

# Introduction



# Course structure

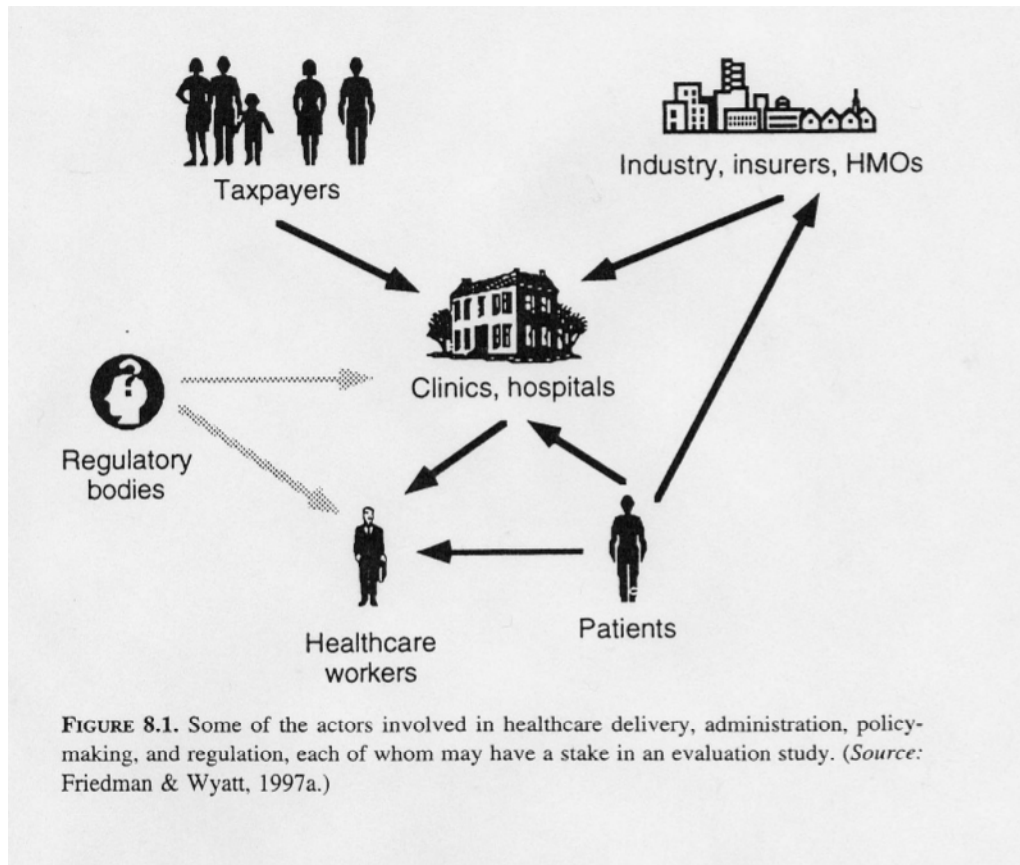
- Lectures
- Display wall
- Visualization projects
- Mid-term
- Final project
- Office hours
- Communication



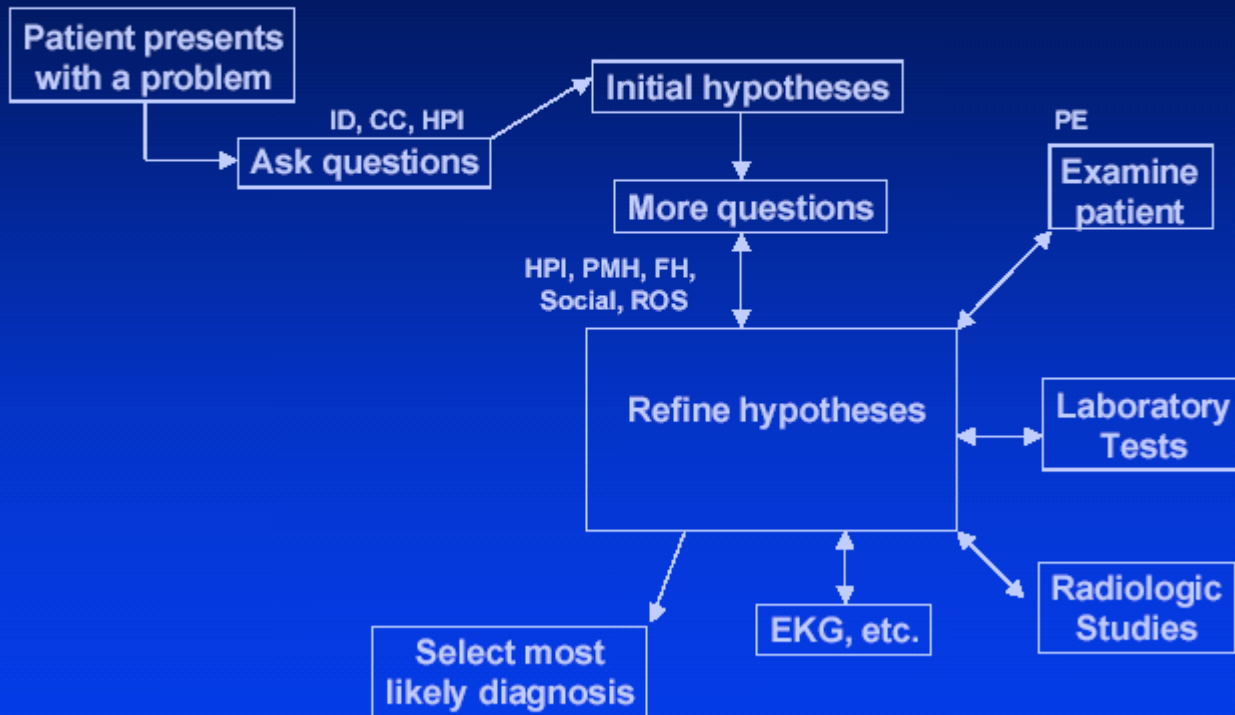
# Why this course?

- Your goals
- My goals
- Opportunities

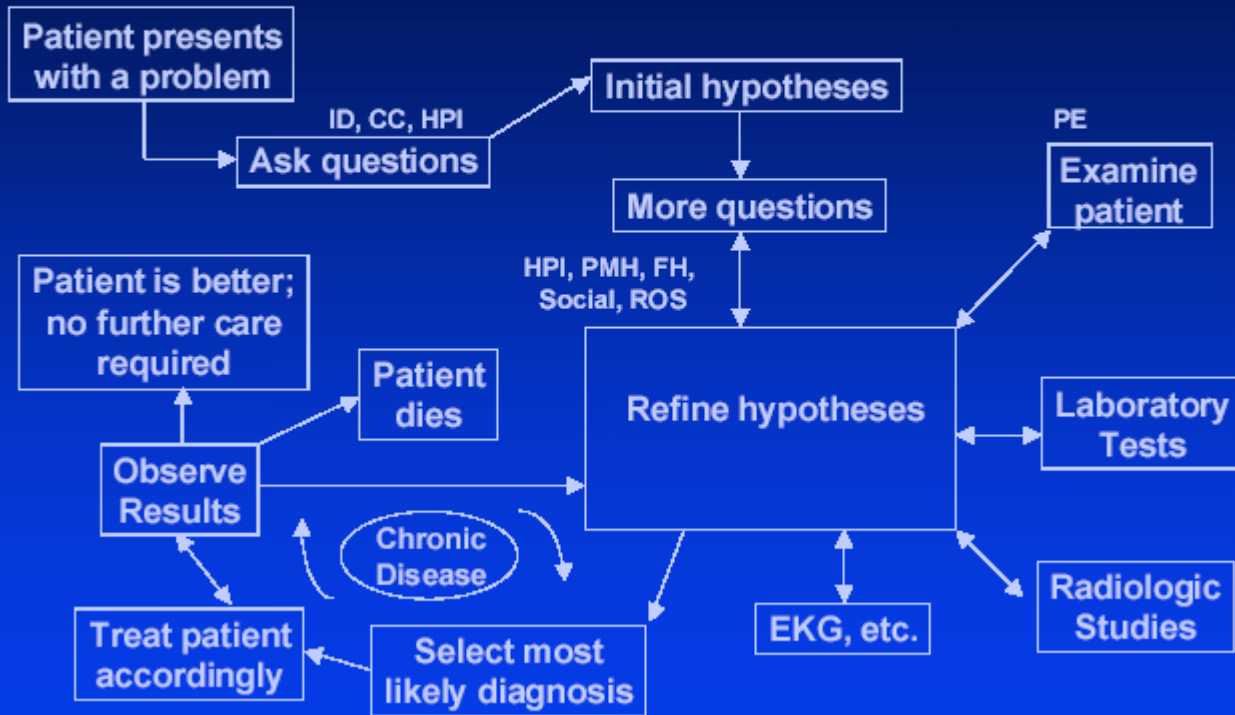




# The Process of Patient Care



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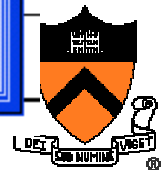
# Functions of computers in medicine

- Data acquisition and presentation
- Record keeping and access
- Communication and integration of information
- Surveillance
- Information storage and retrieval
- Data analysis
- Decision support
- Education



## Physicians' Acceptance of Medical Computing Applications

	<u>% Acceptance</u>
Computer-Based Patient Records	83
Hospital Information Systems	97
Patient Monitoring Systems	80
Diagnostic Consultation Systems	81
Therapy Consultation Systems	83
Computer-performed Physical Exams	36
Substituting for Physicians in Underserved Areas	32
Examination of Physicians for Relicensure	52



# Types of doctors

- Primary care provider
  - Internist, family practitioner, pediatrician
- Specialist
  - Medical
  - Surgical
- Hospital based provider
  - Anesthesiologist
  - Pathologist
  - Radiologist



# Types of health interaction

- Healthy visit
- Chronic visit
- Diagnostic visit
- Acute care



# Locations of health care and documentation

- Office
- Hospital
- Home
- Chronic care
- Other hospitals
- Abroad
- Etc.



# Types of information

- Textual
- Trend
- Lab data
- 2/3D images
- Administrative
- Billing



STANFORD 8498

History of Present Illness

June 3, 1979 ON CHIEF

Admission Note

10: lat admission for thin 24 yr Mexican American F  
w/ chronic h/o

20: Anamnesis for eye

HPI: On 5/25 pt noted the onset of myalgias, severe  
headache, nausea, neck pain, and ataxic gait.

She consulted her primary MD for these problems, and he  
diagnosed trigeminal neuralgia and prescribed a combination of

Chlorzoxazone, acetaminophen, prednisolone, and cefprozil.  
However, she is without

relief. She denies perceptual distortions, & other visual  
symptoms. She has noted a reproductive cough but

is a nonsmoker and she denies alcohol use.

She denies exposure to disease individuals, specifically  
including histoplasmosis or TB.

PMH: To be of relevance other than MVD's. MVD's only  
as above. Otolaryngology Surgery to her daughter,  
age 12, by MVD.

Social: Farmer's wife. Works in home. Has never lived  
in San Joaquin Valley. Last travelled to Texas  
by car in 1974.

PE: Gait: well until 10 days PTA  
Spec: -  
Head: R 2 pr HPT.





TESTES - NI size and consistency; no masses  
Rectal - 0 masses; (R)  
prostate nodule L  
~1.5cm →

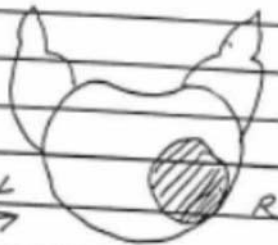


FIGURE 2.2. A physician's hand-drawn sketch of a prostate nodule. A drawing may convey precise information more easily and compactly than a textual description.



PAST EYE HISTORY:

X

GEN. MEDICAL HISTORY (F.H.)

Edema & hypertension

ALLERGIES:

Sniff

OCULAR EXAMINATION:

NW -2.00 DS + 3.25 cyl

VISUAL ACUITY:

-1.50 DS + 3.75 cyl

REFRACTION:

Present (glasses)

SE 20/40  
40-2

EC 2

@10'

Manifest

RHA -2.75 DS => 20/40 +1  
-3.00 DS => 20/40 +1

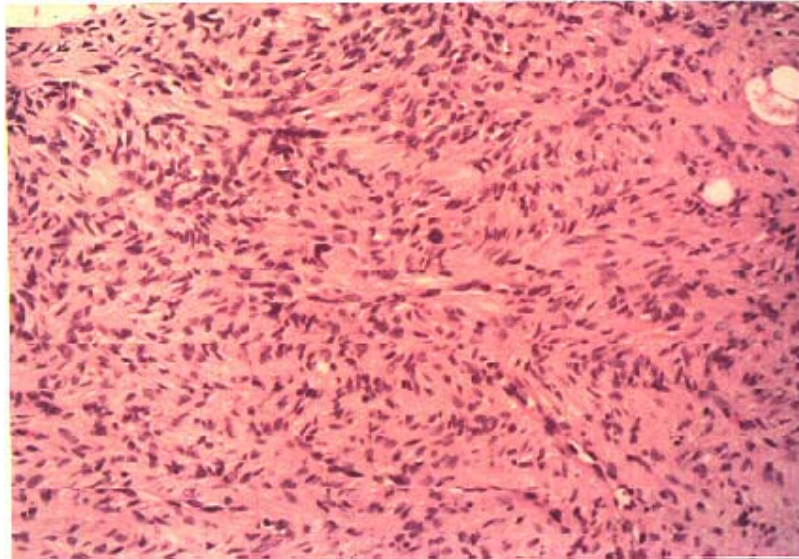
Cycloplegic

FIGURE 2.3. An ophthalmologist's report of an eye examination. Most physicians trained in other specialties would have difficulty deciphering the symbols that the ophthalmologist has used.









- 2 and 3-d data sets
  - [Echocardiography](#)



# Data storage

- Current approaches
- Computerized approaches
- Visualization of data

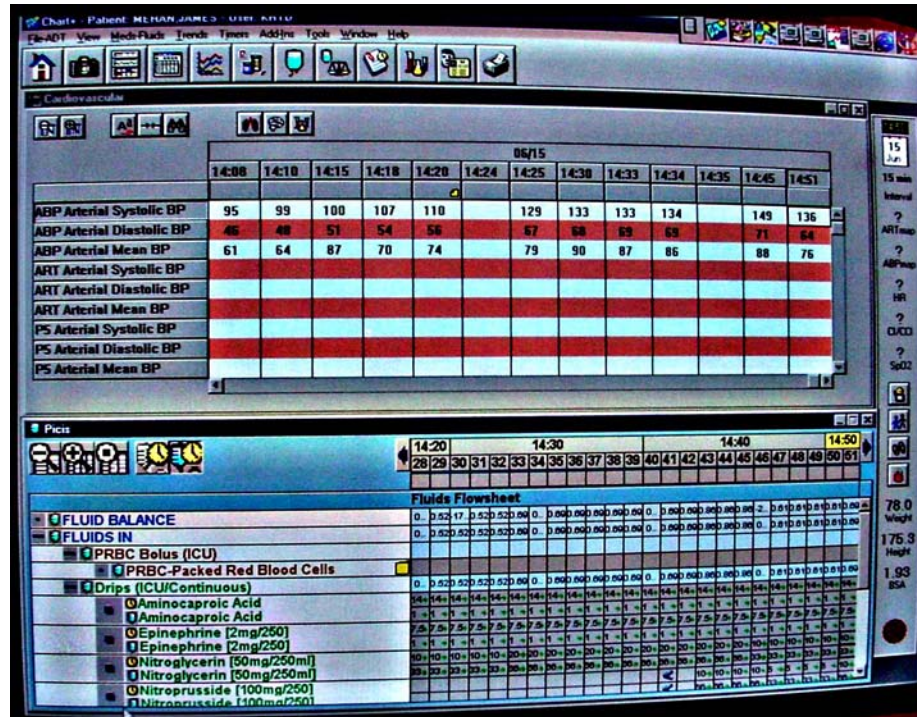


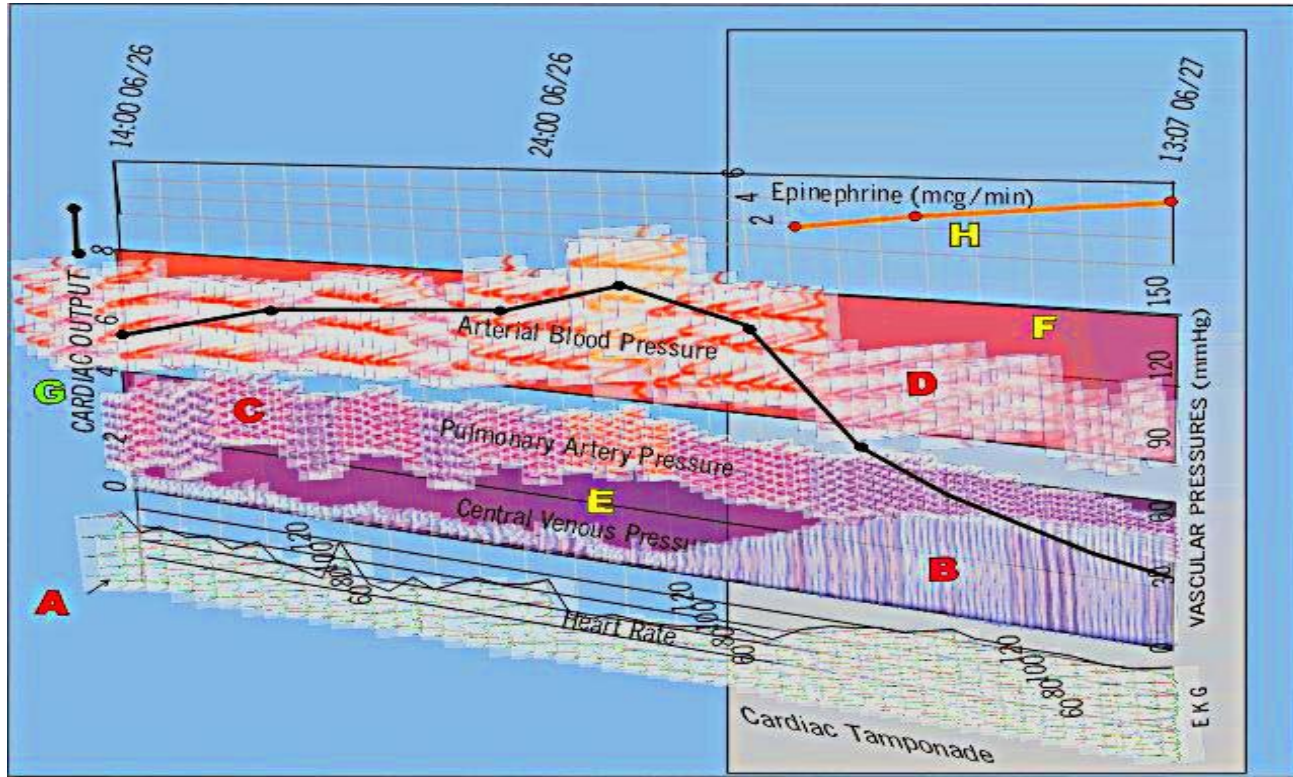


CRITICAL CARE FLOW SHEET/ARREST RECORD

DATE: 6/24/00		SHEET NO:		PATIENT NAME: [illegible]		ROOM: [illegible]		NURSE: [illegible]		PHYSICIAN: [illegible]		DATE: 6/24/00		TIME: [illegible]	
WEIGHT PRE-OP: 63 kg		TODAY:		YESTERDAY:		RA - R ATRIAL PRESSURE		SD - SYSTOLIC DIASTOLIC		SVO <sub>2</sub> - MIXED VENOUS		DI - DORSAL PEEDS		BP	
BODY SURFACE AREA: 1.76		RESPIRATORY RATE		TEMP		PULMONARY ARTERY		MEAN		SVO <sub>2</sub>		HR		BP	
TIME	MEAN	BP	HR	TEMP	RA	SD	MEAN	MEAN	MEAN	SVO <sub>2</sub>	HR	BP	HR	BP	TIME
14:00	82	102/50	80	93	17	20/12	21			67					
14:10	81	102/50	80	93	13	20/12	21	2.9	1.6	65					
14:20	71	102/50	80	93	14	20/12	21	2.9	1.6	65					
14:30	83	102/50	80	93	15	20/12	21	2.9	1.6	65					
14:40	74	102/50	80	93	16	20/12	21	2.9	1.6	65					
14:50	84	102/50	80	93	12	20/12	21	2.9	1.6	65					
15:00	84	102/50	80	93	15	20/12	21	2.9	1.6	65					
15:10	71	102/50	80	93	15	20/12	21	2.9	1.6	65					
15:20	71	102/50	80	93	15	20/12	21	2.9	1.6	65					
15:30	71	102/50	80	93	15	20/12	21	2.9	1.6	65					
15:40	71	102/50	80	93	15	20/12	21	2.9	1.6	65					
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16:00	71	102/50	80	93	15	20/12	21	2.9	1.6	65					
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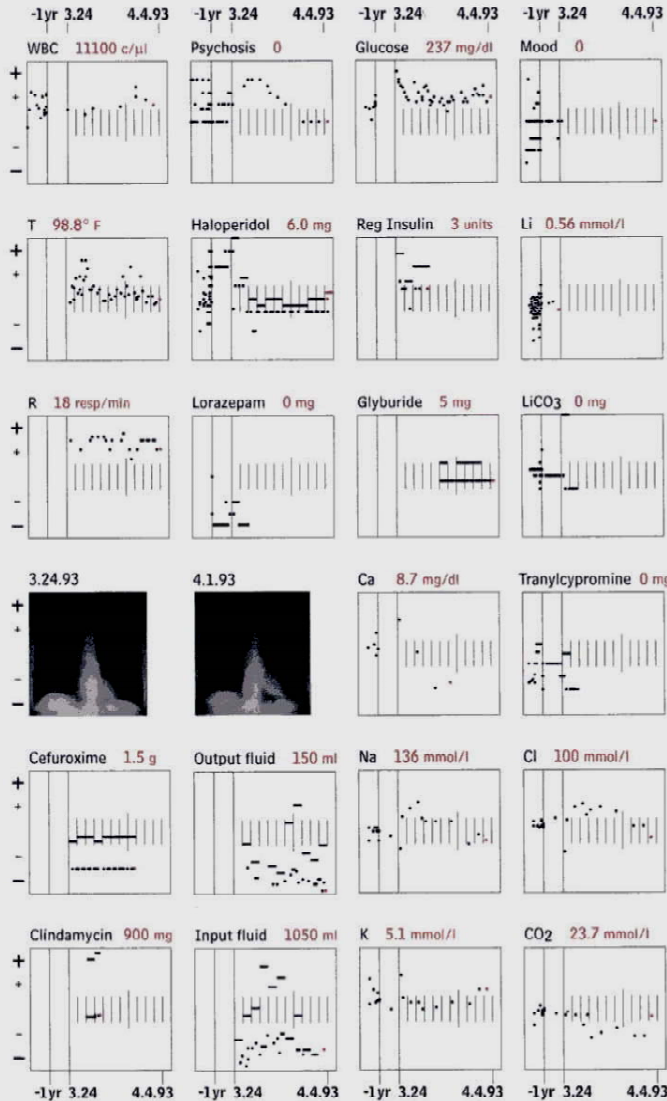


Surname, Forename M. admitted 3.24.93

4.4.93

7-South, Bed 5

Right lower lobe pneumonia, hallucinations, new onset diabetes,  
history of manic depressive illness



Discharge. PB MD 1200 4.4.93

No delirium. JT MD 900 4.4.93

Enema given. PAC RN 1100 4.3.93

Will treat for probable constipation.  
MBM 2245 4.2.93

Vomited three times. RW RN 2230 4.2.93

Left lower lobe infiltrate or atelectasis.  
AL MD 1500 4.2.93

Alert and oriented. No complaints.  
PAC RN 1100 4.1.93

Attending to activities of daily living.  
PAC RN 1100 3.31.93

Ambulates with assistance. Weak.  
PAC RN 1400 3.30.93

Still coughing. Breath sounds  
diminished at right base.  
PB MD 1000 3.30.93

Discontinued sitters. MM RN 1500 3.29.93

Follows directions. DB RN 1500 3.28.93

More relaxed. CM RN 700 3.28.93

Drowsy and sleeping. MT RN 2130 3.27.93

Out of restraints. JMT MD 1330 3.27.93

Left conjunctivitis; treat with garamycin  
drops. DJS MD 1230 3.27.93

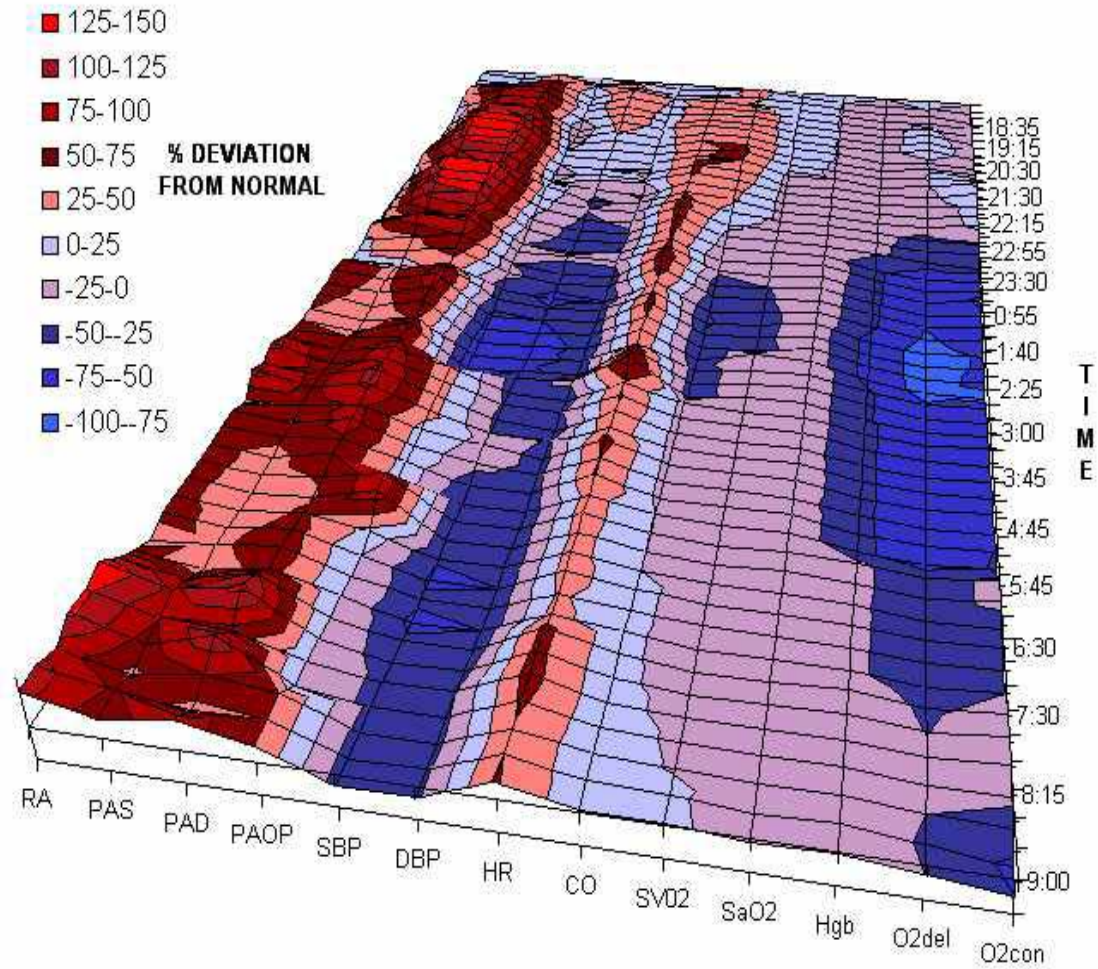
4-point restraints and sitter needed.  
PM RN 1500 3.26.93

4-point restraints required. Delirious.  
Switching to half normal saline for  
hydration. Parathyroid hormone test  
results pending. LMG MD 930 3.26.93

Pulled out IV twice. Hallucinating.  
Attempted to drink call light.  
CM RN 700 3.26.93

Next screen





# NUMERO ASSOLUTO dei NATI VIVI

MASCHI

loro superstiti classificati per età  
secondo i risultati dei Censimenti

**SVIZZIA**  
1750-1875

— Linee di età      — Linee dei censiti  
— " isodemiche    — " " superstiti

SCALE

25<sup>mm</sup> per 100 anni di età e per 100 d'osservazione  
75<sup>mm</sup> per 50 000 individui

Le ordinate verticali rappresentano il numero dei maschi, le ascisse orizzontali indicano i tempi di osservazione e gli anni di età.

**SISTEMA D'ASSI**

