USABILITY: PRESENT AND FUTURE Ross Koppel, Ph.D.

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What two industries call their customers users?





Example 1: A seemingly straightforward measure in an EHR







Variations in EMRs

Another example: Ordering Warfarin: Lag, Prediction, Trends

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Why are usability problems not solved?

Current Responses to Usability Problems

PRIORITIES

To.... Solutions....

Substitutable Medical Apps, reusable technologies:

Harvard Medical School, Children's Hospital of Boston, and friends

Think smart phone with apps.

"Let's build an app for that!"

Use cases defined by clinicians (Children's Boston)

- One stop, no lookup tables
- Longitudinal view with integrated EMR data
- At-a-glance assessment
- Drill-down for details, filters

SMART App API (<u>http://smartplatforms.org</u>) Run via SMART API on Cerner Millennium at CHB

SMART BP Centiles in Action

Blood Pressure Centiles SMART Application

Another Solution

Instant and Frictionless reporting of problems

 Clinicians effortlessly report problems, which are then sent to experts... Reports are saved, and can't be ignored nor negated.

Another Example of a Solution: Electronic Shadowing of Users

It's like Google Analytics[™] for EHR usage.

Firm name and logo intentionally obscured

Example of Firm Name capabilities:

Quantifying unused shortcuts.

New Medication Find Medication Shortcut Custom List: Family Practice Reference List... ; Old Male AMOALCILLIM 125 MG/SML FOR Height: 69 in (175 cm) X Fol Find Medication Weight: 150 lb (68.1 kg) Search for: Search Tip: BSA: 1.83 sqm Type in word(s) or word amount to search amoxicillin Search by text e.g. albuter Prim Ins: Search results: Current Medications Brand Name Avg. \$. AMOCLAN SUSR OT C ATE SUSR T CLAVULANATE XR12H-TAE AMOXICILLIN-POT CLAVULANA De OT CLAVULANATE XP4 AUGMENTIN XR XR12H-TAB < AF Me AMOXICILLIN-POT CLAVULANA CALLIN-POT CLAVULA AMOXICILLIN-POT CLA AMOXICILLIN_POT CL Inst AMOXICILLIN-POT CLAN CHEW AMOXICILLIN TABS AUGMENTIN CHEW CILL CLAVULANATE CHEW AUGMENTIN TABS CILLIN-POT CLAVULANATE TABS Þ AUGMENTIN SUSR AMOXICILLIN-POT CLAVULANATE SUSR AMOXICILLIN CHEW AMOXICILLIN CHEW Current Allergies and Adverse Rxns TRIMOX CAPS AMOXICILLIN CAPS Рг AMOXICIEUN SUSR. AMOXICIEUN SUSR. WARNING: ADVERTISEMENT 0.38 0.66 0.59 Equivalent Meds OK. Cancel Add to custom list: Drug Instructions/Duration Qty/Refills Save & Continue OK. Cancel

Long Way

Example: The "carpal-tunnel metric".

Looking and asking still needed

Conclusion

Usability *can* be ignored...

But with great loss of patient safety & clinician efficiency

Usability can be defined as indefinable

And yet it exists (and is measurable)

Usability problems can be fixed

But only if we know about them...

and want to fix them

Thank you

Questions

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