

## Results of the OKPRN Wellness Portal Study

Friday, June 17th, 2011  
Madrid III ~ 2:10pm - 2:55pm

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### Objectives

- To update clinicians about the results of the patient Wellness Portal randomized controlled trial conducted in OKPRN in the past several years and lessons learned from the study

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#### Corporate Organizations

None

#### Financial Interests/Affiliations

The content of this/these material(s)/presentation(s) in this CME activity **will not** include discussion of unapproved or investigational uses of products or devices.

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### Disclosure Information

OKPRN/OAFP Scientific Assembly, June 17<sup>th</sup>, 2011  
Zsolt Nagykaldi, PhD

**Disclosure of Relevant Financial Relationships**

- I have no financial relationships to disclose

**Disclosure of Off-Label and/or investigative Uses**

- I will not discuss off label use and/or investigational use in my presentation

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### An Integrated Patient Wellness Portal Improves Preventive Services Delivery and Patient-Centeredness of Care



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### Background and Significance

- Number of evidence-based preventive service recommendations increases rapidly (Nat. Guideline C.I.house had 2517 in June, 2011)
- Number of known risk factors for adverse health outcomes increases exponentially (consider genetic risk factors)
- Preventive services coverage is only about 50% in the U.S.
- Not enough time to address even *current* preventive services
- Bridging of this gap requires:
  - redesigned, patient-centered care delivery systems
  - sophisticated clinical decision support (for patients as well)
  - personalization and goal-directed *prioritization* of care options
  - significantly greater patient involvement (collaborative care)
  - a paradigm shift in thinking and culture (practices & patients)

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### The Wellness Portal Study

(AHRQ 1R18HS017188-01; 2008 - 2011)



**Aims:**

- Develop, field test, and refine a web-based patient Wellness Portal linked to an existing and tested practice portal (PSRS) in primary care practices (2008)
- Determine the impact of the Wellness Portal on patient-centered preventive care by examining the behavior and experiences of both patients and practices and the degree to which recommended services are individualized and delivered (2009-2010)
- Disseminate the Portal technology and lessons learned from the Wellness Portal trial (2011)

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### The Wellness Portal Study



**Phases:**

- 1) Year one: systematic development led by a patient and nurse/clinician advisory committee (N=11), followed by a 6-month pilot testing (N=30)
- 2) Year two: cluster RCT in 8 OKPRN primary care practices (8 clinicians in 6 clinics) including children ( $\leq 6$ ) and adults ( $\geq 50$ ) over a 12-month period (N=538)
- 3) Year three: State-level and national dissemination via a professional PR campaign, including printed, web-based, and audiovisual media, in addition to academic venues

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### Features of the Wellness Portal



- Demographics profile
- Preventive services history
- Health risk tracking (now full health risk appraisal)
- Personalized wellness plan (evidence-based)

} "Research" features

- Vitals and labs tracking and charting
- Symptom diary with severity plotting
- Medical encounters history
- Medication list management
- Conditions / problem list management
- Secure messaging with PCP practice
- Personal Wellness Record (PWR) in CCR format

} "Patients wanted" features

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### Portal Pilot: Qualitative Feedback

Q.: What do you think about the Wellness Portal in terms of improving the quality of care you receive?

*"Since beginning to use the Wellness Portal, my health has greatly improved. I've lost weight, my blood pressure has dropped, I've increased my activity level--and I feel and look so much better. Perhaps these positive attributes come simply from being more conscious of my health, but nevertheless, I'm thrilled." (78 year old African Am. woman)*

*"I think the health history is a valuable tool. It's nice to be able to see when my last pap smear occurred or when my immunizations were received or are due again. It's easy to access and very convenient." (67 year old white woman)*

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### Cluster RCT: Recruitment Protocol

- To accommodate drop-outs we oversampled in each practice by 10 patients (N=500)
- The clinician already uses the Preventive Services Reminder System (PSRS)
- The clinician sees both young children (age <6) and adults (age ≥50) on a regular basis
- The clinician did not participate in pilot study activities
- Patient must have been seen at least twice by the enrolled clinician in the last 12 months
- Patients must be 6 years old or younger or 50 years old and older
- Patients must speak English or Spanish and must have a basic level of computer skills
- Patients did not participate in pilot study activities

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### Cluster RCT: Patient Population

CONSORT:

Patient Characteristics	Control (enrolled)	Intervention (enrolled)	Control (did not complete)	Intervention (did not complete)
Mean age (years)	50.5	54.6	69.0	60.3
Gender proportion (female)	59%	63%	48%	51%
Minority group proportion	18.5%	18.1%	10%	8.1%
High school education proportion	54%	45%	82%	90%
Avg. number of risk factors per patient	1.53	1.15	1.56	1.30
Ratio of active smokers	15%	17%	25%	19%
Prev. service coverage at baseline	41%	37%	26%	31%
Household income less than \$30K/year	26%	40%	35%	22%

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### Outcomes of the c-RCT: Patient-Centeredness of Care



- Measured as the sum of CAHPS items (Q1-Q8 + Q10-Q11) yielding a continuous scale from 1 to 10
- Composite score relates to domains of patient - PCP interaction in various self-management & shared-decision making areas pertaining to preventive care
- Difference-in-differences analysis, adjusted for clustering
- Control group: composite score *decreased* by 0.43 points
- Intervention group: comp. score *increased* by 0.32 points (p=0.037)

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
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### Outcomes of the c-RCT: Patient-Centeredness of Care Via HLM



ACIC Measure in the Hierarchical Model *	Outcome	Odds Ratio	CI [95%]
Community linkages are established	PC <sup>1</sup>	8.22	3.22 - 22.16
No ACIC measure included	CN <sup>2</sup>	1.80	1.05 - 3.11
Community linkages are established	CN <sup>2</sup>	3.82	2.75 - 5.31
Self-management support is available	CN <sup>2</sup>	2.00	1.17 - 3.40
Patient decision support is available	CN <sup>2</sup>	1.85	1.09 - 3.12
Care delivery system in the practice	CN <sup>2</sup>	1.72	1.12 - 2.64
Clinical information system in the practice	CN <sup>2</sup>	1.60	1.13 - 2.26
Integration of prevention model into practice	CN <sup>2</sup>	1.8	1.00 - 3.25

In addition to individual Assessment of Chronic Illness Care (ACIC) measures, we also controlled for demographics, personal risk factors (e.g. chronic conditions, smoking, alcoholism, vaccine allergies and contraindications, removal of prevention target organs, active immune status), and PAM scores in each model.  
<sup>1</sup> PC: Patients' perception of patient-centeredness of preventive care  
<sup>2</sup> CN: Patients' perception of clinicians' knowledge of their medical history

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### Outcomes of the c-RCT: Patient Activation



- Measured as change in PAM-13 scores that are usually between 38.6 and 53 (Hibbard et al, 2005), with clustering
- PAM indicates patient knowledge, confidence, and skills that demonstrate self-efficacy
- No difference in PAM scores at baseline (p=0.44)
- The PAM score increased from 45 to 47 in the Portal group after the intervention, without change in control (p=0.0014)
- Suggests that some patients were moving along the stages of change continuum from 2<sup>nd</sup> stage ("confidence and knowledge to take action") to 3<sup>rd</sup> stage ("taking action")

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### Outcomes of the c-RCT: Missed Opportunities

- Service delivery data from several sources (incl. the Portal)
- Personal risk / recommendation modifiers from chart & Portal
- USPSTF/ACIP/CDC recommendations from risk engine

Outcomes	Control (SD)	Intervention (SD)	p-value
Average recommendations / person PRE	8.67+/-3.4	8.61+/-3.2	NS
Average recommendations / person POST	11.85+/-5.2	9.67+/-3.8	<6x10 <sup>-7</sup>

- 37% increase in control, only 12% in Portal group ( $p < 6 \times 10^{-7}$ )
- Portal could have helped personalize care recommendations and prompt patients and clinicians to act upon them

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### Outcomes of the c-RCT: Semi-Structured Practice Interviews

- Assigned Portal functions to front desk or to nurses, based on PEA input
- Burden of the Portal on practices had been minimal (clinician statements)
- Patient requests for preventive services seemed to increase slightly and the Portal generally increased patient satisfaction
- Quotes: "Patients were excited about it"; "They thought it was a good idea"; "Patients asked for specific services, immunizations, or lab tests"
- Difficulty: Portal website was available for only a small subset of patients in each clinician practice (practice-wide implementation in other studies)
- Difficulty: hard to address prevention systematically in a healthier population
- Suggestion: making Portal use a "requirement" for being seen regularly (e.g. via a yearly wellness visit or physical exam) could improve adherence
- Adjusting technology: replacement of bulky Portal kiosks with small, touch-screen computers (wireless Tablet PCs or an iPads)

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### Conclusions

A comprehensive, integrated and prevention-oriented patient portal can:

- increase the patient-centeredness of care
- improve patient activation, enhance the delivery of both age and personal risk factor-dependent preventive services
- promote the utilization of web-based personal health records
- increase the knowledge of clinicians about their patients' medical history in primary care settings

The Portal study underscored the importance of:

- Developing a more sophisticated understanding of patient-computer interactions in primary care (the role of "intelligent design" in HIT)
- Differences in patient attitudes toward preventive / prospective care
- Varying ability of practices to redesign their workflow around a patient-centered care delivery approach, even when significant external support is available

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PSRS PDA Prototype Testing	OK Medicaid (Contract)
PSRS Web-based Version	OK Medicaid (Contract)
Testing in Medicaid Population	OK Medicaid (Contract)
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Prevention Nurse Model	OCAST (Grant)
Medicaid Implementation	OK Medicaid (Contract)
Patient Wellness Portal	AHRQ (Grant, active)
K08 Award (HRA development)	AHRQ (Grant, active)

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