Health information technology platforms for health care system research and operations

Ralph Gonzales, MD, MSPH; Professor of Medicine, Epidemiology and Biostatistics Associate Chair, Ambulatory Care and Clinical Innovation Director, UCSF Program in Implementation Science

Disclosure: R Gonzales serves as a Scientific Advisor to Phreesia, Inc.

Patient-Facing Platforms

Hardware (Form Factor)

- Kiosk
- Computerized Tablet
- Mobile device/Cell phone

Software/Apps

- Macromedia Authorware... Flash
- Electronic medical record
- Interactive voice recognition software

Research Experience Translating Evidence into Practice

Healthcare Intervention Settings

- Denver Health, Urgent Care (CDC) (kiosk)
- EDs, 16-sites national trial (AHRQ; VA) (kiosks)
- Geisinger Health System, 33 sites (CDC) (EMR)
- EDs, 4-sites NoCal (CHCF) (kiosk)
 - Acute care (UTI)
 - Preventive care (chlamydia; birth control)
- INSP, Mexico (UC-MEXUS) (cell phone; IVR)
- La Clinica, Oakland (R. Khanna; internal) (cell; IVR)

<u>ACTIVE</u>

- Pediatric offices; mental health (Ozer; **NICHD**) (tablet)
- Primary care; cancer screening (Walsh; NCI) (kiosk)
- Primary care; tobacco counseling (Satterfield; NIAAA) (tablet)
- Urgent care; miscellaneous (internal/Phreesia) (tablet)
- Amb care; primary care-specialty care integration (DOM; DSRIP) (EMR)

Design (understanding)

Implementation (adoption)

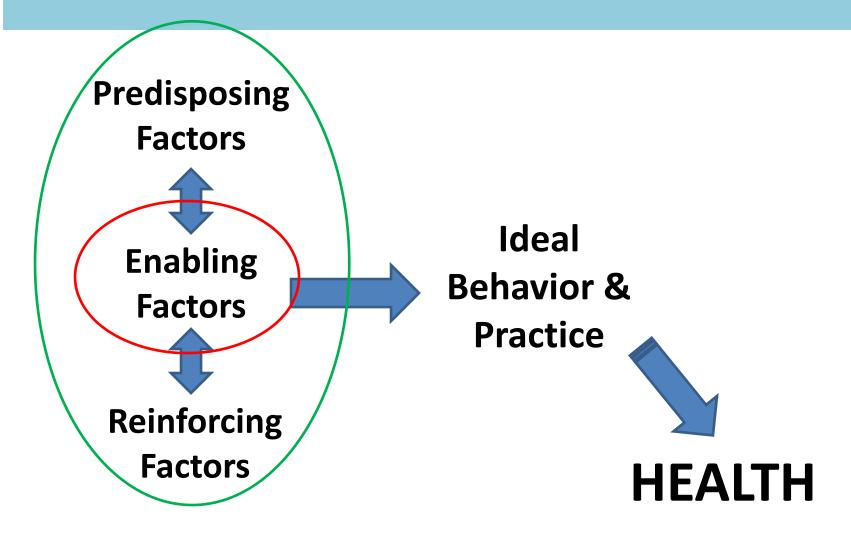
Evaluation (business case)

Dissemination (spread)

Bibliography

- Harris RL, et al. Optimizing antibiotic prescribing for acute respiratory tract infections in an urban urgent care clinic. *Journal of General Internal Medicine*, 2003;18:326-334.
- Leeman-Castillo BA, et al. Acceptability of a bilingual interactive computerized educational module in a poor, medically underserved patient population. *Journal of Health Communication*, 2007;12:77-94.
- Aagaard EM, et al. An interactive computer kiosk module for the treatment of recurrent uncomplicated cystitis. *Journal of General Internal Medicine*, 2006;21:1156-9.
- Metlay JP, et al. Randomized trial of a multidimensional educational intervention to improve antibiotic use for adults with acute respiratory infections managed in the emergency department. *Annals of Emergency Medicine*, 2007;50:221-30.
- Schwarz EB, et al. Computer-assisted provision of emergency contraception a randomized controlled trial. *Journal of General Internal Medicine* 2008;23:794-99.
- Stein J, et al. A randomized trial of computer kiosk-expedited management of cystitis in the emergency department. *Academic Emergency Medicine*, 2011 Oct;18(10):1053-9.
- *Price EL, et al. A computerized education module improves patient knowledge and attitudes about appropriate antibiotic use for acute respiratory tract infections. *Patient Education and Counseling*, 2011;85:493-8.
- Schwarz EB, et al. Computer-assisted provision of hormonal contraception in acute care settings. Contraception. 2012 Aug 23. [Epub ahead of print]

How to Make Change "Easy"



Practice Innovations: Keys to Success

Physician Adoption

- ...reduce time/hassle factors?
- ...generate more revenue?
- ...enhance the patient relationship?

Patient Adoption

- ...improve timely access to care?
- ...reduce out-of-pocket health care costs?

System (payor) Adoption

- ...reduce total health care costs?
- ...reduce medical errors/improve quality?
- ...enhance patient satisfaction?

Potential Roles for Point of Service Computerized Applications

- Registration; Co-Payments; Informed Consents
- Health Care Maintenance & Prevention
 - Tobacco counseling
 - Birth control & family planning
- Disease Screening Instruments
 - HIV/STDs; hepatitis B; HCV
 - Cancer
 - Chlamydia Screening
- Acute Illness Management
 - Expedite Triage and Testing
 - Uncomplicated URIs, UTIs
- Chronic Disease Management
 - Depression Care
 - Diabetes Care



Some Important Lessons

 Low health literacy/low SES patients may be your most important target

Automate and integrate computerized interaction into standard workflow

 Introducing IT solutions into health care delivery has major social and cultural implications... understand these before proceeding!