within in the EU

a) Denmark (Dr P Skinhoj, Copenhagen, Denmark)

Denmark has a population of 5.3 million, with 1.2 million living in the greater Copenhagen area. Infectious diseases as a separate specialty is relatively new. There are 5 infectious disease units in Denmark, all based within university hospitals with 2 -8 isolation rooms per unit. Overall there are 21 isolation rooms, with capacity for 38 patients; developments in progress will result in ID facilities with 30 rooms each in Copenhagen and Arnhuis. The 1996 national guidelines on isolation units and patient isolation are presently being revised; at present, 4-6 air changes per hour, using one of two different systems, are advised, but this is likely to change when the revised guidelines are published. National guidance requires that patients with known or suspected smallpox or SARS be admitted to a HIU (with 12 air exchanges per hour); ID physicians make the decision about where patients with other highly infectious diseases (e.g. plague, viral haemorrhagic fever) or other highly transmissible infections (e.g. chickenpox, measles) should be admitted.

b) Estonia (Dr K Ott, CID, Tallinn, Estonia)

Estonia has a population of 1.3million, with 19 hospitals, and 6798 beds in total. There are 5 infectious disease units, with 160 beds; there are also additional beds in other hospitals for patients with TB (MDR TB is a significant problem in Estonia). There are 43 infectious disease physicians; the training programme lasts 4 years, and includes 1 year in internal medicine, 1 year in infectious diseases, 6 months paediatrics, 6 months laboratory work, and a 1-year elective period. The largest ID unit, in Tallinn (Centre for Infectious Diseases West Tallinn Central Hospital), has 100 beds; 13 of which are suitable for patients with HIDs (negative pressure, HEPA filtration, but <6ac/hr); 15 beds have anterooms, but there is no attached laboratory facility. Renovation work is underway; when complete the unit will have 2 rooms equipped for intensive care. Other units are based in Tartu (University Hospital, separate from main hospital campus, 8 beds, no negative pressure rooms, no intensive care facilities); East Viru (12 infectious disease beds, no negative pressure rooms, no intensive care facilities, renovation underway will result in 2 intensive care beds); Narva (20 beds, no negative pressure, no ITU); and Parlu (20 beds, 1 room [1 / 2 beds] with negative pressure and intensive care capacity, but no attached laboratory).

c) Finland (Dr H Siikamäki, HUCH, Helsinki, Finland)

Finland has a population of 5.2 million. There are 450 municipalities for primary care and the country is divided into 20 regions providing hospital care. There are five university hospitals (in Helsinki, Oulu, Tampere, Turku and Kuopio); all have infectious disease/isolation beds. The mot recent national survey was done in 2003; there were then 66 isolation rooms (including 19 in intensive care units), with a range of 0-16 per district. In Helsinki and Uusimaa (HUS) district (population 1.5m), there were 36 (29 in wards, 7 in ITUs) isolation rooms with an anteroom, attached bathroom/shower, negative pressure, and 6-12 air changes/hour. In practice, however, many of these rooms are not available for infectious disease patients: 11 rooms are in haematology departments; 2 in the surgical burn unit/ITU, and 4 are in a primary care hospital. Within Helsinki University Central Hospital (HUCH), there are 16 isolation rooms (with an anteroom, toilet facilities, negative pressure, 6-12 ac/hr, and HEPA –filtered exhausted air), sited in a high security

isolation ward in Aurora Hospital (8 rooms); the Hospital for Children and Adolescents (2 rooms), and in the main hospital (3 rooms in ITU; 3 rooms in first aid polyclinic). The isolation unit in Aurora Hospital completely renovated in 1997, has high quality, modern facilities, with 'clean' and 'dirty' exits to the unit; staff members were closely involved in the design process; 2 rooms are equipped with decontamination units, and patients can be monitored by video camera. However, the unit is separate from the main site (where X-ray, laboratory and intensive care units and staff are based); the rooms are too small to contain all the equipment that might need if a patient requires intensive care, and the entry and exit areas are small. Construction will start in 2007•on a new 16 bed (4 single rooms, 4 double rooms, 2 HIU multi-purpose rooms, all with anteroom, own bathroom, negative/normal pressure, incoming and exhausted air HEPA filtered; direct entry for patients from outside, and with potential to provide intensive care and laboratory facilities in the unit); completion is due in 2012.

d) Ireland (Dr G Sheehan, Mater Misericordiae University Hospital, Dublin, Ireland)

Ireland has a population of 3.9 million, and a mixed public (75%)/private (25%) health service, with different admission criteria within the two sectors. Health service spending in the last decade does not reflect the improved economic situation. There are six tertiary care centres in Dublin, with additional centres in Cork and in Galway. The number of infectious disease physicians (mainly trained in N America) has increased from 1 in 1993 to 9 in 2006 (including two paediatric ID physicians); 3 consultants (with trainees) work in the unit in the Mater Misericordiae Hospital. There are 77 positive/negative pressure isolation rooms (with >6 ac/hr, the majority have anterooms, though most exhaust air directly to the outside, without HEPA filtration), in haematology or transplant units.

e) France (Dr C Perronne, Paris, France)

Within the public hospitals in France, there are negative pressure rooms in at least one hospital in 13 of the 80 departments, mainly in the north west of the country. Centres with negative pressure rooms include hospitals in Nice, Marseilles, Caen, Ajaccio, Bastia, Brest, Bordeaux, Rennes, Nantes, Orleans, Nancy, Lille, le Mans, Rouen, Amiens, and Limoges; expansion and upgrading of units in Marseilles, Nancy and Lille is planned or in progress. There are no negative pressure isolation rooms in hospitals in Paris, although the intensive care unit in the Hopital Saltpetriere has been designated as the receiving centre for HID patients. A new HIU is planned, with 48 beds, sectional isolation, and a parallel intensive care unit on the floor above.

11. Next meeting

The next meeting of EUNID will be held in Spring 2007; dates and place for the meeting will be canvassed shortly. Participants thanked the EUNID team, and Dr Bannister, for the effort put into coordinating the meeting.

Appendix 1

Second annual EUNID meeting, April 7-8 London 2006: participant list

1. Barbara Bannister, Royal Free Hospital, London, United Kingdom
2. Norbert Vetter, Otto-Wagner-Spital 2.Interne Lungenabteilung, Vienna, Austria
3. Ida Gjorup, Merlev Hospital, Merlev, Denmark
4. Peter Skinhoj, Epidemiklinikken, Rigshospitalet, Copenhagen, Denmark
5. Kristi Ott, West Tallinn Central Hospital, Centre for Infectious Diseases, Tallinn, Estonia
6. Kuulo Kutsar, Health Protection Inspectorate, Estonia
7. Outi Lyytikainen, Natinal Public Health Institute, Helsinki, Finland
8. Heli Siikamaki, Central Hospital, Helsinki University, Helsinki, Finland
9. Christian Perronne, Hopital Raymond Poincaire, Paris, France
10. Hans-Reinhard Brodt, Klinikum der Johann Wolfgang Goethe Universitaet Medizinische Klinik III/Infektiologie, Frankfurt, Germany
11. Rene Gottschalk, Office of Public Health, Frankfurt, Germany
12. Agoritsa Baka, Hellenic Centre for Infectious Diseases Control, Athens, Greece
13. Elena Maltezou, Hellenic Centre for Infectious Disease Control, Athens, Greece
14. Gerard Sheehan, Mater Misericordiae University Hospital, Dublin)
15. Robert Hemmer, Centre Hospitalier de Luxembourg, Luxembourg
16. Per Follin, Swedish Institute for infectious Disease Control, Stockholm, Sweden
17. Inger Riesenfeld-Orn, Smittskyddsenheten, Stockholm, Sweden
18. Magda Campins, Hospital Universitary Vall D'Hebron, Barcellona, Spain
19. Giuseppe Ippolito, Scientific Director, INMI, and EUNID Project Leader, Lazzaro Spallanzani, Italy
20. Vincenzo Puro, INMI, Rome, Italy
21. Gabriella De Carli, EUNID project group, INMI, Rome, Italy
22. Fabio Soldani, EUNID project group, INMI, Rome, Italy
23. Carla Nisii, EUNID project group, INMI, Rome, Italy
24. Francesco Maria Fusco, EUNID project group, INMI, Rome, Italy
25. Julia Heptonstall, Scarborough and NE Yorkshire NHS Trust, United Kingdom (rapporteur)
26. Simon Mardel (WHO), United Kingdom
27. Denis Coulombier, ECDC, Sweden