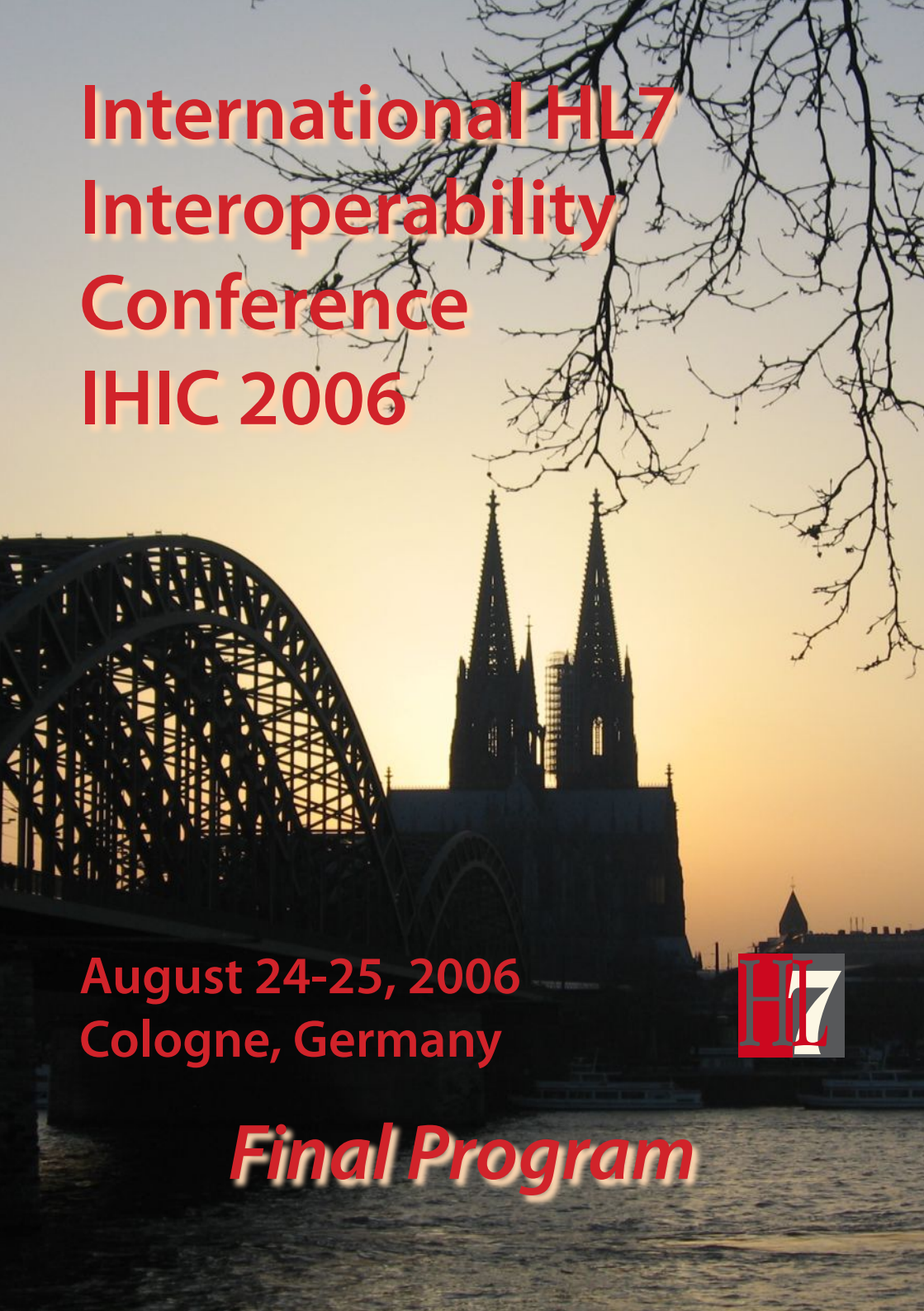
International HL7 Interoperability Conference IHIC 2006



August 24-25, 2006
Cologne, Germany

Final Program

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Final Program

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Welcome to Cologne

This year, we have the 7th event of this kind in a row. The International HL7 Interoperability Conference IHIC 2006 is formerly known as the *International Affiliates Meeting*. After successful and well-attended meetings in Dresden (Germany) in 2000, then Reading (United Kingdom), Melbourne (Australia), Daegu (Korea), Acapulco (Mexico) and last year in Taipei (Taiwan) we now meet in Cologne. Welcome!

On behalf of the Board of Directors of HL7 Germany and HL7 the Netherlands I invite you to meet in scenic and historic Cologne, Germany, to exchange ideas and share experience of the latest international developments in HL7.

Standards in Healthcare do not live from their specifications but from their implementations. There is not only a strong contribution to the HL7 standard development process from people around the globe. All over the world a paramount interest can be recognized to really implement HL7's healthcare information technology standards for global interoperability. Meanwhile in many countries this interest has fostered real implementation projects, with a profound conceptual and strategic background and sometimes even with financial funding. Some countries have chosen the HL7 Version 3 family of standards as a strategy for healthcare communications in their respective countries.

We want to share with you experiences with implementation of HL7, wherever, regardless of the scale of the projects or financial background.

Again a warm welcome to Cologne and to this conference.

dr Kai U. Heitmann
Director International Affiliates
Board of Directors HL7 US
Chair HL7 Germany

Program Overview

August 24

10:00 **Welcome**

M1 **Opening Keynote**

10:15 Experiences HL7 UK
Charlie McCay, Chair HL7 UK (UK)

10:45 Coffee Break

W1 **HL7 at work I**

11:00 Applying the HL7 v3 care provision messages in practice: first experiences
William TF Goossen (The Netherlands)

11:30 Realizing a European research infrastructure in Nephrology with HL7 version 3
Ronald Cornet (The Netherlands)

12:00 Lunch

W2 **HL7 at work II**

13:30 Family History Information Exchange Using the HL7 V3 Clinical Genomics DSTU
Amnon Shabo (Shvo), John Sharko, Brain Drohan, Kevin Hughes (Israel)

14:00 The Genomic Sequence Variation Markup Language (GSVML) and its Interface to the HL7 Information Models
Jun Nakaya, Kaei Hiroi, Woosung Yang, Michio Kimura (Japan)

14:30 HL7 Message Server for Devices of Pulmonary Function Tests
Il Kon Kim, Yun Sik Kwak, Min Ji Kim, Hangchan Kim, Sun Chil Kim, Yong Ae Kwon, Chang Dae Jun (Korea)

15:00 Coffee Break

B1 **HL7 getting into it and beyond**

15:15 Unveiling HL7? The challenges faced by newcomers to an emerging healthcare standard
Ruth Kidd (UK)

15:45 Strengthening the HL7 Development Framework methodology: recommendations for validating user requirements
Isobel Frean (Australia / UK)

16:15 DAM Profiles: Using UML to Specify Interactions Precisely
Tim Benson (UK)

16:45 Identifying different types of standards to achieve interoperability in healthcare
Robert A. Stegwee (The Netherlands)

T1 **Tutorials (parallel with B1)**

15:15 Implementation of HL7 Version 3
Charlie McCay, René Spronk

15:15 Clinical Document Architecture (CDA)
Liora Alschuler

19:00 **Evening Event**

August 25

M2 **Keynote**

9:00 CDA around the world
Liora Alschuler, Alschuler Associates (USA)

C1 **CDA Forum: Experiences with the Clinical Document Architecture I**

9:30 Introduction of the Clinical Document Architecture Release 2 in Germany
Kai U. Heitmann (Germany)

9:50 Clinical Information in CDA standard with MFER
Masaaki Hirai, Michio Kimura (Japan)

10:15 HL7 Japan CDA Referral Document Deploys Nationwide
Michio Kimura, Masaaki Hirai (Japan)

T2 **Tutorials (parallel with C1+C2)**

9:30 Processing HL7-XML with XSLT
Benjamin Jung (Canada)

10:45 Coffee Break

C2 **CDA Forum: Experiences with the Clinical Document Architecture II**

11:00 Early experience from HL7 v3 tools, the Pedigree topic, and CDA in the Danish HNPCC Registry
Stelios Sfakianakis, Catherine E. Chronaki (Greece / Denmark)

11:25 A document oriented approach to a national EHR - applying CDA R2 in Finland
Jari Porrasmaa, Vesa Pakarinen (Finland)

11:50 International information standards for anesthetic records
Martin Hurell, Martin Gardner (UK)

12:10 Lunch

E1 **National Experiences**

13:30 Interoperability between IT Systems in Hacettepe University Hospitals in Turkey
Aydin Turabi Bakir, Pinar Yildirim (Turkey)

13:50 Improving Healthcare Delivery Processes with ICT Solutions in Republic of Croatia
Bojan Blazona, Darko Gvozdanovic (Croatia)

14:10 The role of HL7 in the Development of Integrated National Health Information Systems in Developing Countries
Diego M. López, Bernd Blobel (Germany)

14:30 An implementation for healthcare information delivery systems in adopting health informatics standards and advanced information technologies
Ruey-Kei Chiu, Kevin Chang, Kuo Chin Tsai, Chia Ching Huang, Kuan Chi Lin, Storm Wang (Taiwan)

14:50 Coffee Break

M3 **Keynote**

15:10 SNOMED CT
Kevin Donnelly, SNOMED International (USA)

V1 **Terminologies**

16:00 Approaches to Adoption of Laboratory LOINC in Taiwan
Chien-Tsai Liu (Taiwan)

16:25 Closing Remarks
Kai U. Heitmann

August 24

10:00 **Welcome**

Kai U. Heitmann, Director International Affiliates, Board of Directors HL7 USA, Chair HL7 Germany (Germany / The Netherlands)

M1 **Opening Keynote**

10:15 Experiences HL7 UK

Charlie McCay, Chair HL7 UK (UK)

The National Program for IT is a 10 year program to build an information infrastructure to improve patient care in England. HL7 v3 was chosen to deliver the messaging requirements, with the National Program working as an early adopter developing message specifications where needed. This talk will be in two parts. Firstly a look at HL7 from the perspective of NPfIT, and then a discussion of how HL7 v3 and NPfIT have affected other healthcare interoperability projects in the UK. There will be discussion of the issues encountered in some of these projects, and solutions adopted.

10:45 *Coffee Break*

W1 **HL7 at work I**

11:00 Applying the HL7 v3 care provision messages in practice: first experiences

William TF Goossen (The Netherlands)

This presentation will cover the development, the contents and structures of the HL7 v3 artifacts and the practice applications and some experiences with the Care Provision domain in HL7 v3, which has recently received the DSTU status.

11:30 Realizing a European research infrastructure in Nephrology with HL7 version 3

Ronald Cornet (The Netherlands)

The European Renal Association – European Dialysis and Transplant Association (ERA-EDTA) is broadening the set of data collected about patients on renal replacement therapy. HL7v3 will be used to exchange data between renal centers and regional / national registries, and between these registries and the European registry. Clinical experts have defined the data set, and definition of HL7v3 models and messages is in progress. In 5 countries, a pilot implementation will be realized to demonstrate feasibility of the approach.

12:00 *Lunch*

W2 HL7 at work II

13:30 Family History Information Exchange Using the HL7 V3 Clinical Genomics DSTU

Amnon Shabo (Shvo), John Sharko, Brain Drohan, Kevin Hughes (Israel)

A number of family history applications are in use by healthcare professionals and patients. Each has its own proprietary data format for family history health information, thus making it difficult to exchange information between programs. By using the HL7 V3 Clinical Genomics Family History DSTU, disparate family history applications will be able to exchange an individual's family history. This standard holds the pedigree structure as well as an appropriate representation of clinical-genomic correlated data. We will describe an implementation project conducted by Massachusetts General Hospital, University of Massachusetts at Lowell and IBM Research Lab in Haifa.

14:00 The Genomic Sequence Variation Markup Language (GSVML) and its Interface to the HL7 Information Models

Jun Nakaya, Kaei Hiroi, Woosung Yang, Michio Kimura (Japan)

The development of the data exchanging format for the genomic sequence variation data exchanging with focusing on human health application including researches is the demand. The GSVML with the interface to the HL7 information models was developed through eight steps having the use case analysis and the domain investigations. The GSVML is human health oriented and has three categories as variation data, direct annotation, and indirect annotation. The GSVML having HL7 interface has an ability to enhance the genomic sequence variation data utilization internationally by providing a standardized platform for both clinical and research applications.

14:30 HL7 Message Server for Devices of Pulmonary Function Tests

Il Kon Kim, Yun Sik Kwak, Min Ji Kim, Hangchan Kim, Sun Chil Kim, Yong Ae Kwon, Chang Dae Jun (Korea)

VMAX (pulmonary vital capacity measuring device), Blood Gas Analyzer, and Body Box(pulmonary compliance computing device) for pulmonary function tests are not usually interfaced with Hospital Information Systems(HIS), thus physicians test orders have been manually entered into those devices and the integrated test reports have been generated manually. This creates an inconvenience in hospitals where the HIS is implemented.

To connect these discrete systems we have done two-case studies by using HL7 V2.4 based messaging toolkit developed by our laboratory, HIT V0.9; and caAdapter, HL7 V3.0 tool developed by NCICB. This server supports communications between physicians and laboratory technologists about test orders and its results through HIS. It's first necessary step to achieve seamless integration of components to build EHR (Electronic Health Record) and e-Health Systems.

15:00 Coffee Break

B1 HL7 getting into it and beyond

15:15 Unveiling HL7? The challenges faced by newcomers to an emerging healthcare standard

Ruth Kidd (UK)

How can the HL7 international community work together more closely to share domain knowledge, training ideas and lessons learned?

Using individual case studies from the Connecting for Health project in the UK, this presentation hopes to put forward some ideas provoke discussion about international cooperation and collaboration which is surely vital to the future of any emerging global standard.

15:45 Strengthening the HL7 Development Framework methodology: recommendations for validating user requirements

Isobel Frean (Australia / UK)

This paper will draw upon experiences from research undertaken in Australia to argue for the need for a process for validating user-requirements in the Health Level Seven (HL7) Development Framework (HDF).

16:15 DAM Profiles: Using UML to Specify Interactions Precisely

Tim Benson (UK)

Poor communication creates misunderstandings between users and technicians who develop the HL7 specifications and the sender and receiver software applications.

A stringent specification is needed for every interaction, in a form that can be understood and checked by both users and technicians. Traceability is required throughout the interoperability project lifecycle.

The conventional top-down, technology-centric method of developing interoperability specifications needs to be modified to become user-centric and bottom-up.

The key deliverable should be a UML specification for each interaction. This is referred to as a domain analysis model profile (DAM profile). Each DAM profile is then mapped to an appropriate interchange language (e.g. HL7 V3 or V2). The superset of related DAM profiles is their DAM.

16:45 Identifying different types of standards to achieve interoperability in healthcare

Robert A. Stegwee (The Netherlands)

This research attempts to provide structure to the types of standards needed to achieve different levels of interoperability within a specific domain, in this case healthcare. Both theoretical background and practical examples are provided to better understand the levels of interoperability and the types of standards needed to achieve them.

T1 Tutorials (parallel with B1)

15:15 Implementation of HL7 Version 3

Charlie McCay, René Spronk

This workshop will expose the most pressing issues for those implementing useing HL7v3 and develop answers to them. This session will be looking at how real projects have answered the questions that they encountered when using HL7v3, and sharing the questions to which they found no answers in the standard, just solutions that were good enough for the project.

15:15 Clinical Document Architecture (CDA)

Liora Alschuler, Alschuler Associates

The Clinical Document Architecture is HL7's specification for standards-based exchange of clinical documents. CDA is based on the concept of scalable, incremental interoperability and uses Extensible Markup Language (XML), the HL7 Reference Information Model (RIM) and controlled terminology for structure and semantics.

This tutorial presents the business case for CDA, its primary design principles and an overview of the technical specification. The session describes CDA projects in the United States, Europe and Asia/Pacific and the tools available for CDA creation, management and distribution. It describes the current work on CDA summary documents including the Care Record Summary (CRS) and Continuity of Care Document.

19:00 Evening Event

At the evening of August 24, we will have a dinner buffet at the typical Cologne „Früh Brauhaus“ (a brewery) not far the Cathedral. We will have the opportunity to taste typical Cologne food and beer called “Kölsch” (among other things of course).

For registered participants and registered accompanying persons of the conference the entrance is free, if you want to additional persons you can do this by buying additional entrance cards at the registration desk.

Please have your tickets with you for this event. They can be found in your conference material.

August 25

M2 Keynote

9:00 CDA around the world

Liora Alschuler, Alschuler Associates (USA)

This talk will discuss the status of CDA adoption around the world, considering whether or not it has crossed the chasm between early adopters to the early majority. It will review major local, regional and national implementations of CDA and will discuss how CDA supports alternate architectures for interoperability and diverse healthcare business practices.

C1 CDA Forum
Experiences with the Clinical Document Architecture I

9:30 Introduction of the Clinical Document Architecture Release 2 in Germany - the Sciphox experience

Kai U. Heitmann (Germany)

Continuing the Sciphox project that started early 2000 focussing on medical documentation between hospitals and the outpatient area, the next phase of Sciphox aims on definitions based on the Clinical Document Architecture Release 2 in Germany. Recently a care record summary has been created as an implementation guide. This initiative was industry-driven and 15 vendors not only helped to defined the national specification, but also implemented it into the systems and demonstrated the working interfaces on a large exhibition.

9:50 Clinical Information in CDA standard with MFER (medical waveform format encoding rules)

Masaaki Hirai, Michio Kimura (Japan)

This presentation is about observation reports or clinical information in CDA standard with MFER (medical waveform format encoding rules). HL7 v2 has not become popular for physiological examination result. The reason is the physiological examination absolutely requires a medical waveform itself such as ECG, EEG, spirometry etc. However, a description of medical waveform is necessary not only expertise, but also complicated and specialized representation. MFER is designed to aim decreasing sacrifice the unique features and to minimize the implementation burden. These features are already demonstrated by many manufacturers. ECG report in CDA with MFER will be presented, allowing also other clinical summaries, reports, IHE and so on.

10:15 HL7 Japan CDA Referral Document Deploys Nationwide

Michio Kimura, Masaaki Hirai (Japan)

This is formerly called MERIT-9 document standard, and reported in former HL7 CDA conferences. Now it is HL7 Japan standard by HL7 Japan vote, and is employed in Shizuoka Prefecture EHR project. CDA R2 is used for referral documents and patinet data CD, with pointers to clinical contents (HL7 v2.5 and DICOM). Conforms IHE's XDI (Cross-enterprise Document Interchange). Digital signature methods for the documents conforms W3C recommendation.

10:45 *Coffee Break*

C2 CDA Forum
Experiences with the Clinical Document Architecture II

11:00 **Early experience from HL7 v3 tools, the Pedigree topic, and CDA in the Danish HNPCC Registry**
Stelios Sfakianakis, Catherine E. Chronaki (Greece / Denmark)

Genetic departments, laboratories, and surgical departments gather clinical and genomic information about an individual and submit this information to a Hereditary Non Polyposis Colon Cancer (HNPCC) registry along with a family identification number. The objective of this study is to investigate the appropriateness of the HL7 v3 family of standards in delivering clinical and genomic data to the Danish HNPCC Registry in a solution that conforms to international standards. This is the first step in linking HNPCC registries throughout the world for the benefit of personal health care and clinico-genomic research.

11:25 **A document oriented approach to building a national EHR - a case study of applying the CDA R2 standard in Finland**
Jari Porrasmaa, Vesa Pakarinen (Finland)

This presentation gives an overview of the development of a national EHR solution in Finland. Several topics are covered but the main focus is on the implementation of the Clinical Document Architecture R2 standard.

11:50 **International information standards for anesthetic records**
Martin Hurell, Martin Gardner (UK)

This Case Study will give an outline of anaesthesia information standards work already done by the International Organisation for Terminology in Anesthesia and by HL7 SIGGAS (Special Interest Group - Generation of Anesthesia Standards), and of plans for future work towards interoperable information standards for clinical anaesthesia.

T2 Tutorials (parallel with C1+C2)

9:30 **Processing HL7-XML with XSLT**
Benjamin Jung (Canada)

This tutorial offers an ideal introduction to the Extensible Stylesheet Language version 2.0 (XSL) and associated standards such as XSLT and XPath. Attendees will get a solid understanding of XSL based transformation concepts and current applications. The hands-on part of this tutorial gives every student the chance to explore the power of XSLT by means of HL7-XML message transformations. Messages from a real-world HL7-XML implementation are used to showcase a typical conversion from a transmission format such as HL7-XML (e.g. CDA) into presentation formats such as XHTML (web) and PDF (print).

On-site demonstrators are available for questions and help. An accompanying website will be available for attendees prior to the tutorial to download acompanying course materials, such as required software (open source or free of charge), sample files and reference sheets.

12:10 *Lunch*

E1 National Experiences

13:30 Interoperability between various IT Systems in Hacettepe University Hospitals in Turkey

Aydin Turabi Bakir, Pinar Yildirim (Turkey)

This study covers the interoperability between various information systems used in Hacettepe University Hospitals in Turkey. Some interface applications using standards such as HL7 and DICOM and the interoperability experiences in the development of the solution are analyzed in this case study.

13:50 Improving Healthcare Delivery Processes with ICT Solutions in Republic of Croatia

Bojan Blazona, Darko Gvozdanovic (Croatia)

During presentation we will introduce Croatia's IHCIS solution architecture giving an overview of the supported IHCIS services. We will discuss impacts of the trial's data analysis in support of the Croatia's IHCIS solution architecture design and future upgrades.

14:10 The role of HL7 in the Development of Integrated National Health Information Systems in Developing Countries

Diego M. López, Bernd Blobel (Germany)

Health systems in developing countries face the urgent challenge to improve the efficiency of health services. The design of the future-proof interoperable, scalable, flexible and secure information systems is only possible by approaching the advanced state-of-the art in health information systems and software engineering. In the paper is illustrated how the HDF is evolving to a unified process able to support the analysis, design and implementation of national information systems. HDF provides the knowledge, reference models, vocabularies, data types, etc. required to realize semantically interoperable health systems.

14:30 An implementation for healthcare information delivery systems in adopting health informatics standards and advanced information technologies

Ruey-Kei Chiu, Kevin Chang, Kuo Chin Tsai, Chia Ching Huang, Kuan Chi Lin, Storm Wang (Taiwan)

This research paper presents an experimental case implementation for supporting an innovative information interchanging and delivering system by adopting the medical standards including Health Level 7 (HL7), and Clinic Data Architecture (CDA), particularly with the adoption of HL7 v3.0 RIM, and Digital Imaging and Communications in Medicine (DICOM) as well as leveraging the use of advanced information technologies including Web services, software agents, and objected-oriented methodologies of system implementation.. The objectives of this case implementation aim to study the effectiveness and constraints for the adoption for current healthcare standards and the use of modern advanced information technologies in the system development, as well as the degree of enhancement for the system interoperability in the healthcare industry. A multi-agent system framework is designed as the front-end information interchanging services for a clinic information system in order to be able to carry out multiple information interchange and transmission in different information delivery applications for a medical institution with its communication peers. This allows interchanging the patient data in patient referral, for reporting infectious disease cases to CDC of Taiwan, for

claiming the insurance fee to National Health Insurance Institute, etc. This presentation will focus on patient data transmission and referral between a central hospital and its clinics.

14:50 *Coffee Break*

M3 Keynote

15:10 SNOMED CT

Kevin Donnelly, SNOMED International (USA)

A clinical terminology is essential for Electronic Health records and other eHealth applications. It represents clinical information input into clinical IT systems by clinicians in a machine-readable manner. Use of a Clinical Terminology, implemented within a clinical information system, will enable the delivery of many benefits including clinical decision support, disease screening, and enhanced patient safety. Clinical Terminologies enable effective secondary use of the clinical data for performance management and the evaluation of resources to patient outcomes without the need for time consuming and costly separate data collection. SNOMED CT as the global clinical terminology will help to enable nations to effectively share clinical data to care for the mobile citizen and collaborate on health issues such as pandemics and management of chronic illnesses.

This presentation will provide an overview of SNOMED CT and how it is used in healthcare applications and its impact on clinical practice, an update on the creation of the SNOMED Standards Development Organization, a new Governance model for SNOMED CT and collaborative efforts with HL7 and other SDO's

V1 Terminologies

16:00 Approaches to Adoption of Laboratory LOINC in Taiwan

Chien-Tsai Liu (Taiwan)

Taiwan's Department of Health (DOH) has been focused on development of electronic health records (EHRs) nationwide for improving quality of healthcare and controlling the increase in healthcare expenditures in recent years. One of essential components of health records is the laboratory data. Currently the laboratory orders and observations in Taiwan are named and coded on an individual hospital basis. However, they use National Health Insurance (NHI) codes for insurance reimbursement. For this reason, NHI codes are the best choice as an intermediate tool for mapping local codes into the LONIC ones. We will present methods for building up a NHI-LOINC laboratory mapping database, describe a tool, called NHI-LOINC mapping assistant (NLMA), for facilitating the mapping of hospital local codes into the corresponding LONIC codes and report the status of adoption of LOINC in Taiwan.

16:25 Closing Remarks

Kai U. Heitmann

Travel Information

Venue

The conference takes place in

The Hilton Cologne

Marzellenstrasse 13-17
Cologne, Germany 50668

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Conveniently located in the centre of Cologne, Hilton Cologne is only 100 metres from the main railway station and the famous cathedral ‚Koelner Dom', as well as the main shopping streets, theatres, museums and opera. The Old Town of Cologne overlooking the River Rhine, and bars and nightclubs are within walking distance. Cologne's fairground is easily reached on foot (25 minutes), by direct underground line (10 minutes) or by taxi (10 minutes). The Cologne/Bonn airport is just 18 km away (20 minutes by taxi).

Hilton
Cologne

Directions to the Hotel

From Cologne-Bonn Airport, take the Autobahn A59 in the direction of Cologne-Zentrum which ends in Cologne-Deutz. Cross the Rhine via "Deutzer Brücke" (Deutzer Bridge) and at the end of the bridge, take the first right for Dom and Hauptbahnhof (station). At the traffic lights at the end of the underpass, turn right and enter the tunnel again. At the end of the tunnel turn left at the traffic lights, go straight through the underpass and turn right at the famous fast food restaurant into Marzellenstrasse. Continue straight and the Hilton Cologne hotel is on your left.

Local Airports

Köln / Bonn Flughafen

Distance from hotel: 15 km, 9 miles, drive time: 20 min.

Directions: From Airport take the A59 towards Cologne-Zentrum. Cross Rhine via Deutzer Bridge, turn right for Station. At traffic lights turn right enter tunnel. Turn left go straight thru & turn right. Continue straight and hotel is on left.

Transportation to and from the Airport: Bus Service minimum EUR 5.00, Taxi, Subway: call the hotel.

Düsseldorf-Airport

Distance from hotel: 45 km, 28 miles, drive time: 45 min.

Directions: Highway A59 to Cologne ‚Zentrum', ends in Cologne-Deuz, cross Rhine via "Deutzer Brücke" and turn right at the end of the bridge then follow the direction for Dom/Hauptbahnhof. The Hotel is 200 meters from station.

Frankfurt Airport

Distance from hotel: 180 km, 111 miles, drive time: 2 hr.

Directions: A44 direction Mönchengladbach till highway A57 toward Cologne. Follow signs for Zentrum Centre and then Dom/Hauptbahnhof heading toward main station. Hotel is 200 meters from station.

Good bye

and „Auf Wiedersehen“ (see you again)

in Cologne

The HL7 Working Group Meeting from April 29 until May 4, 2007, will also convene in Cologne. Please mark your calendars!