

Venue: PYRAMID 2  
23rd August 2007  
1215-1415 hr

**Lunch Symposium 1: Bricks, Tools, Chips, Brains for the modernisation of Laboratory Medicine in Italy and Europe (sponsored by Societa Italiana di Medicina di Laboratorio)**

**LS1-1. Downsizing and modernization of Laboratory Medicine in Italy and SIMeL**

Cappelletti P

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In the very middle of an extremely difficult and critical evolution of the clinical lab, the Laboratory Medicine in Italy must overcome the distress born from uncertainty and exhaustion and affirm some perspectives of development. Some kind of rationalization of the Italian clinical laboratories as unavoidable, not just because the economic drive. The real problem is the redundancy in structures and employees. A vast majority of active laboratories in Italy is very scattered, and some private labs cannot attain critical mass nor representative case reports. The future demands coupling of efficiency to effectiveness; the driver is appropriateness. The "American" way to Consolidation did not decrease the test number; but it split instead the "natural" population from the lab services. There is an alternative way which takes into account economic and organizational needs, but also and most important the very essence of Laboratory Medicine: an appropriate answer to a clinical question which exists even when not clearly expressed and the quest for Quality and equitable access - "Pathology Modernisation". The core of the proposal is an inclusive *managed networks*. These activities and the link they create with patients and clinicians define the "natural" population to serve and the maximum limit of concentrations and networks. Pathology is a clinical diagnostic service, including direct patient care, interpretation and partnership with clinicians; it's the key interface to provide services to patients, even when the intermediary is the clinician, also through surveys, multidisciplinary meetings, clinical groups. The Italian Pathologists affirm to warrant the technology development and its accuracy, the cost containment, the appropriateness of care paths and the effectiveness of the laboratory answer to the clinical question, everywhere in the network of the laboratory services. But they ask that the rationalization be built by the same evidence-based criteria adopted by the modern medicine.

**LS1-2. Information technology, LIS and HIS: A never ending story**

Caputo M

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Abstract not available at time of printing.

**LS1-3. An electronic thesaurus of EBLM diagnostic tests\***

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It is difficult for both laboratorians and clinicians to locate reliable data assessed with the tools of Evidence Based Laboratory Medicine (EBLM). In 2001 we published a Thesaurus of the Sensitivity, Specificity, Positive (LR+) and Negative (LR-) Likelihood Ratio of more than 1000 tests for different diseases. In 2006 we prepared an enlarged CD version of the volume; the number of tests was doubled; Diagnostic Odds Ratio (DOR), a promising even if not ideal tool, and Number Needed to Diagnose (NND) were added. DOR is the ratio of the odds of disease in test positives relative to the odds of disease in test negatives (LR+/LR-); NND is the reciprocal of the fraction of positive tests in the group with the disease minus the fraction of positive tests in the group without the disease ( $1/[\text{Sensitivity} - (1 - \text{Specificity})]$ ). The CD includes a browser for searching database using the test or the disease as keywords; the user can visualize the changes in probabilities with the aid of a Fagan's nomogram displayed on the screen. We present now a web version of the Thesaurus that can be accessed through the website of the Society [www.sime.l.it](http://www.sime.l.it) starting August 20<sup>th</sup> 2007. The Thesaurus is the English and Spanish translation of the CD database but displays greatly improved features. The application has been developed with Microsoft® ASP (Active Server Pages) technology and carried out with Web Server Microsoft® IIS (Internet Information Server). The Thesaurus can be consulted using a classical browser running JavaScript® (Internet Explorer o Mozilla Firefox) scripts. The database of the electronic EBLM Thesaurus will be continuously updated by our group and an automated interactive Fagan's nomogram graphically displays the post-test probability yielded by the pre-test probability estimated by the user and the LR<sub>s</sub> obtained searching the Thesaurus.

**LS1-4. Pathology education and research in Germany**

Oellerich M

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Pathology has a long standing tradition in Göttingen. In the 19<sup>th</sup> century Jakob Henle, who described the Henle loop, worked and lectured in Göttingen for 33 years as an anatomist and pathologist. His student Robert Koch worked in Berlin as a physician and a bacteriologist and received the Nobel Prize for physiology and medicine in 1905. The various disciplines of pathology are organized in Germany in the form of independent departments. There is, however, a trend to coordinate such departments in "Centres of Clinical Pathology". Such centres have already been successfully established at the universities of Hamburg and Bochum to further integrate and centralize diagnostics. The German United Society for Clinical Chemistry and Laboratory Medicine favors this development. In Germany, chemical pathology is part of laboratory medicine, which also includes haematology and immunology diagnostics, medical microbiology, molecular diagnostics and therapeutic drug monitoring. There are at the university level 26 departments each with an independent chair or director and 8 divisions without an independent chair or director. Furthermore there are numerous community hospital laboratories which are directed either by laboratory medicine physicians or internists. There are ten large and numerous smaller private laboratories serving outpatients and smaller hospitals. The curriculum

for medical students includes mandatory courses in all disciplines of pathology. Postgraduate training and specialization in pathology or neuropathology is open to doctors of medicine with a licence to practice medicine. Six years training is followed by an examination. The licence for a pathologist or neuropathologist is certified and registered by the Regional Medical Board. The specialization starts as a common trunk with two years basic training in pathology at a certified institution followed by four years training either in pathology or neuropathology. Postgraduate training and specialization in laboratory medicine is open to doctors of medicine and involves a five years training. This includes one year in internal and general medicine or paediatrics, half a year each in a microbiology, infectious serology and immune haematology laboratory. Two and a half years are spent in laboratory medicine including clinical chemistry, medical microbiology and transfusion medicine. After five years training there is an examination to become "Facharzt für Laboratoriumsmedizin" that is laboratory medical physician. The licence is certified by the Regional Medical Board. The licence of a laboratory medical physician entitles the holder to independently run and direct a medical laboratory. Generation of laboratory reports is considered by German law to be a medical practice. The postgraduate training and specialization in clinical chemistry is open to chemists, biochemists and doctors of medicine. It involves a five-year training period in certified laboratories for clinical chemistry. Up to two years of scientific research work can be recognized. There is an examination after the five years of training to become a Clinical Chemist. The examination is certified and registered by the German United Society for Clinical Chemistry and Laboratory Medicine (DGKL) but not by the Regional Medical Board. Diagnostic molecular pathology is a very dynamic research area. Advances in genomics and proteomics have generated many candidate biomarkers including DNA, RNA and protein biomarkers with potential clinical value. Chemical pathology can be supportive in the establishment of technical platforms to improve the research infrastructures in this field. Proteomics holds great promise in providing new sensitive tools in particular for early detection of neoplasms, assessment of tumour malignancy and the discovery of novel drug target proteins and biomarkers of diseases. To translate, however, the promise into reality from bench to bedside is the real challenge. Current economic and social pressures are further challenges increasing competition between disciplines for funds from the state and industry, for the best specialists, scientists and students, for diagnostic fields, and for attractive research projects at a national and international level. They are also responsible for rapidly changing conditions in our health care systems and university structures. Therefore, it seems to be necessary to build stronger bridges between our national and international sister societies and to improve cooperation and harmonisation in post-graduate training and joint research programs. The preservation of independent university departments for pathology and laboratory medicine is essential to guarantee high standards for education, practice and research. On a global basis the World Association of Societies of Pathology and Laboratory Medicine (WASPaLM) currently represents 38 societies in 28 countries. This organisation has numerous supportive activities including the development of international standards for laboratory accreditation and for certification of pathologists and laboratory medicine physicians and the creation of global opportunities for cooperation in education, research, practice and commerce. Examples of these activities are the Gordon Signy fellowships presented by the World Pathology Foundation to pathologists from countries in need, the biannual world congress and educational pathology workshops around the world.