

CONFERENCE: CONNECTING CALIFORNIA TO IMPROVE PATIENT CARE

HEALTH INFORMATION TECHNOLOGY: A CLINICIAN'S VIEWS

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TECHNOLOGY WISDOM

*"I think there is a world market for
maybe five computers."*

**– Thomas Watson,
Chairman of IBM, 1943.**



WHO AM I?

- **Solo Family Practitioner (30+ yrs)**

- **Office EHR Experience**
 - e-MDs for 4 yrs (currently)
 - Epic for 5 yrs at University of Washington Physicians Network
 - Various “computerization” experience while doing Locum Tenens in 1990s

- **Hospital EMR Experience**
 - Proprietary program RK Davies, SF in 1980s
 - CERNER Millennium, rolling out locally for 4 years;
 - Physician Advisory Committee Cerner implementation, Adventist Health West

- **Medical Director of Quality, Ukiah Valley Medical Center**
- **Medical Director, Valley View Skilled Nursing Center**
- **Board Member, Redwood MedNet**
- **Participant, Medicare Care Management Performance Demonstration (MCMP), an experiment in Pay for Performance**
- **Physician Reviewer, CCHIT**
- **Participant, CalOHI Privacy and Security Subcommittee**
- **Medical Society Rep to Mendocino County Public Health Advisory Board**

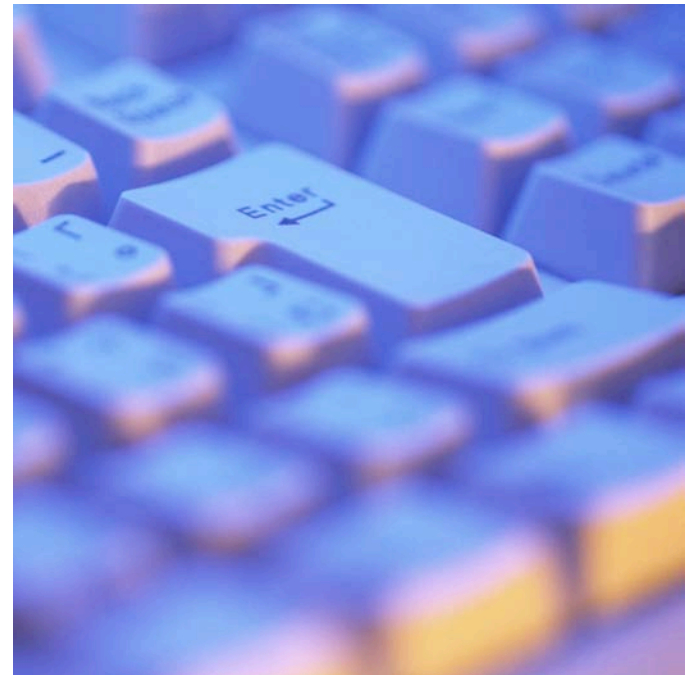


WHY AM I SPEAKING TODAY?

- ☞ **Will Ross is a nice guy**
- ☞ **Will Ross is retaliating for years of hassling**
- ☞ **Make up for missed MedNet Board meetings**
- ☞ **Cheap speaker: no travel or hotel**
- ☞ **I need PowerPoint practice**
- ☞ **OR,**

I believe HIT can be developed and harnessed to help with health care challenges.

- **Quality & Safety of Health Care**
- **Cost & Availability of care**
- **Rationality in Research**
- **Education of Professionals**





MY GOAL:

**Promote constructive
strategies for advancing
Health Information
Technologies
to Healthcare Providers**

A Hands On Perspective

WHO ARE THESE DOCTORS?



Younger

Specialists

Researchers

Poets

Innovators

Older

Clinicians

Techie Docs

Dreamers

Mainstream

Generalists

Teachers

Engineer types

Cowboys

Early adopters



WHY SHOULD DOCTORS CARE?

- **Medicine: *patient contact not engineering***
- **Medicine: *already highly technical***
- **MDs *strive to stay current in Medicine***

- **Why now *must* we take on a whole new interest in IT?**



WHY I.T.?

1. QUALITY OF CARE

This is the big DRAW for innovators.

*"To err is human...
to really foul up requires a root password."*



WHY I.T.?

 Quality of Care

 **EFFICIENCY**

Promises, promises.....

Productivity in EHRs?

RETURN ON INVESTMENT?

Advertisement from e-MDs Website

- Average time saved in documenting a visit 5 min
- Average physician appointments per day 25
- Total minutes saved per day (25 visits x 5 minutes) 125 (2 hrs)
- Total days worked in 12 month period (5 days/wk x 48 wks) 240
- Total hours saved per year (240 days x 2 hours) 480
- Total weeks of work saved per yr (480 hrs/40 hrs/wk) 12 wks

2 hours saved each day using Chart converted into 6 to 7 more patients per day @ \$50 per patient visit.

- Additional patient visits per day 6.5
- Total days worked in 12 month period (5 days/wk x 48 wks) 240
- Additional patient visits per year (6.5 visits x 240 days) 1,560

- Total ROI per doctor per year (1,560 visits x \$50) **\$78,000**

“Alternatively, you can simply go home earlier every day and spend time with your family.”



WHY I.T.?

 Quality of Care

 **EFFICIENCY**

- Productivity

Health Information Exchange?



WHY I.T.?

 Quality of Care

 Efficiency:

- Productivity
- Health Information Exchange

3. MONEY: A MIXED BAG



WHY I.T.?

 Quality of Care

 Efficiency:

- Productivity
- Health Information Exchange

 Money: A Mixed Bag

4. LIABILITY: A MIXED BAG



Transition to I.T. is neither swift nor simple

***"If at first you don't succeed,
call it version 1.0"***

The GOOD, the BAD and the UGLY



GOOD

- **Assists** healthcare professionals in their mission to provide high quality, compassionate services efficiently.
- **Attracts** users to the next level.
- *Might even make you smile!*



Before EMR:
Where is that chart?



The GOOD, the BAD and the UGLY

BAD

- Providers (feel) left out of planning or implementation
- Providers not trained or supported to use Technology
- Provider feedback not facilitated or utilized by IT

It is user-friendly... It's just very selective about who its friends are.



The GOOD, the BAD and the UGLY

UGLY

- **Forces** provider behaviors not proven to advance our mission.
- High risk of unexpected negative consequences - through the use of technology.

*It's not just 'User-Unfriendly',
it's 'Proactively User-Hostile' !*



Good-OL' Classic Texts and Manuals

- Harrisons Manual of Medicine**
- Washington Manual Series**
- Nelsons Pediatrics**
- Emergency and Critical Care**
- 5 Minute Consult series**

Online Resources

- Patient Education sites: AAP, AAFP, many specialty societies**
- Up-to-Date for evidence based medicine**
- ZYNX for evidence based order sets**
- Physician Clinical and Research References CDC, PubMed, NIH**



Handheld Point of Care Functionalities

Point of Care technology must *efficiently* assist in diagnosis and treatment

- ePSS Evidence Based Prevention (AHRQ)
- Shots 2008- Immunizations by age etc
- Preg Trac- for OB patients
- DDx- Differential Diagnosis tools
- PSI- Pneumonia Severity Index calculator
- EKG interpreter, ACLS tools
- PHQ-9 Validated Depression Questionnaire



ANOTHER PREDICTION validated !

***"Computers in the future may weigh
no more than 1.5 tons."***

***– Popular Mechanics,
forecasting the relentless march of science, 1949.***

ePocrates

Prescription Reference for PDA

- Medication Errors among the most common Medical errors.
- Used by over 500,000 healthcare professionals worldwide; one in four U.S. physicians
- Available for many platforms: Palm, Win Mobile, i-Phone, BlackBerry,



ePocrates for PDA

WHY IS IT GOOD?



- Basic=Free**
- Cost reasonable**

- Immediately helpful**
- Rx Indications, Doses**

- Prices & formulations**
- Drug Interaction checker**

- ID Recommendations**
- Symptom Diagnosis**
- Calculators and Guides**

Easy to use
Coupon Program for Companies
Auto updates
**Side effects, Contra-
indications**
Payor Formularies
Safety Monitoring

Lab interpretation
Disease Consultant
Mobile CME with credit

ePocrates for PDA

my Rx Sx Dx Lab ID

amiodarone
generic
(200; IV; INJ)

View Black Box Warnings

**ventricular arrhythmia,
malignant**
[PO route]
Dose: 200-600 mg PO qd; Start:
load 800-1600 mg PO qd x1-3wk
until response; Info: for loading

▼ Adult Dosing

m ← ↻

MultiCheck@ Drug Interactions
Drug-Drug Interaction

Avoid/Use Alternative
amiodarone <-> erythromycin
stearate
Coumadin <-> erythromycin
stearate

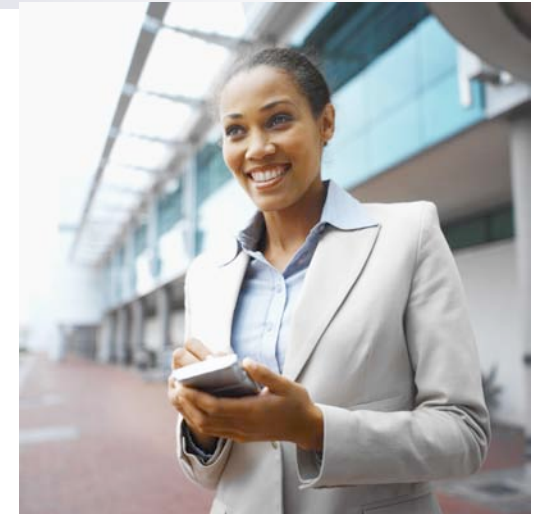
Monitor/Modify Tx
amiodarone <-> atenolol
amiodarone <-> Coumadin

Check IV Back Close

Point of care functionality

IF YOU CAN'T BEAT 'EM, BRIBE 'EM

Is it difficult to get
providers enthusiastic
about the IT program in your
institution?



- ❑ Support them with a hand held device and/or medical reference program.
- ❑ *Give it away, with a PDA. It's a small investment in training and participation.*

Pencil and paper /n./:

an archaic information storage and transmission device that works by depositing smears of graphite on bleached wood pulp. More recent developments in paper-based technology include improved *'write-once'* update devices which use tiny rolling heads similar to mouse balls to deposit colored pigment. All these devices require an operator skilled at so-called *'handwriting'* technique.

— From the [Jargon File](#)



ELECTRONIC MEDICAL RECORDS

ADVANTAGE

- Chart always available
- All phone calls documented
- Health Record Exchanges



DISADVANTAGE

- Data not always accessible
- Messages less noticeable
- HL7, CCR Interface Nightmare +
- Legal/HIPPA issues

EMR-EHR



QUALITY IMPROVEMENTS

- ❑ ePrescribing (less errors)
- ❑ Reminders, Reports
- ❑ Decision Support for diagnosis and treatment
- ❑ Patient Education

IMPLEMENTATION CHALLENGES

- ❑ Unforeseen consequences
- ❑ Crossovers (mixing up patients)
- ❑ Need easy built-in method to report errors while working

EMR - EHR

MONETARY POTENTIAL

- Theoretical increase in productivity
- Savings in personnel (transcription, file clerk)
- Better documentation = Increased payment



REAL COSTS

- Learning curve = Initial (months) decrease in productivity
- Provider becomes transcriber, biller
- Bulky chart notes make important information harder to find

EMR - EHR

POTENTIALS

- Personnel changes
 - More IT
 - Less transcription, file clerk, billing
- Virtual Visits, TeleMedicine
- Group Visits and Registry type data extraction for Chronic Diseases
- ?????



REALITIES

- IT personnel is higher priced than office personnel
- Provider does more program planning etc
- Provider does more “secretarial” work
- Virtual Visits not covered by insurance carriers
- Need for increased training of office personnel

An example: EMR START UP COSTS



MY OFFICE 2004-2008



EMR COSTS

“PAPER” OFFICE COSTS

Set up: hardware, software, &
installation: \$38,000

Annual support and upgrades
(\$13,400 x 4 yrs): \$53,600

4-year total EMR \$91,000

Set up paper records (file
cabinets, charts) \$5,000

Annual transcription, file clerk,
supplies (\$27,900 x 4 yrs):
\$111,600

4-yr total “Paper” \$116,600



EMR START UP COSTS MY OFFICE 2004-2008

- **Savings over 4 years of approximately \$25,600 must be budgeted for hardware upgrades over the next 5 years.**
- **Breakeven**
- **\$ Expenses -- NOT a significant factor**
- **Improvement in system stability and ease of use may save support costs**

***"640K ought to be enough for anybody."
– Bill Gates, 1981.***

PRODUCTIVITY IMPROVES



- **Only with full implementation**
- **Quality training**
- **IT personnel activate program and providers**

FUTURE POSSIBILITIES



- e-Prescribing
- Health Information Exchange
- Improving Templates & Macros
- Virtual Visits

QUALITY IMPROVEMENTS ARE NOT BEING REIMBURSED

- **Drug interactions**
- **Patient Education:** handouts, exit instructions
- **Availability of ancillary data** (HIE: no panacea)
- **Decision Support**
 - Differential Diagnosis
 - Evidence-based best practice
- **Graphs, flow sheets,
Patient printouts**



Downsides

- Crossover glitches (negative quality, liability)
- Other electronic nightmares, lost data and data theft
- **NEED systems to easily record problems as part of technology—should be addressed by CCHIT/FDA**



When do you need this scanned?

"It is easier to change the specification to fit the program than vice versa."

An Example:

UKIAH VALLEY MEDICAL CENTER (UVMC) / ADVENTIST HEALTH WEST (AHW)



These experiences are not unique: Fujitsu in England contracted to implement Cerner, dropped a \$1 billion contract after 1-2 years because unforeseen decisions in the Service made it unprofitable.

UVMC/AHW

- MDs not involved at start-up, with choices, or early decisions re priorities, time lines
- Physicians as passive users: Trained only to sign-on.
- Nurse and ancillary service exception based (checkbox) charting not easily accessible to MDs who read them less. Medical record is no longer a tool for patient care, but a convenient road map for lawyers.
- PAG created to work on Order Sets, a major safety advantage of EMRs. Admin had not calculated in the IT cost of creating functional computerized orderables --more delays, frustration.
- Outpatient, Cardiology & Imaging Modules, inferior in Cerner – Not interfaced.



PHYSICIAN LEADERSHIP



■ A. Committee Composition

- Not all are willing “champions”
- Decision makers
- Detail/Form vs. content
- Specialty/generalists
- Rigid/compromisers

■ B. Decision Making Principles

- 80% - 20%
- Evidence based
- Progress vs. perfection

■ C. Division of Labor

- Provider conceptualization
- Strong IT support

PRODUCTIVITY IMPROVES



- **Only with full implementation**
- **Quality training**
- **IT personnel activate program and providers**

QUALITY IMPROVEMENT vs. PAY FOR PERFORMANCE

- ❑ **Quality Improvement Systems:**
 - ❑ Best evidence based care
 - ❑ Avoidance errors
 - ❑ Provide compassionate care

- ❑ **P4P is a System of Inducements for the unwilling**
 - + Bonuses
 - + Administration
 - + new reimbursements
 - = Old reimbursements

***Budget Neutrality = LESS Reimbursement
for MORE WORK for ALL providers***





P4P: SOME CONCERNS

Pros

- Develop goals
- Develop technology:
 - Teaching participants
 - Data extraction
 - Measurement
 - Reporting
- Encourages participation; group effort
- Encourages EMR/Registries
- “Good” performers get incentives
- “Poor” performers penalized

Cons

- Evidence/Consensus
- Setting the bar LOW
- EMR vendors not there
- Unrealistic time estimates for reporting
- Maintenance of secure e-mail reports
- Payment limits are arbitrary
- Proven Technology?
- Programs not inter-operable
- Cherry Picking
- Will the most ill get the worst care?
- Penalize whole group



MEDICARE CARE MANAGEMENT DEMONSTRATION PROJECT (MCMP)

■ A. Description:

- 4 state, 4- year Medicare demonstration project
- 4 conditions (Prevention, DM, CHF, CAD) with 8-10 performance criteria each
- Report on selected Medicare patients assigned to provider

■ B. Implementation:

- Download CMS data on assigned patients, extract, report and upload using specialized tools
- Secure Website - Difficult
- State QIOs (Lumetra/CA) - Help
 - User group Webinars.
 - eMDs trainers to help us use the technology.
 - Extraction tool for manual checking.



MCMP

■ C. Reimbursement:

- Year 1 \$1,000/MD for reporting
 - Max \$5K per group practice
- Years 2, 3, 4 pay for performance
- 25% Bonus for electronic data collection by CCHIT certified EMR
 - Will 25% bonus will be paid? Programs still “in development”
- Maximum possible for my practice in 4 yrs = \$38,500
 - Max \$150K per group practice
- Medicare PQRI reimburses for MCMP participation
 - Checks are “in the mail” this month
- *Hoping* this will cover ½ my IT costs for the 4 years



MCMP

■ D. Time and Money unaccounted for:

- Teaching doctors 20+ hours
- Teaching administrators 20+ hours
- Without developed IT program, each practice must develop internal manual audit technology and teach their staff to use it.
 - I had to develop special CPT codes to be able to use eMDs tools for catching foot exams and Ophthalmology referrals -- then I had to remember to use them

■ E. Quality of Care Issues

- MCMP does measure quality of care
- MCMP does encourage improved patient care— for chosen criteria
 - Examples: diabetic foot exams, preventive care, timely laboratory tests

SUMMARY..... *finally!*

■ Information Technology is Good Medicine for Health Care Delivery

- *Still in early development*
- *What is ready for market?*
- *What is safe and effective?*


■ Health care providers must be involved leaders in development and implementation

- *Attract doctors through assistance*
- *Cover the physicians' costs as developers— Time and Money*

■ Training and support must be readily accessible

- *Ease of use is essential*
- *Attract and train more IT professionals*
- *Providers & IT professionals need to develop higher level of mutual understanding*





Who will we quote 50 years from now? Here's a 1957 prediction:

- From the editor in charge of business books
for Prentice Hall

"I have traveled the length and breadth of this country and talked with the best people, and I can assure you that data processing is a fad that won't last out the year."