

The Clinical Web:
1996-2001

John Faughnan M.D.
October 1996

Components

- Part I: Prognosticating
- Part II: Web Technologies
- Part III: Privacy
- Part IV: Changing Clinical Work

Web Clinical Information Management

Oct. 1996

Part I: Prognosticating

- method
- World, US, US Medicine

Web Clinical Information Management

Oct. 1996

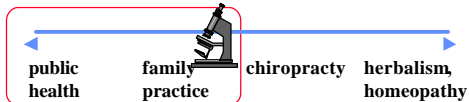
Prognostication Principles

- economics rules
- technologies
- clinical setting
- conservative: no war, comets, AI

Web Clinical Information Management

Oct. 1996

What Kind of Clinical?



- "western" & "alternative"
- MD/DO, NP, PA, RN, patient, well
- health as infotainment & hobby

Web Clinical Information Management

Oct. 1996

Economics and the New World

- world-wide economic growth
- continued concentration of wealth
- decline of many professions
- digital cash and trans-national commerce

Web Clinical Information Management

Oct. 1996

America in the Early 2000s

- prosperous
- older, grayer, sicker
- guerrilla marketing
- changing security issues

Web Clinical Information Management

Oct. 1996

Medical America

- 2+ tier system
- services: science vs. consumer demand
- “risk holders”
 - bear the cost of lifestyles
 - motivation to influence lifestyles

Web Clinical Information Management

Oct. 1996

Time Covers: 1999

- The New Servants
- Death of the Professions
- Marx is Back!

Web Clinical Information Management

Oct. 1996

Part II: Web Technologies to Watch For

- key technologies by net epoch

Web Clinical Information Management

Oct. 1996

Venture Capital Rule of 10

- invest in consumer product when ...
- 10x better than what it replaces

Web Clinical Information Management

Oct. 1996

Key Technologies: Now

- public Internet: TCP/IP, routers
- web browser: standard multimedia terminal
- user interface: hypertext and forms (CGI)
- indexing engines (AltaVista, etc.)

Web Clinical Information Management

Oct. 1996

Key Technologies: 1997-1998

- “push” distribution
- mobile applets (Java, CORBA)
- micropayments
- directory services

Web Clinical Information Management

Oct. 1996

Key Technologies: 1999-beyond

- agents
- bandwidth to the home
- robust networks
- decent display?

Web Clinical Information Management

Oct. 1996

Push Distribution

- web browsing: active, pull in content
- channels: passive, like television
- ~ auto-updating web page
- Pointcast, MSN “channels”
- marketing: competing for eyespace

Web Clinical Information Management

Oct. 1996

Mobile Applets

- applet: server <--> client
- building distributed applications
- solves many client-server problems
- Java, IIOP, LDAP, Marimba, etc.

Web Clinical Information Management

Oct. 1996

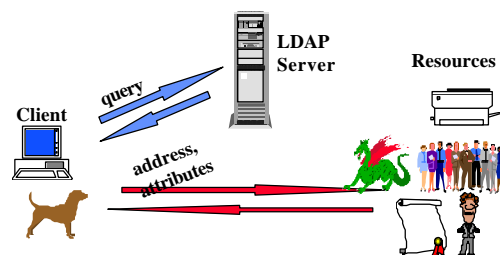
Micropayments

- too big to be easy
- pay per view: pennies to dollars
- resource descriptions
 - quality measures
 - cost
 - content

Web Clinical Information Management

Oct. 1996

Directory Services



Web Clinical Information Management

Oct. 1996

Bandwidth to the Home

- > 2 Mbps to desktop
- longer than we imagine
- follows micropayment system

Questions?



Part III: Privacy Issues

- why a web issue?
- marketing
- security

Why is Privacy a Clinical Web Issue?

- Sutton's Law
- network is data solvent.
- networked data flows towards profit (threat)
- if data can be used, it will be used

Web Clinical Information Management

Oct. 1996

Where the Data Flows

- guerilla marketing
- medical costs and shared lifestyle risk
- threat evaluation and management
 - Sarin, fertilizer bombs, denial of service

Web Clinical Information Management

Oct. 1996

Early Reports

- AIDS Database Dating
- Lexis-Nexis et al
- Disney's EMR
- Medicaid fingerprinting

Web Clinical Information Management

Oct. 1996

Guerilla Marketing I

- " ... in the electronic age of marketing, personal information is the new currency"
 - Business Week October 7, 1996
- data mining a major tool
- medications and habits
- funeral home need

Web Clinical Information Management

Oct. 1996

Guerilla Marketing II

- trading for personal information
 - web site access
 - lifestyle questionnaire payment
 - MCO discounts
- new user and market share
 - free software, free upgrades
 - reverse micropayments?

Web Clinical Information Management

Oct. 1996

Threat Assessment

- insurer: a reckless driver, drug use history, counselling ...
- employer: misdemeanors, juvenile record, memberships, STD history ...
- air carrier: driving record, travel history ...
- government: technical skills, organizations ...

Web Clinical Information Management

Oct. 1996

Headlines to Watch For

- insider data trading and selling
- off-shore data repositories
- employer use of “black lists”
- “personal profile” businesses
- terrorists and profiling

Web Clinical Information Management

Oct. 1996

Questions?



Web Clinical Information Management

Oct. 1996

Part IV: Changing Clinical Work

- web-based work
- connected patient
- clinical applications
- system level solutions

Web Clinical Information Management

Oct. 1996

Web-Based Clinical Work

- limited role next 5 years
 - prison, military, isolation
- personal health counsellors
- digital cash consultations
- home monitoring systems

Web Clinical Information Management

Oct. 1996

The Connected Patient

- prime “push” candidates
- 10%, but influential
 - chronic serious disease
 - health as hobby
- influence
 - marketing, services
 - privacy issues

Web Clinical Information Management

Oct. 1996

The Connected Patient: Issues

- personalized services (push)
- toxic herbal recipe?
- public health impact?

Web Clinical Information Management

Oct. 1996

Clinical Applications: Web + Java Standards

- text: HTML and hyperlinks
- multi-tier client-server apps
- variable weight clients
- resource publication
- security

Web Clinical Information Management

Oct. 1996

Building on Standards

- medical record
- clinical workflow applications
 - communications and collaboration
- medical knowledge & active guidelines
- focal expert systems

Web Clinical Information Management

Oct. 1996

System-Level Solutions

- information: right time, place, content, form
- integrated external information sources (Elson)
- productivity, errors, user satisfaction
- public health impact?

Web Clinical Information Management

Oct. 1996

Web: Revolution or CB-Radio?

- building distributed applications: Big Evolution
- publication and knowledge dissemination: Revolution

Web Clinical Information Management

Oct. 1996

Take-Home Lessons

- network makes data fluid
- privacy: marketing and threat
- tech: push distribution, directory services, micropayments
- build clinical solutions: web + Java + Systems

Web Clinical Information Management

Oct. 1996

Questions?



Web Clinical Information Management

Oct. 1996
