



SURPLUS
DUPLICATE

PROCEEDINGS from the inter-
national meetings on

Automated Data Processing
in Hospitals

in Elsinore, Denmark, april -
maj 1966

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PROGRAM .I

AUTOMATED DATA PROCESSING IN HOSPITALS

An International Conference on the Interface Problems

April 20th-23rd 1966

Hotel Marienlyst and Hotel Prins Hamlet, Elsinore, Denmark.

The Theme of the Conference:

the interface problems in hospital data processing - a study of the special needs of the patient, the doctor and the hospital administrator defining the role of the computer in clinical medicine.

The Presidium:

President	Prof., Dr. Med. A. Tybjaerg Hansen, University of Copenhagen, Denmark
Vice-president	Prof., Dr. Homer Warner, University of Utah, Salt Lake City, USA
Vice-president	Dr. A. Rémond, Université de Paris, La Salpêtrière, Paris, France
General Secretary	Mr. Erling Dessau, Cand. Polit., department head, "Datacentralen", Denmark
Exhibition Secretary	Mr. Ernst Borg, Msr. "Birch & Krogboe", Copenhagen, Denmark
Assistant Secretary	Dr. Jørgen Hilden, research fellow, University of Copenhagen, Denmark

Organization Committee:

Dr. A. Tybjaerg Hansen	Professor of Internal Medicine, Rigshospitalet, Copenhagen Ø, Denmark
Mr. E. Dessau	Head of Mathematical and Statistical Department, Datacentralen, Copenhagen S. Denmark
Dr. J. Mosbech	Medical Consultant, Statistical Section, National Health Service of Denmark, Copenhagen
Dr. P. E. Andersen	Senior Physician, Odense County and City Hospi- tal, Odense, Denmark
Dr. V. Oram	Head of Surgical Department, Århus Municipality Hospital, Denmark
Mr. Åke Pernelid	Director-in-Chief, National Swedish Rationaliza- tion Agency, Stockholm, Sweden
Mr. Gillis Claus	Director, SJURA, Stockholm, Sweden
Dr. P. Hall	Senior Physician, Karolinska Sjukhuset, Stockholm, Sweden
Dr. T. Hauen	Senior Physician, National Board of Health, Oslo, Norway
Dr. J. F. Davis	Director, International Institute for Medical Electronics and Biological Engineering, Paris, France

Wednesday 20th April

Opening of the conference
The president, Prof. A. Tybjaerg Hansen.
Opening address by the Danish minister of educa-
tion: Mr. K. B. Andersen.

The role of computers in the hospital - the interface problems in medical
and administrative patient management.

Chairman: E. Dessau

A. Tybjaerg Hansen
Professor, Rigshospitalet, Univ. of Copenhagen

Aksel Marchmann

Vice-director, Copenhagen County Hospital
Administration.

On the Requirements for Information Systems in
Hospitals

Charles D. Flagle

Professor, Johns Hopkins Univ., Baltimore, USA.

Time-Sharing a Computer for Processing Patient
Data direct from Transducers at the Bedside

Homer Warner

M.D., Ph. D., Univ. of Utah, Salt Lake City.

The Role of Computers in the Hospital

Lee B. Lusted

Professor of radiology, Univ. of Oregon, Portland

The Computer in the National Health Service

Henry Yellowlees

M.D., Ministry of Health, London

Thursday 21st April

Analog-Digital Data Processing; Hybrid Systems.

Chairman: Professor H. Warner

Antoine Rémond

M. D., La Salpêtrière, Paris

A Digital Computer for the Management and Study
of the Critically Ill

Max H. Weil

M.D., Ph. D., Univ. of Southern California,
Los Angeles

Hybrid Approaches to a Hybrid World

Josiah Macy jr.

Professor, Yeshiva University, New York.

Analyses of ECG and EEG.

Spectral Analysis Techniques and Pattern
Recognition Methods for Electroencephalographic
Data

W. Ross Adey
 Professor, Univ. of California, Los Angeles
 Computer Analysis of Medical Signals in Hospital
 Practice
 C. A. Caceres
 M.D., Public Health Service, Washington, D.C.
 Computer Classifications of Electrocardiograms
 Hubert Pipberger
 Professor, V. A. Hospital and Georgetown Univ.,
 Washington, D.C.

Friday 22nd April

Chairman: Dr. A. Rémond

A Computer System for Automatic Processing of
 Hospital Laboratory Services
 William Kirkham
 M.D., National Institute of Health, Bethesda
 Data Processing in the Clinical Laboratory
 Gunnar Jungner
 M.D., Univ. of Gothenburg
 Computer Assisted Radiation Treatment Planning
 J. van de Geijn
 M.D., H. Joannes de Deo Hospital, The Hague
 Some Potentialities of the Computer in the
 National Health Service
 E.D. Acheson
 M.D., Univ. of Oxford
 Computer Diagnosis of Congenital Heart Disease
 and Brain Tumors
 Kosei Takahshi
 M.D., Univ. of Tokio
 Man-Machine Communications in a Hospital
 G. Octo Barnett
 M. D., Massachusetts General Hospital, Boston
 The Information Problem in Medicine
 G. Wagner

Professor, M.D., Deutsches Krebsforschungszentrum
Heidelberg

Saturday 23rd April

Chairman: Professor A. Tybjaerg Hansen

Computer Aid for Hospital Planning

James Sounder

M.D., Bolt Beranek and Newman Inc., Van Nuys

Input and Output Hardware

J. F. Davis

M.D., International Institute for Medical Elec-
tronics and Biological Engineering, Paris

The Feasibility of Automated Data Processing in
Hospitals

Erling Dessau

Cand. Polit. Mathematical and Statistical Dept.
Datacentralen, Copenhagen

The Computer in our Modern Hospitals

Paul Hall

M.D., Karolinska Sjukhuset, Stookholm

Closing of the conference.

PROGRAM IIINTERNATIONAL ADVANCED SYMPOSIUM ON DATA PROCESSING IN MEDICINE

April 25th - May 3rd 1966

Hotel Prins Hamlet, Elsinore, Denmark.

Themes:

Computer Assisted of Bio-medical Information

Cybernetics in Medicine

Computers and Patient Management - The Use of Operations Research Methods

Analog Information

Man-Machine Communication in the Hospital

Education through Computers

Instruction in ADP for Hospital Personnel.

Organized by: Professor, Dr. Med. A. Tybjaerg Hansen
 Rigshospitalet, University Hospital of Copenhagen
 Cand. Polit. Erling Dessau
 Head of Mathematical and Statistical Department
 Datacentralen, Copenhagen

Subsidized by: NATO Science Committee, Paris.

Monday 25th April

Chairman: Dr. Antoine Rémond, La Salpêtrière, Paris

Information Processing in Medicine

a. What are we aiming at by the Information Processing

Procedures: A Statement

Cand. Polit. Erling Dessau
 Datacentralen, Copenhagen

b. Processing and Evaluation of Hospital Laboratory Data

Professor Donald A.B. Lindberg
University of Missouri, Columbia, Mo.

c. The Digital Computer as a Tool for Analysis of Physiological Systems

Professor Homer R. Warner
University of Utah, Salt Lake City, Utah

d. A Clinician's Wishes and Expectations of the Automated Information Processing

Professor A. Tybjaerg Hansen
University of Copenhagen, Denmark

Tuesday 26th April

Chairman: Professor C. Caceres, Public Health Service, Washington, D.C.

1. Hybrid Systems - Pattern Recognition

a. Professor Josiah Macy, Jr.
Yeshiva University New York

b. Professor D.H. Bekkering
Medisch-Fysisch Instituut, Utrecht, Holland

2. Intensive Observations and Care Units

a. Dr. Erik Sandøe
University Hospital of Copenhagen

b. Professor Max Harry Weil
University of Southern California, Los Angeles

Discussions:

Dr. Mogens Jørgensen, Copenhagen County Hospital
Professor Wesley Clark, Washington University,
St. Louis, Missouri

Wednesday 27th April

Chairman: Professor A. Tybjaerg Hansen, University of Copenhagen

Analog Data Acquisition and Processing

1. Automated Analysis of ECG and EEG

- a. Professor Hubert V. Pipberger
Georgetown University Hospital, Washington, D.C.
 - b. Docent O. Arvedson
University of Umeå, Sweden
 - c. Docent Ingemar Petersén
Sahlgrenska Sjukhuset, Gothenburg

Engineer E. Kaiser
Kaiser's Laboratory, Copenhagen
 - d. Dr. Chr. Guld
University of Copenhagen Neurophysiological Institute
2. Pattern Recognition
- Professor Lawrence Stark
University of Chicago, Illinois
3. e. Demonstration of On-line time sharing;
Storage retrieval and updating of large Data bases (Santa Monica - Elsinore)
by Dr. Anne Summerfield, SDC

Tuesday 28th April

Chairman: Dr. Ilkka Väinänen, Helsinki, Finland

- 1. The Patient Record
 - a. Dr. Paul Hall
Karolinska Sjukhuset, Stockholm
 - b. Dr. Julius Korein and Dr. Leo Tick
New York University Medical Center,
New York
 - c. Dr. A. E. Bennett
St. Thomas's Hospital, London
 - d. Dr. Johs. Mosbech
National Health Service, Copenhagen
 - e. Engineer Werner Schneider
Uppsala Data Center, Uppsala, Sweden

f. Dr. P. Dragsted
Hjørring Centralsygehus, Denmark

2. Cybernetics in Medicine

a. Professor Aldo Masturzo
International Society of Cybernetic Medicine, Naples

b. Dr. Joseph Wartak
Computation Centre of Polish Academy of Sciences, Warsaw

c. Dr. Kosei Takahashi
University of Tokyo, Japan

3. Computers in Medical Teaching

Professor J.C. Pages and
Professor Grening
University of Paris, France

Friday 29th April

Chairman: Professor Arne Jensen, Technical University of Denmark

1. Operations Research - A Survey of Methods and Procedures

Docent Tore Dalenius
University of Stockholm

2. Operations Research in Medical Work

Docent Tore Dalenius
University of Stockholm

3. The OR-unit in a Hospital

Professor Charles D. Flagle
Johns Hopkins University, Baltimore, MD.

4. Operational Research and the National Health Service

Mr. J. B. Cornish
Ministry of Health, London

5. Cybernetics in Medicine

Professor Lee B. Lusted
 University of Oregon Medical School,
 Portland, Oreg.

Saturday 30th April

Chairman: Cand. Polit. Erling Dessau, Datacentralen, Copenhagen

1. Models in Medicine

Dr. Julian Bigelow
 Institute of Advanced Study
 Princeton, New Jersey

2. How to manage Health Care! - A Panel Discussion on Systems Work, Operations Research, and Cybernetics in Health Care Procedures

The Panel: Chairman: Prof. Arne Jensen, Copenhagen
 Professor Charles D. Flagle, Baltimore
 Mr. J.B. Cornish, London
 Professor Florian Serbanescu, Pisa
 Docent Tore Dalenius, Stockholm
 Vice-Director Aksel Marchmann, Copenhagen
 Head Physician Paul Hall, Stockholm
 Dr. Poul Marke, Copenhagen
 Head Physician Gunnar Jungner, Gotenburg

Monday 2nd May

Chairman: Vice-Director Aksel Marchmann, Copenhagen, Hospital Board

1. Planning for an Extensive Automated Medical Information System

- a. Mr. Armando Lassus
 Puerto Rico Medical Center, San Juan
- b. Mr. Jordan J. Baruch
 Bolt Beranek and Newman Inc., Cambridge, Mass.

- c. Mr. Stephen J. Siegel
State University of New York
- d. Mr. P.J. Budd
Veterans Administration, Dept, of Data
Management, Washington, D.C.
- e. Mr. R. Edwin Hawkins
El Camino Hospital, Mountain View,
California

2. Discussions

Chairman: Erling Dessau

3. Learning by Computers

Professor J.C. Pages
IBM France, Paris

Tuesday 3rd May

Chairman: Professor Rud. Keiding, Århus County Hospital

1. Automated Data Processing in the Clinical Laboratory

- a. Dr. W. Kirkham
National Institutes of Health, Bethesda,
Md.
- b. Dr. J. Guigan
The Guigan Laboratories, Paris
- c. Dr. Gunnar Jungner
University of Gothenburg

2. Bio-medical Telemetry

Professor C. Caceres
Public Health Service, Washington, D.C.

Chairman: Dr. Paul Hall, Karolinska Sjukhuset, Stockholm

1. Systems Work and Data Bases

- a. Vice-Director Aksel Marchmann
Copenhagen County Hospital Board

- b. Dr. Anne Summerfield
System Development Corporation, Santa
Monica, California

2. Summary

- a. Cand. Polit. Erling Dessau
Datacentralen, Copenhagen
- b. Professor A. Tybjaerg Hansen
University Hospital, Copenhagen

3. Closing of the Symposium.