

From SNOP to SNOMED International

A 30 year History

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Secrétariat francophone international
de nomenclature médicale
Sherbrooke, Québec

A summarized presentation for a select audience
at the University of Waterloo
November 26, 2003

systematized nomenclature of pathology



COMMITTEE ON NOMENCLATURE AND CLASSIFICATION OF DISEASE

ALPHABETIC INDEXES

ENZYME
DISORDERS

CHEMICALS
AND DRUGS

4 DIGIT
TOPOGRAPHY

FUNCTION

ETIOLOGY

MORPHOLOGY

TOPOGRAPHY

Extract from summary of article titled :
An information Processing System for Pathology Data

«The continuing experimental evaluation indicates that the nomenclature as recently published in the First Edition of SNOP is complete enough to provide for the automatic storage and retrieval of most pathology data. In addition, preliminary experiments have shown that the new nomenclature is applicable for the coding of clinical manifestations of disease.»

Pratt and Thomas, 1966



Dr B. Barkman, Sr. Gabrielle Tanguay, Dr Roger A. Côté,
Lise Bernier, Dr Marc Lavallée, Dr Léo Cousineau

SNOP

systematized nomenclature of pathology

国際病理学用語 コード

編集

COLLEGE OF AMERICAN PATHOLOGISTS
COMMITTEE ON NOMENCLATURE AND CLASSIFICATION OF DISEASE

監修・補訳

日本病理学会
SNOP刊行委員会

医歯薬出版株式会社

Thirtieth Annual Convention
of
Canadian Association of
Medical Record Librarians



BANFF SCHOOL OF FINE ARTS

BANFF, ALBERTA

SEPTEMBER 21, 22 and 23, 1972

«Thursday, September 21, 1972»

The Automated Medical Record – Part 1

10:45 AM Introduction to the Systematized Nomenclature of Pathology (SNOP). Practice in coding SNOP with exercise sheets and text. Instructions for afternoon session.

- English speaking delegates proceed to Room 307
Session under direction of Mrs. L.K. Holmes.
- French speaking delegates proceed to Room 303
Session under direction of Sister Gabrielle Tanguay

2:00 PM Computer Assisted Instruction – Courtesy of UNIVAC Canada. Individual morning exercises will be computerized; coding will be verified by the computer; answers will be given and discussed.

Saturday, September 23, 1972

9:00 AM The Automated Medical Record – Part II

Presiding Officer : Mrs. Marcia Taggart

Moderator: Dr Arnold Pratt, Director
Division of Computer Research and Technology
National Institute of Health, Bethesda, Maryland
The Philosophy re the Dictionary and Grammar
for use in Computerized Medical Data

Participants: - Dr L. Cousineau, Department of Research,
School of Medicine, University of Sherbrooke,
Sherbrooke, Québec
- Objectives of a Medical Lexicon

Extract of article titled : «From SNOP to SNOMED :
A Challenge for the Medical Record Librarian

« But here comes the challenge! As soon as governments, who pay the medical bill realize that medical information to be useful in every sense has to be captured and coded at the source, there will be a demand for competent people to do just that. Who is better prepared to manage medical information, to interpret it, and then code it in a useful way, if not the medical record librarian?

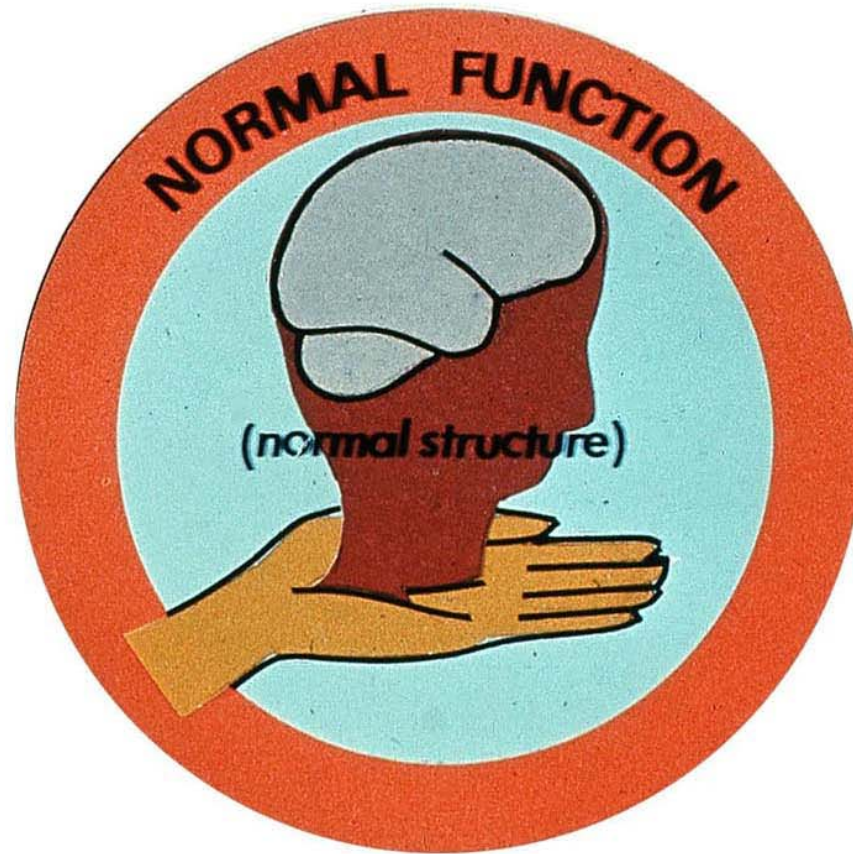
Extract of article titled : «From SNOP to SNOMED :
A Challenge for the Medical Record Librarian

This future need will cause a new orientation with replacement of the medical librarian as we know her by a large computer bank. The so-called medical record librarian will evolve into a medical record technologist, a medical record administrator, or a medical information specialist. She will migrate from the library to the centers of medical activity, such as a ward or clinic, and manage the medical information as it develops. She will be in direct communication by a video-terminal with the patient's computer file.»



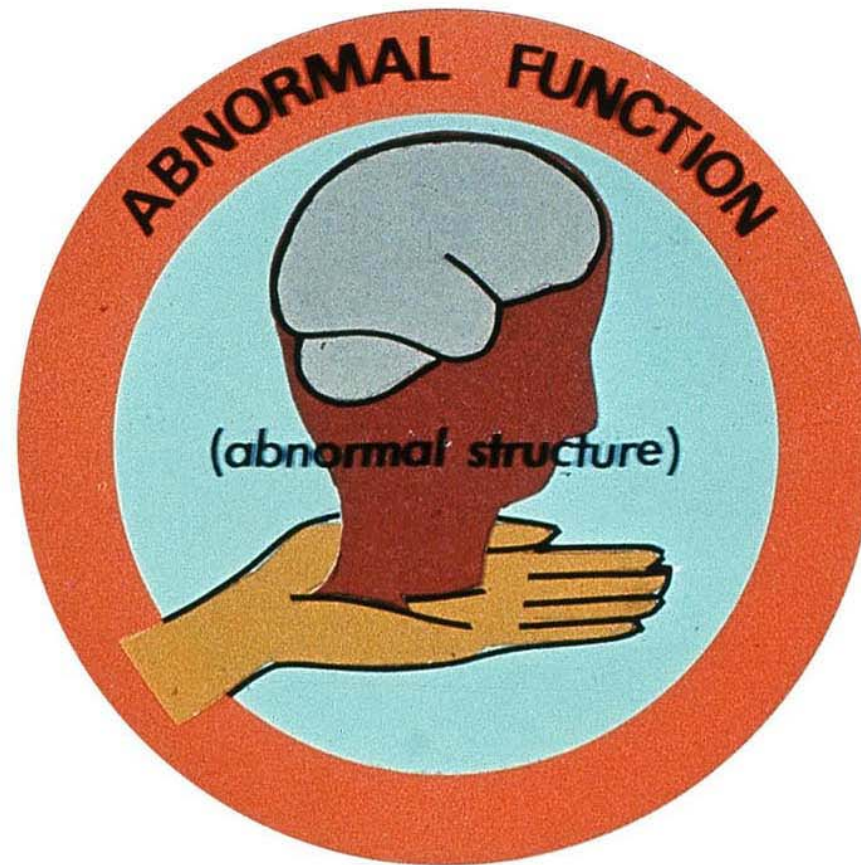
Edmund van Brunt, Tom Lincoln, Arnold Pratt

nature of man



healthy state

nature of man



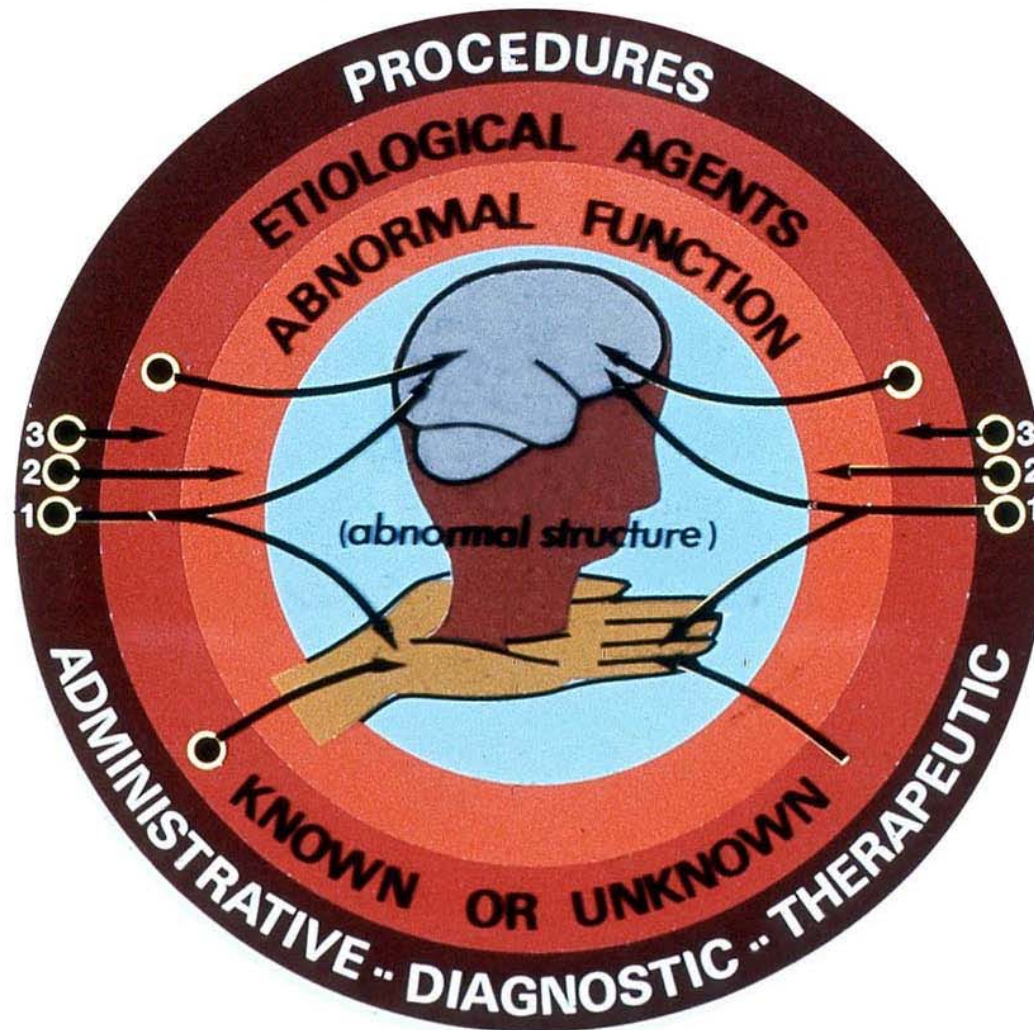
sick state

nature of man



sick state and causes

nature of man



role of medicine in reversal process
sick state to healthy state

SNOMED PROJECT

USA

CANADA

EDITORS



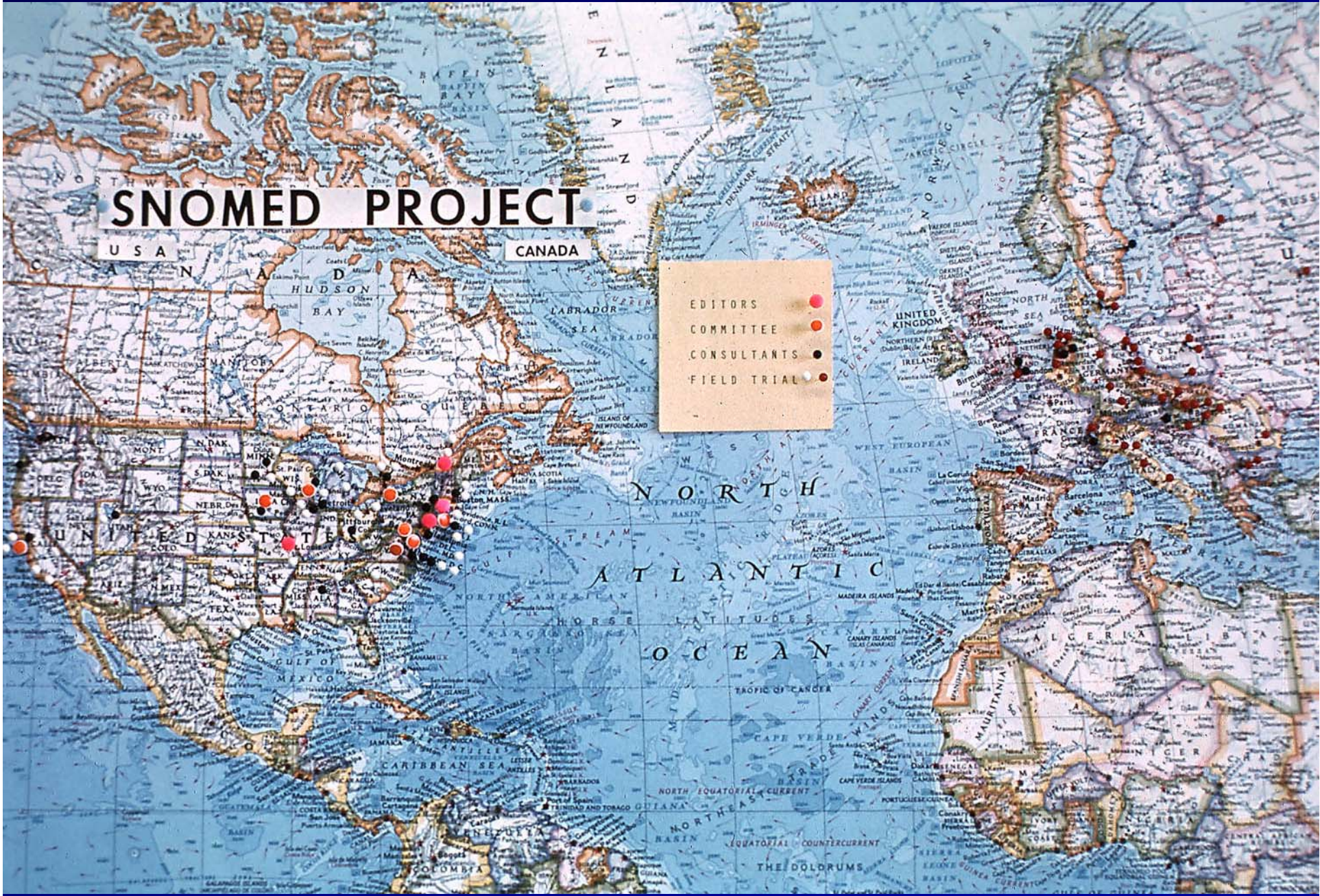
COMMITTEE



CONSULTANTS



FIELD TRIAL



SNOMED PROJECT



CANADA

CAP

USA

- EDITORS
- COMMITTEE
- CONSULTANTS
- FIELD TRIAL

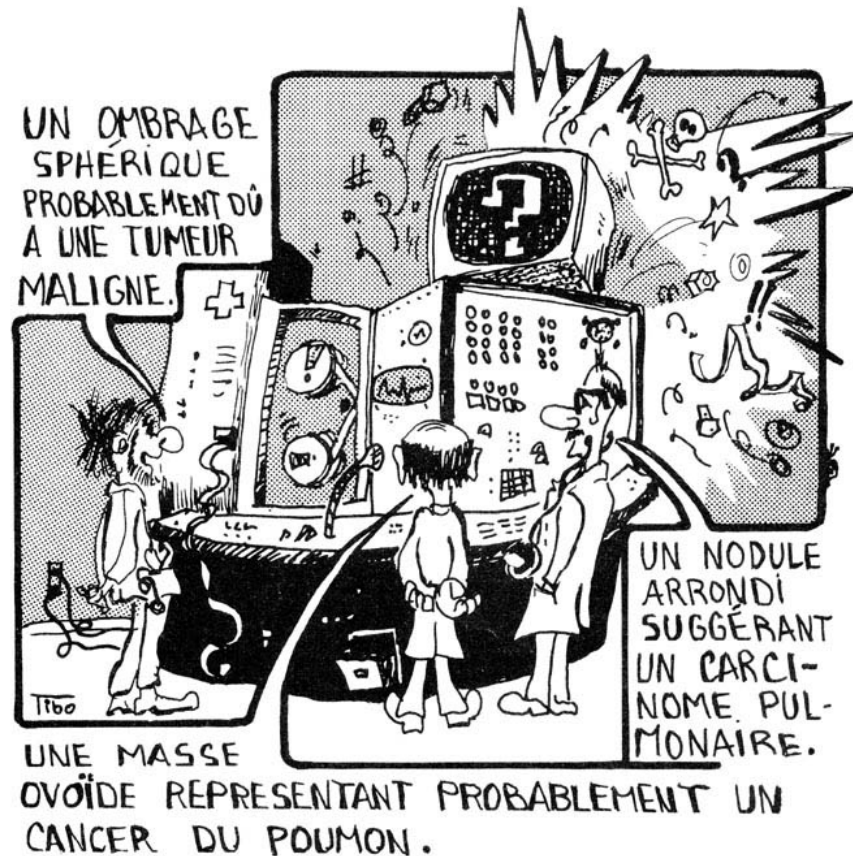


SNOMED Field Trial 1975

- Topography
- Morphology
- Function
- Etiology
- Disease
- Procedure

«SNOMED»

TEXTE DE JEAN-RENE TÊTREULT



SNOMED

systematized nomenclature
of medicine •

COLLEGE OF
AMERICAN
PATHOLOGISTS



M

MORPHOLOGY

1976

SNOMED

systematized nomenclature
of medicine •

COLLEGE OF
AMERICAN
PATHOLOGISTS



SECOND EDITION 1979
UPDATED THROUGH 1982

VOLUME I
NUMERIC INDEX

Extract of WG-6 working conference (September 1984)

« In future health care information systems, the user interface should be based upon natural language. The generation of numerical or alpha-numeric codes should occur within the computer.»

«Automatic encoding of natural language should be used.»

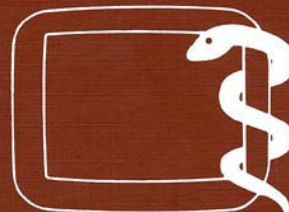
«The morbidity and mortality statistical classification requirements of national and international groups should be the by-product of medically-based health care information systems.»

role of informatics in health data coding and classification systems

edited by
r.a.côté, d.j.protti and j.r.scherrer



IFIP IMIA



north-holland

Extract of Work Session I and II (September 1988)

« There is a strong relationship between standardization and representation : it is not possible to represent anything without some standardization.

SNOMED is an attempt to represent medical knowledge in a functional standardized form. To get the full knowledge, the relationship between things should be known. If one can detect new relationships, it enhances the present knowledge, in contrast to expert systems. The multi-dimensional SNOMED special representation is more powerful than a one dimensional taxonomic approach. SNOMED is a critical structure for auto-indexing/coding.»

computerized natural medical language processing for knowledge representation

edited by
j. r. scherrer, r. a. côté
and s. h. mandil



IFIP



IMIA



WHO

north-holland

M.I.E. – 85 – Helsinki

Round-table on Nomenclature and Classification

Participants

David Rothwell (USA), Roger A. Côté (Canada)

André l'Ours (WHO-Geneva), Francis Roger (Belgium)

Jean-Raoul Scherrer (Switzerland), Hans Peterson (Sweden)

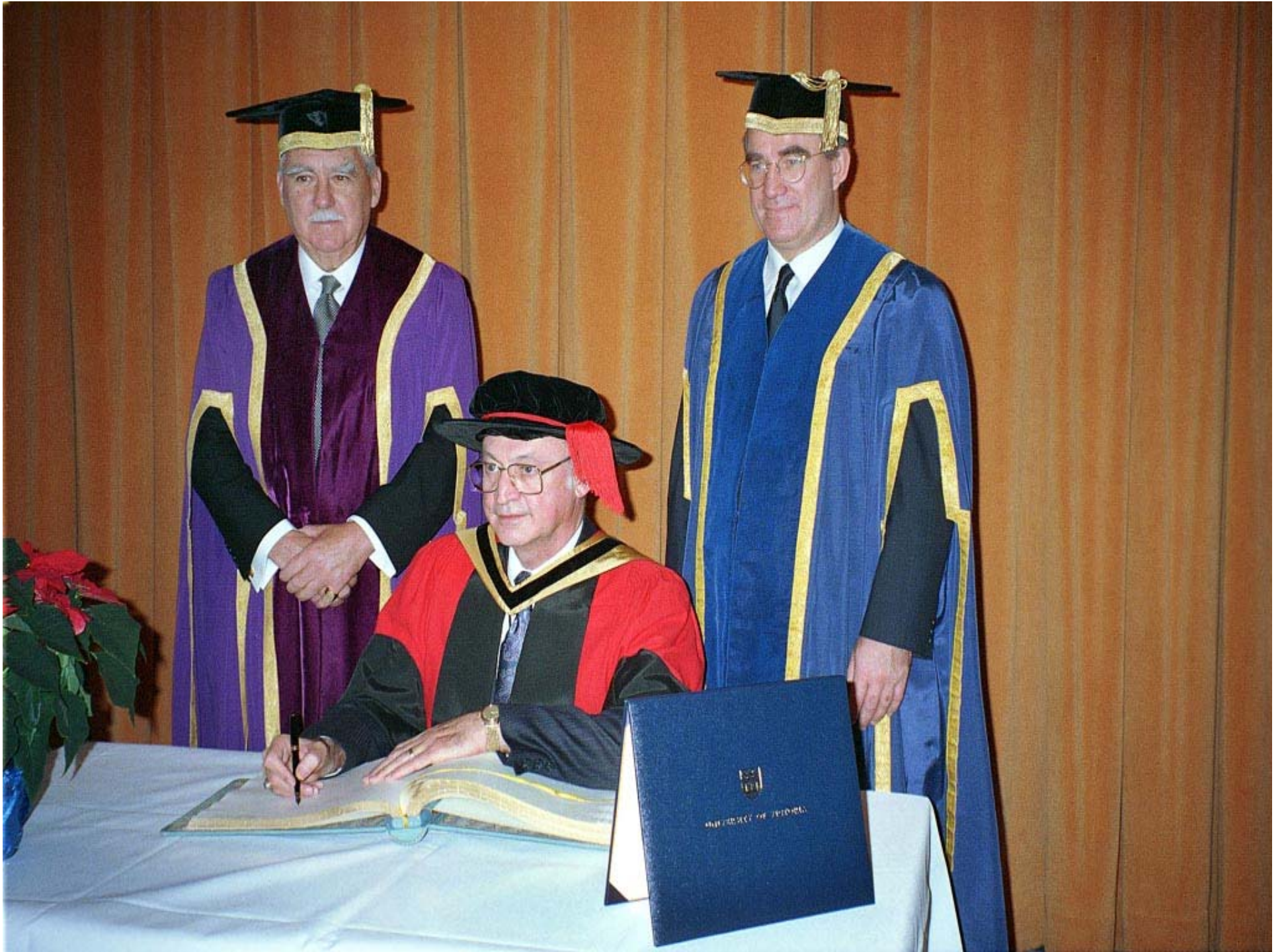
Frederick Wingert (Germany)

Some recommendations

That a uniform nomenclature with definitions and equivalences be developed for each language and country.

That a coded metalanguage (SNOMED) act as a bridge between the different languages.

That automatic computer encoding of natural medical language be developed in each country as a means of capturing physician's data.



LEAD COMPOUNDS

01	Lead monoxide	01	Lead dioxide
02	Lead oxide yellow	02	Lead oxide brown
02	Plumbous oxide	02	Lead peroxide
02	Litharge	02	Lead superoxide
02	Massicot	02	O_2Pb
02	Lead protoxide		
02	PbO		
01	Lead hydroxide	01	Lead phosphate
02	Lead oxide hydrate	02	$O_8P_2Pb_3$
02	Basic lead hydroxide	02	$Pb_3(PO_4)_2$
02	$H_2O_4Pb_3$		

Classification

Nomenclature

Acute appendicitis = Appendix + acute inflammation
T-59200 M-41000

Staphylococcal pneumonia = Lung + inflammation + staphylococcus
T-28000 M-40000 L-24800

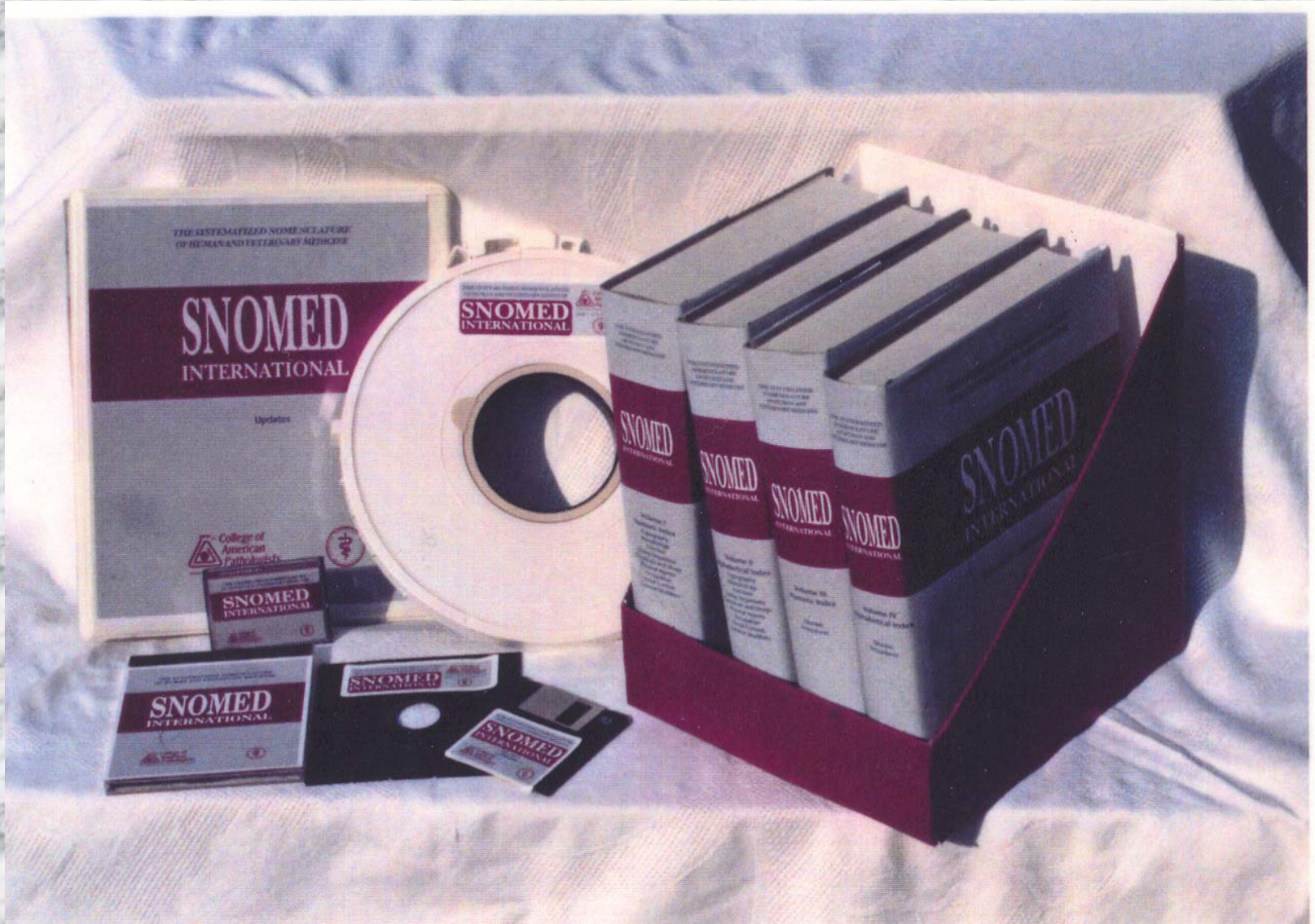
SEE INSIDE
FOR NEW REDUCED
PRICING
INFORMATION

THE SYSTEMATIZED
SNOMED[®]
NOMENCLATURE OF HUMAN
International
AND VETERINARY MEDICINE



“A national medical record database is essential [and] one framework has emerged as the clear leader ... the Systematized Nomenclature of Human and Veterinary Medicine (SNOMED International).”

SCIENCE, VOL. 262, 19 NOV 1993



AXES**Number of terms**

T	Topography	13.000
M	Morphology	6.000
F	Functions	19.000
L	Living Organisms	25.000
C	Chemicals, Drugs and Biological Products	15.000
A	Physical Agents, Forces and Activities	1.600
J	Occupations	1.900
S	Social Context	1.100
D	Diseases/Diagnoses	42.000
P	Procedures	31.000
G	General Linkage/Modifiers	1.800

Nomenclature

Classification

Topography

Myocardium
T-32020

+

Morphology

Inflammation
M-40000

+

Living Organism

Borrelia Burgdorferi
L-12921

+

Living Organism

Ixodes scapularis
L-66007

=

Disease

Lyme carditis
DE-13743



ICD-10 = A69.2

Lyme disease

ICD-9 = 104.8

Other infections due to
spirochetes

SNOMED INTERNATIONAL - PREFACE

« SNOMED International presents a multidimensional structure that contains the majority of concepts, both simple and complex, needed to index all of human and veterinary medicine. »

Marion Ball

SNOMED INTERNATIONAL - PREFACE

SNOMED International offers a predefined structured vocabulary, only a few years ago considered an unobtainable goal. A comprehensive nomenclature, it can serve as the clinical nucleus for a Composite Clinical Data Dictionary (C²D²) and provide the infrastructure for computerizing the patient record.

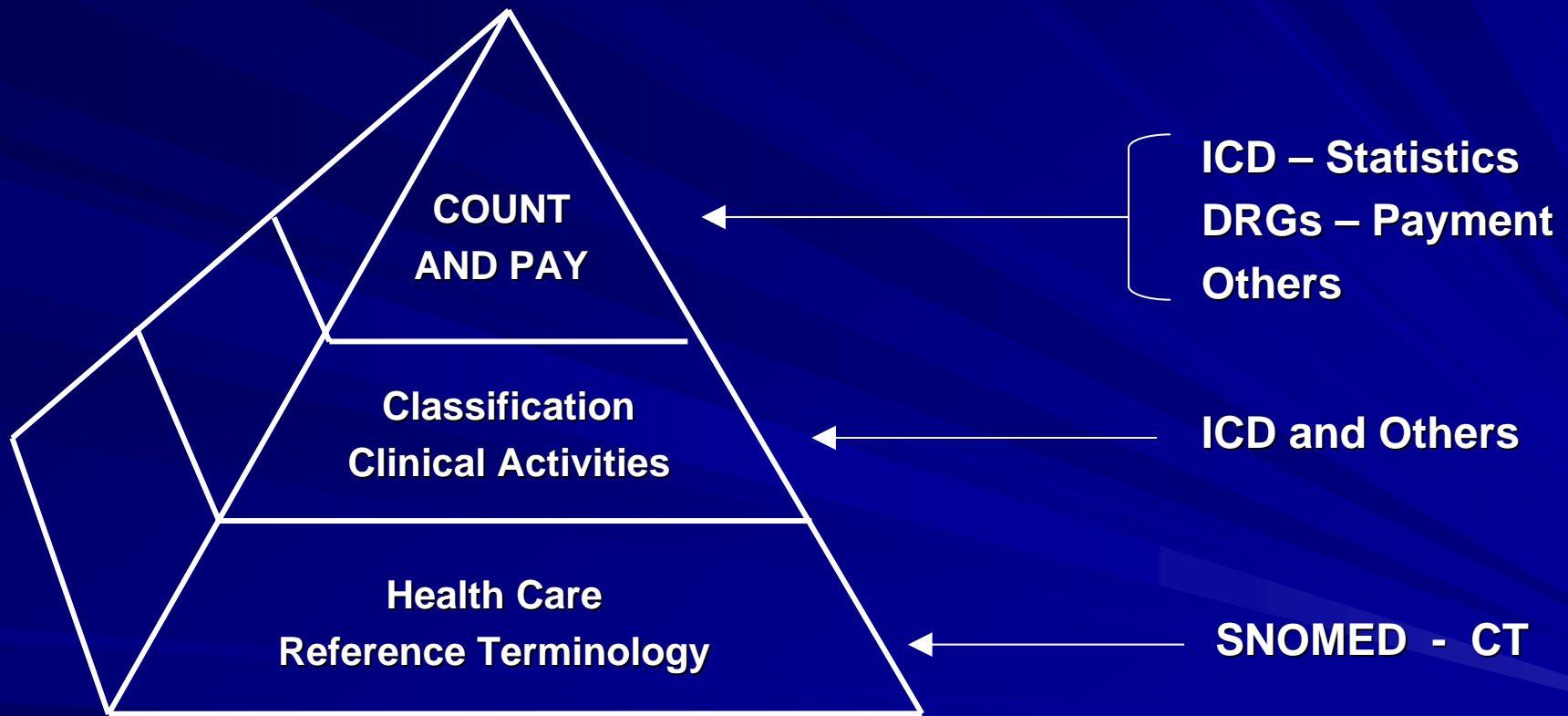
Marion Ball

SNOMED INTERNATIONAL - PREFACE

« A major international effort **SNOMED** is currently being translated into multiple languages to allow, for example, a coded patient summary in English to be transferred to Japan and decoded in Japanese. »

Marion Ball

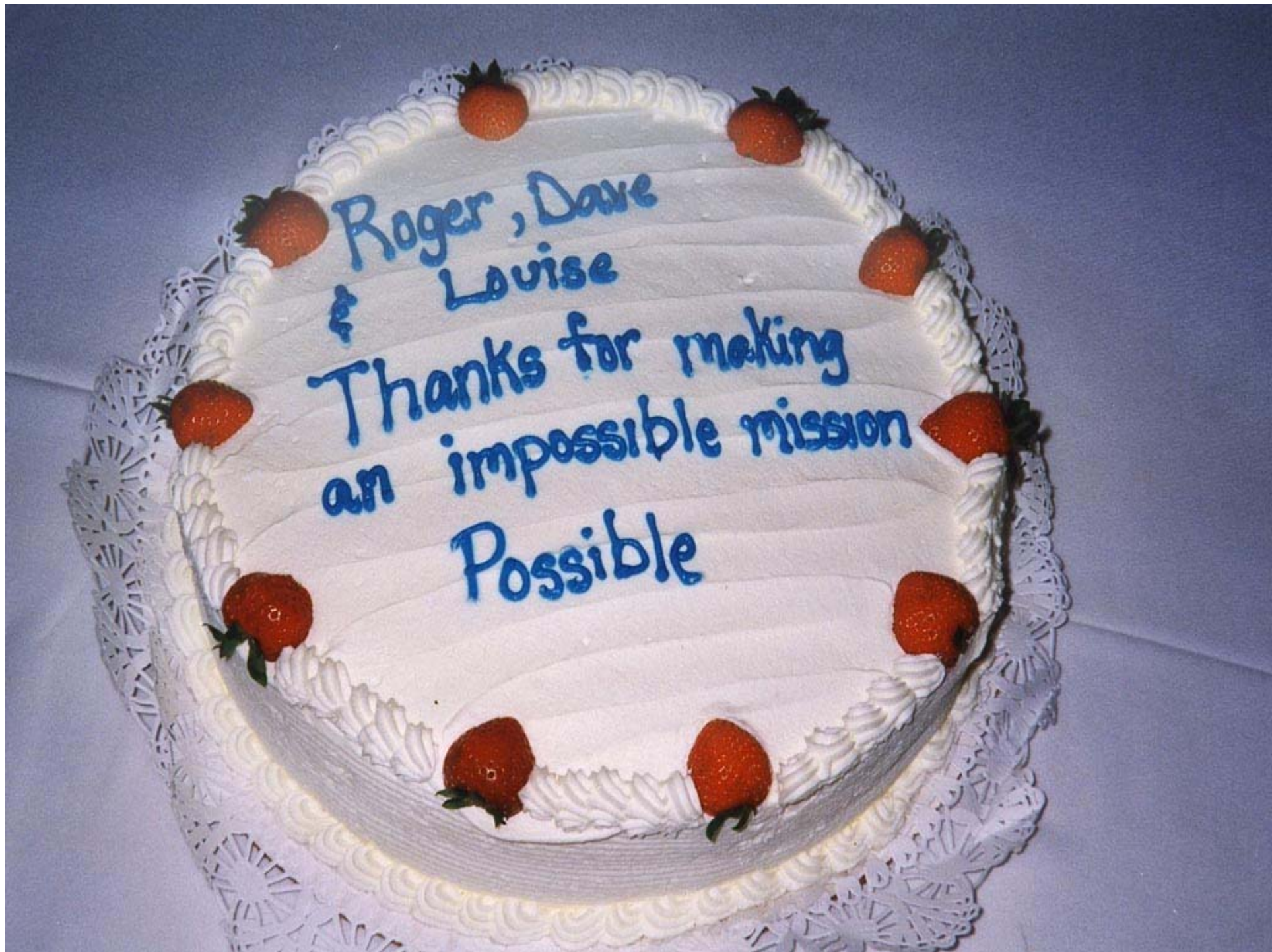
Clinical Documentation Hierarchy









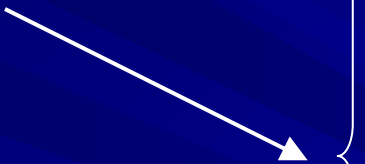


Roger, Dave
& Louise
Thanks for making
an impossible mission
Possible

Yearbook of Medical Informatics – 1999

Selected Impact Papers

- 1) Electronic Patient Records
- 2) Clinical Support Systems
- 3) Decision Support Systems
- 4) Ethical and Philosophical Aspects



Larry Weed (1968)
Morrie Collen (1970)
Roger A. Côté (1977)
Octo Barnett (1979)
Peter Reichertz (1979)

Commentary on article in Yearbook - 1999

« The article on SNOP-SNOMED by R.A. Côté is a milestone on the road toward the electronic health record, because it moves away from traditional monoaxial classification systems, such as the International Classification of Disease, to the field of structuring of concepts. »

Francis Roger-France (Belgium)



Betsy Humphreys, Donald Lindberg, Paul Raslavicus, Kent Spackman



SNOMED

International Participants

The Danish Experience – (Denmark) Dr. Flemming Lass

Portuguese SNOMED – (Brazil) Dr. Peter Rosemberg

Chinese SNOMED – (China) Dr. Li Ensheng

Turkish SNOMED and Microglossary – (Turkey) Dr. Bulent Celasun

Swedish SNOMED used by Pathologists – (Sweden) Dr. Hans Peterson

Russian SNOMED Field Trial – (Russia) Mr. Ivan Emelin

Japanese SNOMED – (Japan) Dr. Yoichi Satomura

SNOMED

International Participants

Spanish SNOMED – (Argentina) Dr. Guillermo Reynoso

Italian SNOMED – (Bologna) Dr. Arrigo Bondi and Dr. Angelo Rossi-Mori

Hungarian SNOMED Efforts – (Hungary) Dr. György Surján

Czech Republic – SNOMED Interests – (Czech Republic) Dr. Pavel Kasal

German SNOMED – (Germany) Professor Friedrich Wingert

French SNOMED – (Sherbrooke, Quebec, Canada) Dr. Roger A. Côté