

Evidence for use of EDS for implementation of guidelines

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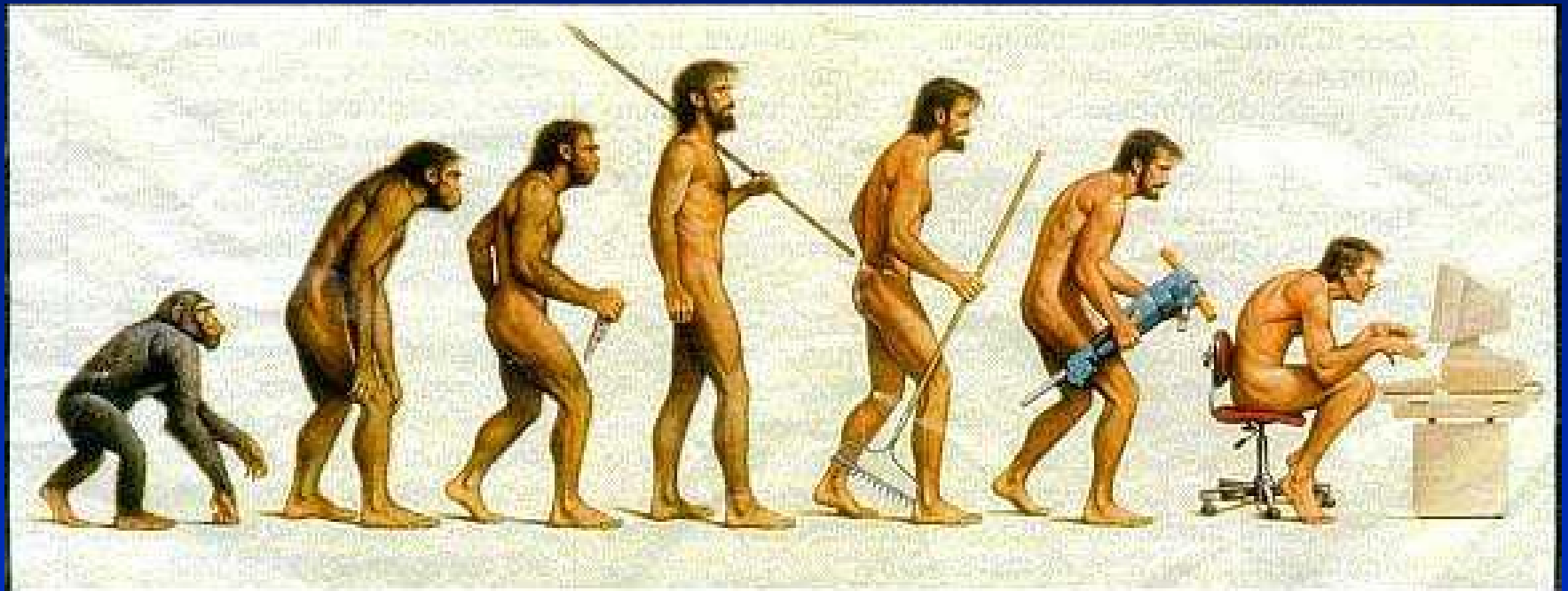
Clinical Project Manager

PREDICT-CVD/Diabetes

Vision for the Future – Institute of Medicine

Information technology, including the Internet, holds enormous potential for transforming the health care delivery system

Institute of Medicine Report 2001: Crossing the Quality Chasm



Somewhere, something went terribly wrong

Introduction

- EDS as guideline implementation strategy
- Definition of EDS or CDSS
- Evidence of effectiveness

Definition Electronic Decision Support

“Consultation systems that use artificial intelligence techniques for encoding knowledge and solving problems with that knowledge” (Thornett, A. Int J Information Management 2001)

- aid clinical decision making
- assist in diagnosis
- make management decisions based on individual patient data
- may model the likelihood of future events and effectiveness of proposed interventions

Types of clinical EDS/ electronic decision aids

- Guidelines available on internet/PDA
- Drug formularies/doses/interactions
- Specific mathematical functions-Risk calculators, calculate glomerular filtration rate (GFR)
- Evidence sources on-line eg Clinical Evidence, ACP journal club

Electronic Decision Support

- “ A system that compares patient characteristics with a knowledge base and then guides a health provider by offering patient-specific and situation-specific advice” (Friedmann and Wyatt 1997)
- Prompts/reminders
- Web-based input templates
- Web-based decision support systems

EDS-very heterogeneous

- Huge differences between systems
 - depth, breadth of content
 - integration with patient electronic record
 - integration with other IT systems
 - congruence with clinical practice- the 'fit'
 - address clinicians' needs or addressing other imperatives/agendas
 - extent of tailoring to individual patient
 - Ability to store data from consultation
- Differences clinical-IT-organisational interface
 - Clinical familiarity with computer and use of computerised tools during consultation
 - Training AND on-going support of clinicians to use tool
 - Organisational/systems investment in IT programme

Evidence for effectiveness for electronic decision support

- 11 systematic reviews of computer-based clinical decision support systems
 - Haynes et al (Arch Intern Med 1987;147:1297)
 - Austin et al (Proc Annu Symp Comput Appl Med Care 1994)
 - Johnston, M et al. (Ann Intern Med 1994;120:135)
 - Sullivan F et al. (BMJ 1995;311:848)
 - Balas, E et al. (Arch Fam Med 1996;5:271)
 - Shea, S et al (JAMIA 1996; 3:399)
 - Hunt, D et al. (JAMA 1998;280:1339)
 - Montgomery A et al (J Epi Com Health 1998;52:520)
 - Shiffman R et al (JAMIA 1999;6:104)
 - Walton, R et al (The Cochrane Library 2000)
 - Kaplan, B (Int J Med Informatics 2001;64:15)

Prompts and Reminders

- Shea et al.(1996)- 16rcts
 - (P) Ambulatory Care clinicians (mostly GPs)
 - (E) Computer reminder systems
 - (C) Manual reminders or usual care
 - (O) Changes in preventive services
 - vaccinations eg, flu, tetanus
 - Breast, cervical, colorectal screening
 - CVD risk reduction eg, check BP or cholesterol, smoking assessment

Multiple systems: multiple outcomes

- Hunt et al (1998) 68 controlled trials
 - (P) Clinicians
 - (E) Computer decision support systems
 - (C) No CDSS
 - (O) Clinical performance (65)- drug dosing, diagnostic aids, preventive care or patient outcomes (7) BP, weight, quality of life

Hunt et al (1998)

- Drug dosing (9/15 showed benefit)
- Diagnostic aids (1/5 showed benefit)
- Preventive care (14/19)
- Patient outcomes (6/14) weight changes and QOL scores

CDSS and Management of Hypertension

- Montgomery A and Fahey T (1998)
7rcts, 11,962 patients
 - (P) Ambulatory Care clinicians
(Hypertension clinics, community-based health centres, GPs)
 - (E) Computer reminder and/or CDSS
 - (C) Manual reminders, phone call or usual care
 - (O) Management of hypertension

Functionality and effectiveness

- Shiffman et al (1999) 25 studies 1992-8
 - (P) Clinicians
 - (E) Computer-based guideline implementation systems
 - (C) ?
 - (O) Functionality (25)
Effectiveness (20)
- Guideline adherence improved 14/18 systems

Kaplan (2001) on usefulness of CDSS

- General consensus that CDSS
 - Potential to change Drs behaviour
 - Reminders, alerts, treatment plans and patient education are effective to change practice behaviour
 - Whether systems aid with diagnosis is unclear
 - Little evidence that physicians comply with guidelines whether incorporated into CDSS or not.

Evaluation of CDSS via randomised controlled trials

Rct not well suited

- to answer whether a system will be used or how it will be used
- to evaluate the impact on users and their clinical problem nor the the 'fit' of the system within clinical culture, organisation and everyday worklife
- User's opinions of computer systems make a difference in whether or not a system will have an effect



"Nurse, get on the internet, go to SURGERY.COM, scroll down and click on the 'Are you totally lost?' icon."

Hand over to Martin - fish-hooks to
look out for