

## NEWSLETTER

December 2007  
Year 3, N°2

### Welcome

I take the liberty of introducing this issue of the IPSE Newsletter, presenting as it does different instances of Improving Patient Safety in Europe. Improvement often arises from the initiative of individuals or small groups of people. A big thank you goes to all those whose initiative is evident in this issue.

Because Josette is temporarily absent from the editorial team, the quality of production of this issue is not as good as before. Josette will be re-joining us soon and I can report that both she and baby Claudia are keeping well.

**Ian Russell**

*IPSE Assistant Project Coordinator*

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### Project Background

Harmonisation of data on nosocomial infections (NI) and antibiotic resistance (AR) in Europe has revealed large variability in preventive practices and outcomes across countries.

'Improving Patient Safety in Europe (IPSE)', a project funded by the European Commission Directorate General for Health and Consumer Protection (DG SANCO), aims to resolve these differences through a range of initiatives aimed at supporting health services and Infection Control (IC) professionals. An extended partnership has been created, including the European Commission, WHO, ESCMID, some major Public Health institutes and surveillance networks in each of the Member States.

There are increasing concerns about emerging infectious diseases. In addition, with the enlargement of the EU and the establishment of the European Centre for Disease Prevention and Control (ECDC), our project has the opportunity to help manage the risks of healthcare associated infections (HAI) and antimicrobial resistance (AMR) more effectively.

## Country focus ... Bulgaria

Sofia, Bulgaria, 29<sup>th</sup> & 30<sup>th</sup> November, 2007

### The 6th National Symposium on Nosocomial Infections & Disinfection

The 6<sup>th</sup> National Symposium on Nosocomial Infections (NI) and Disinfection was opened by Assoc. Prof. Dr. Nina Gatcheva, President of "BulNoso" and Chair of the Organising Committee, in the presence of 280 attendees and guests from around Europe. Professionals from all over Bulgaria (IC nurses and doctors, microbiologists, epidemiologists and clinicians) were brought together to exchange information and experience in the field of Infection Control (IC) and prevention. Hospital directors and members of the Ministry of Health also attended. All participants received the BulNoso Bulletin "Nosocomial Infections" and 13 companies participated in the industry exhibition.

This international Symposium is held annually in Sofia, the capital city of Bulgaria. It is the official Forum of the Bulgarian Association for Prevention and Infection Control "BulNoso". The symposium and bulletin are main ways for BulNoso members and the wide spectrum of specialists in clinical and preventive medicine to learn about European standards and worldwide achievements in IC and Disinfection, and to support their continuing education and professional qualification. This is a unique opportunity to share scientific information and practical knowledge, not only during the oral and poster sessions, but also through the educational module and the industry exhibition, always presenting the latest innovations in the extremely dynamic area of hospital hygiene and disinfection.

The main topics of the Symposium included surveillance of NI, modern approaches to the prevention of device-associated infections, SSI, epidemiology and diagnostics of epidemic prone nosocomial pathogens such as VHC, legionella, NFGB, MRSA and *C.difficile*, vaccines/

immunobiologicals for personnel and patient protection, and new antiseptics and disinfectants.

Carl Suetens from the Scientific Institute of Public Health in Brussels represented IPSE and Barry Cookson from Health Protection Agency in London was guest-expert invited by the Bulgarian-Swiss Hospital-Hygiene Programme. There were 33 oral and 33 poster presentations.

**VI НАЦИОНАЛЕН СИМПОЗИУМ ПО НОЗОКОМИАЛНИ ИНФЕКЦИИ И ДЕЗИНСЕКЦИЯ**  
29-30 Ноември 2007г.

**VI NATIONAL SYMPOSIUM ON NOSOCOMIAL INFECTIONS AND DISINFECTION**  
November 29-30, 2007

посветен на:  
dedicated to:

WORLD ALLIANCE FOR PATIENT SAFETY  
БЕЗОПАСНОСТТА НА ПАЦИЕНТА - ГЛОБАЛНО ПРЕДИЗВИКАТЕЛСТВО

организиран от: organized by:

Българска асоциация по превенция и контрол на нозокомиалните инфекции  
Bulgarian Association for Prevention and Infection Control

www.bulnoso.com

сърорганизатори: coorganizers:

NCFPD HYGIA - BSHHP Society DDD

### WHO Global Alliance for Patient Safety

In the international context, the programme of the Symposium is now designed to follow the WHO Global Alliance for Patient Safety and its initiatives: "Clean care is safer care" and "Safe surgery saves lives". BulNoso promotes WHO Patient Safety Initiatives among healthcare professionals, a first in the country. A campaign was initiated in 2006 to build commitment to the WHO initiative within the programmes of the Surgical Society, Association of Neonatology and BulNoso national forums. In November, 2006, Bulgaria was among 13 new countries pledging commitment to the Initiative in Geneva where the first anniversary of the Global Patient Safety Challenge was celebrated.

### Social Event

Symposium participants met in a social atmosphere during a superb gala dinner. A very colourful quiz helped to make it an occasion to remember.

Violeta Voynova

Scientific Secretary of Bulnoso and IPSE National Contact Point

Nina Gatcheva

Chair of BulNoso

## Country focus ... Bulgaria

### Prevalence of nosocomial infections in surgical and intensive care unit patients

## Results of the first Nationwide Survey in Bulgaria, 2006

The first cross-sectional survey of the prevalence of nosocomial infections (NI) took place from 14<sup>th</sup> to 25<sup>th</sup> November, 2006. 130 hospitals from 13 of 28 Bulgarian regions accepted the invitation to participate. 23 were then chosen by randomised selection. Prevalence was initiated by the Ministry of Health as one of the Bulgarian Swiss Hospital Hygiene Programme priorities. The survey was financially supported by the Swiss Agency for Development and Cooperation.

### Survey Design and Data Collection

The chosen method was cross sectional (one-day point-prevalence). The study protocol followed that of HELICS for Prevalence Surveys (Version 7.0), with some minor changes. CDC definitions Surgical Site Infection (SSI), primary bacteraemia/septicaemia, nosocomial pneumonia and urinary tract infection (symptomatic infections only) were used. All acute patients aged more than 1 year who were hospitalised for at least 48 hours were included. The teams comprised two surveyors (featuring clinicians, microbiologists, epidemiologists and IC specialists). Surveyors had been trained in a two-day seminar followed by a pre-pilot survey in a multi-profile hospital under instruction and supervision by an external expert. The survey was not carried out on weekends and Mondays.

### Results

The 1,315 surgical patients (excluding gynecology and obstetrics) and 130 ICU patients surveyed represented 39.87% of all patients included in the survey (3,624). The overall prevalence rate was 4.18% in surgical patients (55 cases), 5.61% in those who underwent surgery (52 cases), and there was also one paediatric surgery patient. The prevalence of NI in ICU patients was 14.62% (19 cases), 22.45% in those who underwent surgery and subsequently were transferred to the ICU (11 cases). Comparing the prevalence of different type of clinical manifestations of NI in operated patients, SSI proved to be the most frequent (36 cases, 3.63%), followed by UTI (14 infections, 1.41%), pneumonia (13 cases, 1.31%) and primary bacteraemia (1 infection, 0.1%) [Fig. 1].

**UTI in operated patients** - 14 of the operated patients had UTI, 9 out of 11 symptomatic nosocomial infections of the urinary tract were associated with a catheter placed in the urethra.

**SSI in operated patients** - A total of 993 surgical interventions were registered and 36 SSI were found (3.62%), almost half of them deep SSI [Fig. 2]. In 5 of the cases the infection was related to an implant being placed within 1 year (2- superficial, 3 - deep).

**Primary bacteraemia in operated patients** - There was only 1 BSI in operated patients, with a documented ASA score - 1. The bacteraemia was associated with a venous catheter.

**Nosocomial pneumonia in operated patients** - 7 cases of PNE 1 (clinically verified pneumonia) and 6 cases of PNE 2 (laboratory confirmed pneumonia) were observed in operated patients, while no cases of pneumonia in patients with immune suppression were found. In 45% of patients pneumonia was associated with mechanical ventilation.

### Conclusions

The results obtained are characterised by short-term hospital stays, a high rate of antibiotic application and inadequate microbiological monitoring.

Figures: <http://ipse.univ-lyon1.fr/supplementary.pdf>

**Violeta Voynova**<sup>1</sup> (in collaboration with M. Zwahlen<sup>2</sup>, P. Heeg<sup>3</sup>, C. Rutschmann<sup>4</sup>, M. Vukov<sup>5</sup> and a team from Bulgarian hospitals)

<sup>1</sup> National Centre of Infectious and Parasitic Diseases, Sofia, Bulgaria, <sup>2</sup> University of Bern, Switzerland, <sup>3</sup> Eberhard-Carl-University Hospital, Tuebingen, Germany, <sup>4</sup> Swiss Red Cross, Bern, Switzerland, <sup>5</sup> National Centre of Health Information, Sofia, Bulgaria

## Care-ICU (Controlling Antibiotic REsistance in ICUs)

### **CARE-ICU Results from Malta**

#### **Introduction**

Nosocomial infections, especially with antimicrobial-resistant organisms, are a major problem in ICUs<sup>1</sup> and the increasing prevalence of these antibiotic-resistant strains is of concern, with more than 60% of *Staphylococcus aureus* isolates recovered from ICUs being resistant to methicillin (methicillin-resistant *Staphylococcus aureus* [MRSA])<sup>2</sup>. Routine surveillance for MRSA in ICUs allows for earlier initiation of contact isolation precautions and is associated with large and statistically significant reductions in the incidence of MRSA bacteraemia in the ICUs and hospital wide<sup>3</sup>. MRSA appears to be associated with worse outcomes than methicillin-sensitive *S. aureus* (MSSA) infection. It was reported that MRSA bacteraemia increase significantly the risk of death compared to MSSA bacteraemia<sup>4</sup>.

Among critically ill patients in the ICU, *Acinetobacter* spp. cause serious infection, the management of which is complicated by AMR, including carbapenem resistance. Multidrug-resistant *Acinetobacter baumannii* (MDR-Ab) has emerged as an increasingly problematic cause of HAI in the ICU. MDR-Ab is resistant to most standard antimicrobials but often retains susceptibility to polymyxin B and doxycycline<sup>5</sup>. Therapy cycling empiric antibiotics between various classes may influence bacterial resistance patterns. Understanding the impact of cycling on the appropriate treatment of suspected Gram-negative infections is important.

#### **Method**

The main ICU in St Luke's Hospital is a 13-bed case-mixed ward, with 97% occupancy rate. Neonatal and cardiac ICUs also took part; however, results here are for the main ICU only due to the few isolates in the other ICUs. Surveillance data was collected according to the Care-ICU protocol (<http://www4.smittskyddsinstitutet.se/careicu>).

#### **Results**

Three bacterial species, *Pseudomonas aeruginosa*, *A. baumannii* and *S. aureus*, accounted for more than 55% of all ICU isolates (Figure 1). Other less prevalent bacterial isolates were *Enterococcus faecalis* and *Escherichia coli* and *Proteus mirabilis*. However, in blood cultures *E. faecalis* was the third most common organism in 2005 and the second most common in 2006, preceded only by *P. aeruginosa* (Figure 2). In respiratory tract specimens there was a shift from *P. aeruginosa*, with 33% of isolates in 2005 and 24% in 2006, to *A. baumannii* from 22% to 34% (Figure 3).

Frequency of AR varies between species and sources and also between years (Table 1). Resistance to oxacillin in *S. aureus* is on the increase. In 2005 for all specimens from the ICU, 64.1% of *S. aureus* were MRSA and this increased to 82% in 2006. In blood cultures, from 50% in 2005 it reached 85.7% in just one year. In *P. aeruginosa* and *A. baumannii* resistance to carbapenem was 18.5% and 85.7% and for 3<sup>rd</sup> generation cephalosporins is 44.0% and 84.6% respectively in blood for 2006, while for all specimen in the same year these were 33.3% and 93.6% resistant to carbapenem and 23.6% and 93.3% resistant to ceftazidime respectively.

#### **Conclusion**

The very high frequencies of AR among *S. aureus*, *P. aeruginosa* and *A. baumannii* isolated from patients admitted to the Maltese ICU is of concern. There is an urgent need for increased compliance with hygiene rules and improved IC, and the most efficient IC interventions have to be defined. Feedback on AMR is a necessary tool to start action against emergence of AR, misuse of antibiotics and low compliance with hygienic precautions.

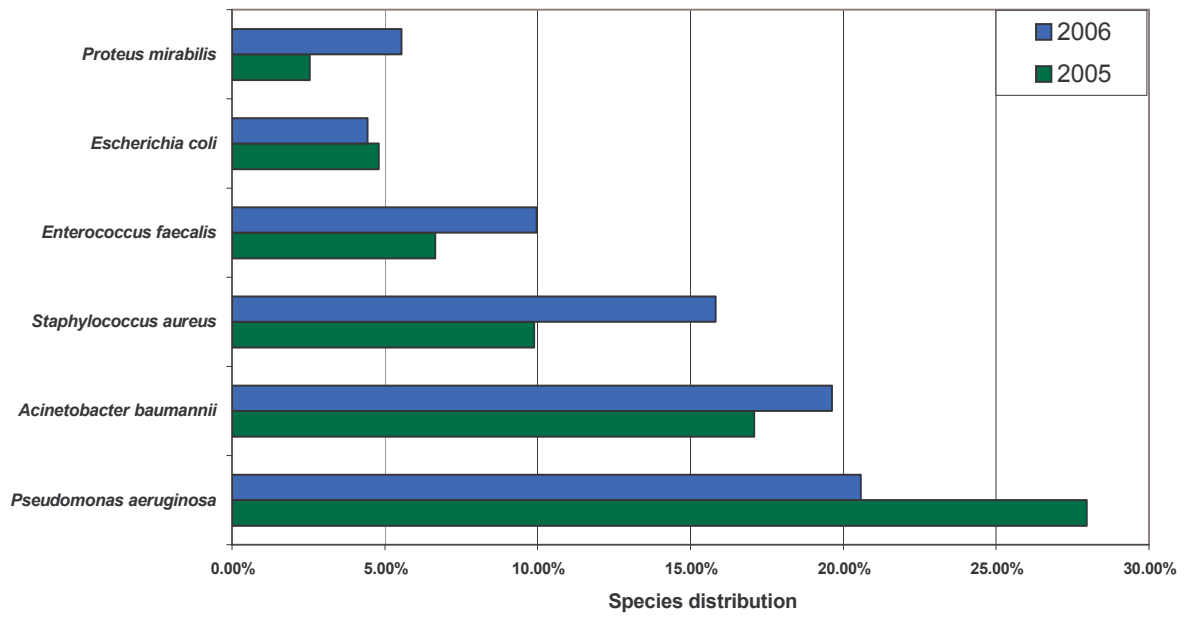
Elizabeth Anne Scicluna

Infection Control Unit, St. Luke's Hospital, G'Mangia MSD08, Malta

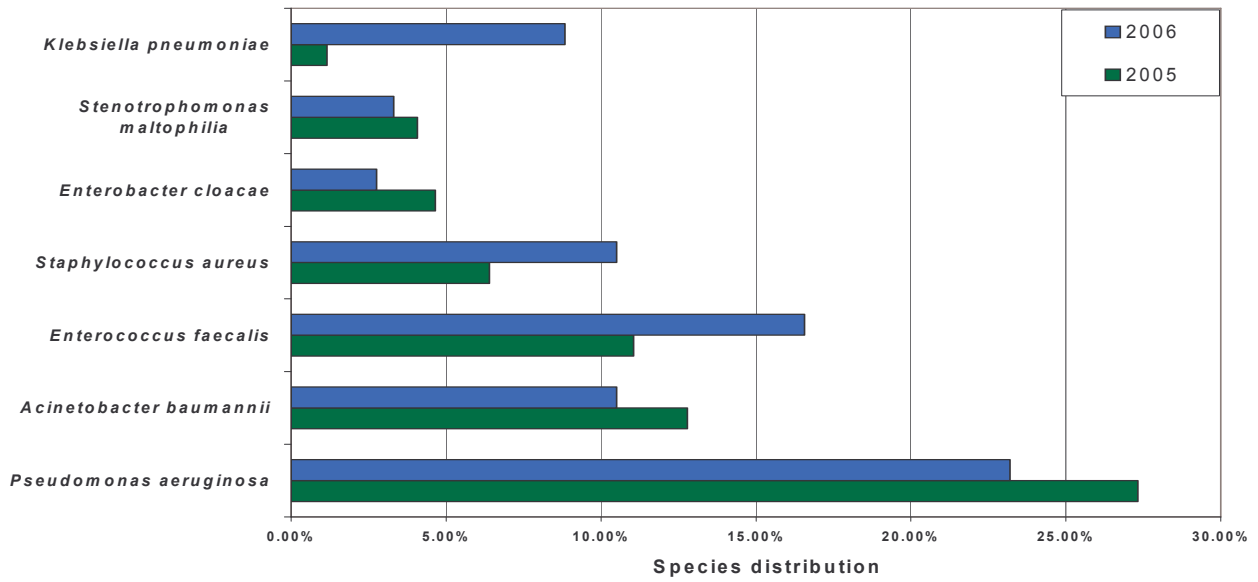
Hakan Hanberger

Swedish Institute of Infectious Disease Control, Solna

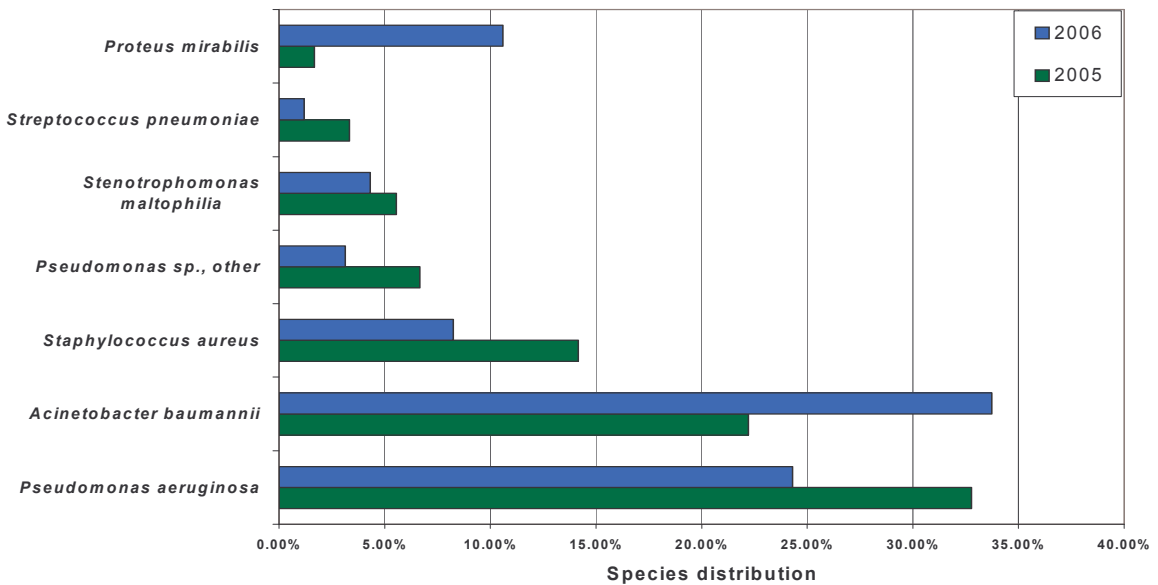
Table and References: <http://ipse.univ-lyon1.fr/supplementary.pdf>



**Figure 1** Species distribution for the most common organisms isolated from all specimens taken from ICU patients



**Figure 2** Species distribution for the most common organisms isolated from blood cultures taken from ICU patients



**Figure 3.** Species distribution for most common organisms isolated from respiratory tract specimen taken from ICU patients

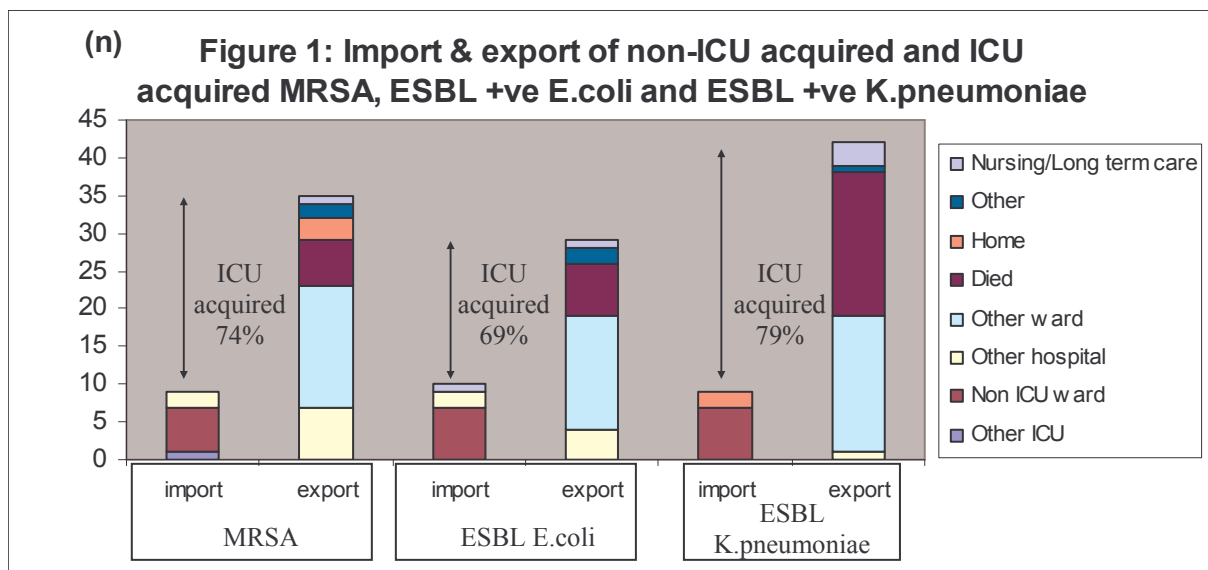
## Preliminary Results

### Method

This initiative describes the endemic or hyper-endemic situation in ICUs with resistance problems. The main objectives are to estimate the extent of the import and export of resistant bacteria to and from ICUs, and to correlate genotyping data with resistance and antibiotic consumption data from IPSE CARE-ICU on outlier ICUs. ICUs provide resistant pathogens for genotyping (*S. aureus* and *E. faecium*, *P. aeruginosa*, *E. coli*, *A. baumannii* and *K. pneumoniae*). Input and output of resistance organisms in the ICU is carried out via a web-based entry page ([www.ipse-freiburg.de](http://www.ipse-freiburg.de)).

### Results - Import and export of AMR in ICUs

19 ICUs from Germany, Hungary, Italy, Romania and Slovakia participated. The database includes 379 data sets (284 on resistant pathogens and 96 on non-resistant). Of the 284 patients, 94 were colonised with an AMR, whereas 180 suffered infections. 178 patients acquired the resistant pathogens in the ICU, 56 were non-ICU acquired. Of the resistant pathogens sent for genotyping 99 were *P. aeruginosa*, 55 *A. baumannii*, 49 *K. pneumoniae*, 35 MRSA, 30 *E.coli* and 16 VRE. The import/export of MRSA, ESBL *E. coli* and ESBL *K. pneumoniae* are shown below;



### Results - Genotyping of AMR

361 bacterial isolates were obtained. This collection includes 281 isolates with particular AMR traits against carbapenems, fluoroquinolones, extended spectrum  $\beta$ -lactams as well as VRE and MRSA. Meanwhile, 98 *Pseudomonas aeruginosa* strains from 11 ICUs have been assigned to ICU-based genotypes by use of AFLP.

5 outbreaks were identified. All of these were due to imipenem-resistant *P. aeruginosa*. Testing has so far shown that a considerable number of isolates from different ICUs display a resistance phenotype, which could be inhibited by EDTA, suggesting a carbapenem-resistance due to the emerging metallo-beta-lactamases. Further molecular analysis will follow. Correlation with antimicrobial consumption data is pending until data are made available by CARE-ICU.

Currently, *spa*-typing of MRSA revealed different regionally prevailing genotypes, like t002 and t008 in German ICUs, t062 in one Hungarian and t041 in two Italian ICUs. Genotyping of other Gram-negative species and VRE is in progress.

### Conclusions

This work package adds value by analysing comparable genotyping results using a standardised molecular protocol for six important nosocomial pathogens and by feeding back relevant information. The identification of outbreaks can help to improve IC. Besides feedback on antibiotic use, this tool helps to combat further emergence of resistant pathogens.

Estimating the extent of import/export of resistant bacteria in the community is becoming more important. So far, our preliminary data do not support the hypothesis that long term care or nursing homes are hugely important with respect to the import/export of resistant pathogens.



Opening Ceremony

## The Russell Institute An early instance of 'Improving Patient Safety in Europe?'



Bronze child figure



Miss Agnes Russell

The Russell Institute in Paisley, Scotland, opened in 1927 as a child welfare clinic and continues to serve this purpose today. It was donated by Miss Agnes Russell to her home town of Paisley as a memorial to her two brothers, Robert and Thomas Russell. She wanted a design that was out of the ordinary and that would provide accommodation for all aspects of child welfare. The accommodation included x-ray, disinfection and laboratory facilities, maternity, orthopaedic and dental clinics, and clinics for the treatment of tuberculosis, and diseases of the ear, nose and throat.

The main doorway is surmounted by a large bronze figure of a mother with children, flanked by two copper shields: one is the Paisley Coat of Arms and the other is the serpent and staff symbol of Aesculapius, god of medicine. Above the large window is a massive bronze figure of a protective angel guarding the young in its arms, with the motto "A DEO SALUS", or "Health comes from God". Around the building at a lower level are bronze child figures each indicating an aspect of the work of the Institute including dentistry and eye ailments. Inside, the grand entrance hall was decorated with Italian marble.

The formal opening ceremony was performed by HRH Princess Mary, the Princess Royal, on 19th March 1927. Unfortunately, Miss Russell, who was to have been made an honorary burgess of Paisley in recognition of her magnificent gift, died in 1926 before seeing her plan come to fruition.



The Institute today

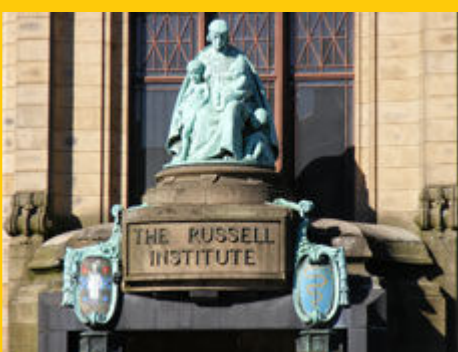
Agnes Russell's donation might at first seem surprising. She and her eight siblings (including my great-great-grandfather, David) came from a modest background. It was brother Robert who established himself in the legal profession, later to be joined by Thomas. Their law firm developed a big reputation throughout the west of Scotland.

An article in the Paisley Daily Express of 27<sup>th</sup> December, 1920, reporting the death of Robert, gives some clues. It noted that he was "cradled in an atmosphere of Radicalism" and that he "early imbibed the spirit of his people and was an ardent supporter of the Liberal cause". In the lives of the town's citizens, issues of Public Health would be as important then as now. The exact circumstances may never be known but, 80 years later, we can still be inspired by the story of Agnes Russell's "magnificent gift".



Entrance hall

Ian Russell IPSE Assistant Project Coordinator



Mother and children



A DEO SALUS

### Acknowledgements

**Crawford Russell** for researches and collecting family testimonies.

**Joyce Higgins, Reference and Local Studies Library, Paisley**, for information about the Russell Institute

## *IPSE HIGHLIGHTS - DECEMBER 2007*

Three important draft documents have been issued for review within the IPSE network and are now being finalised following the comments received;

### **European Training for Infection Control Doctors and Nurses in connection with ESCMID**

- Core Curriculum for Infection Control Practitioners in Europe

### **European Standards and Indicators for Public Health Surveillance and Technical Guidance for the Control of HAI & AMR**

- Guidance on Infection Control in Healthcare Settings in Europe
  - Recommended Practices, Standards and Indicators for monitoring the control of healthcare-associated infections and antibiotic resistance

### **Feasibility study of surveillance of HAI in European Nursing Homes**

- European Survey on Infection Control in Nursing Homes and Home Care Organisation

Other news items;

### **Technical Support for Sustaining and Extending HELICS Surveillance of Nosocomial Infections and Control of HAI & AMR**

- Collection of HELICS SSI and ICU data for 2006 is underway. The analyses of these data will contribute to the next ECDC annual report.

### **Contract Payments**

- The third contract payment has been distributed to the project partners.

### **The IPSE Plenary Meeting and Symposium 2008**

- The next IPSE Plenary Meeting and the IPSE Symposium 2008 will take place in Lyon on 22<sup>nd</sup> and 23<sup>rd</sup> May, 2008, respectively. Registration will start in January.

**Visit our Website**  
**<http://ipse.univ-lyon1.fr>**

**IPSE Editorial Team : Ian Russell, Josette Najjar-Pellet and Jacques Fabry**  
Université Claude Bernard Lyon1 – Laboratoire d'Epidémiologie et Santé Publique  
8, avenue Rockefeller – 69373 LYON Cedex 08 – France  
Tel. +33 4 78 77 71 78  
Fax +33 4 78 00 93 86  
Email [ipse@adm.univ-lyon1.fr](mailto:ipse@adm.univ-lyon1.fr)