Addressing health literacy through interactive patient-centered information technology



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Presenter Disclosures

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No relationship to disclose.

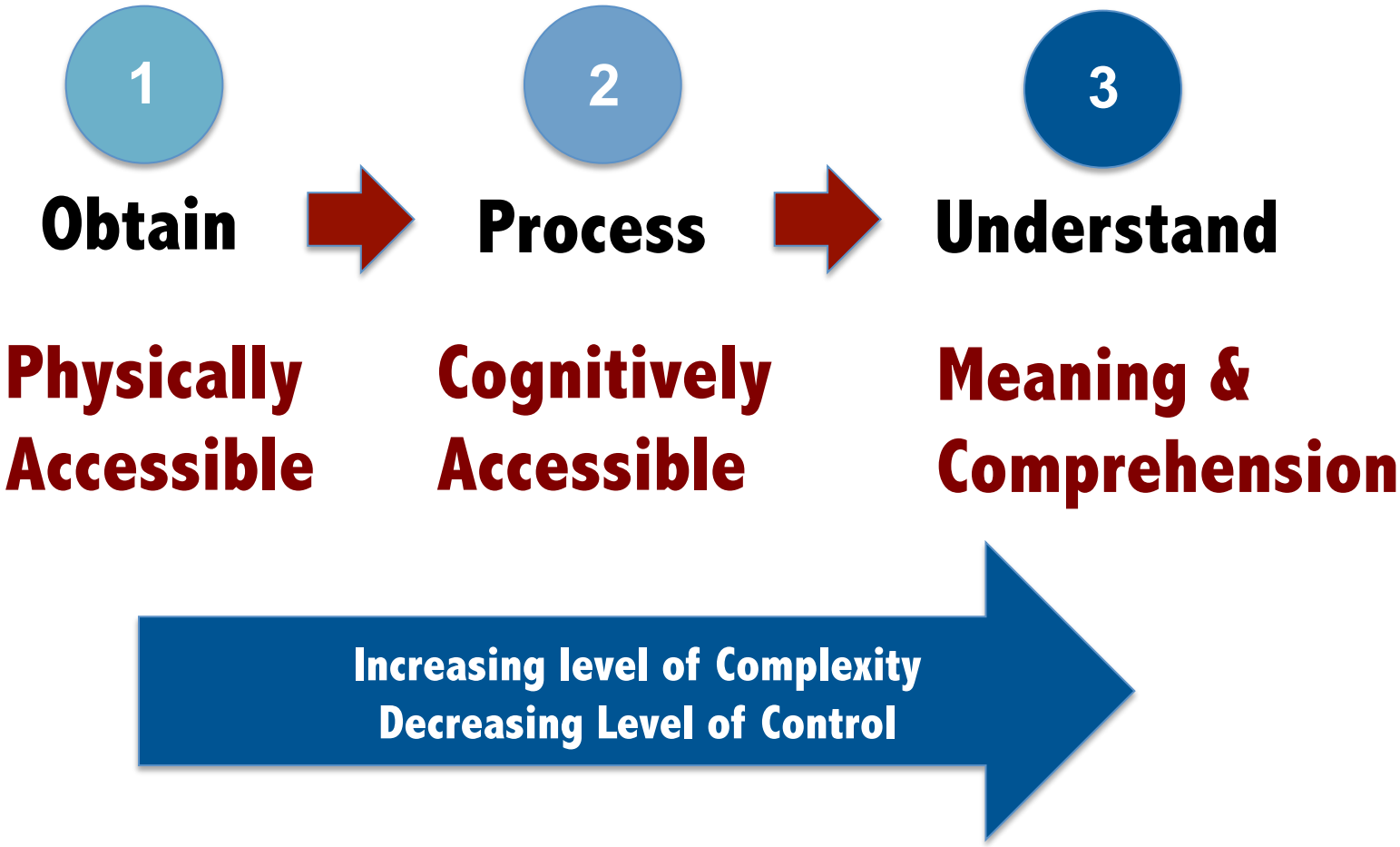
Health Literacy Defined

Diminished ability or opportunity to obtain, process and understand verbal and written health information



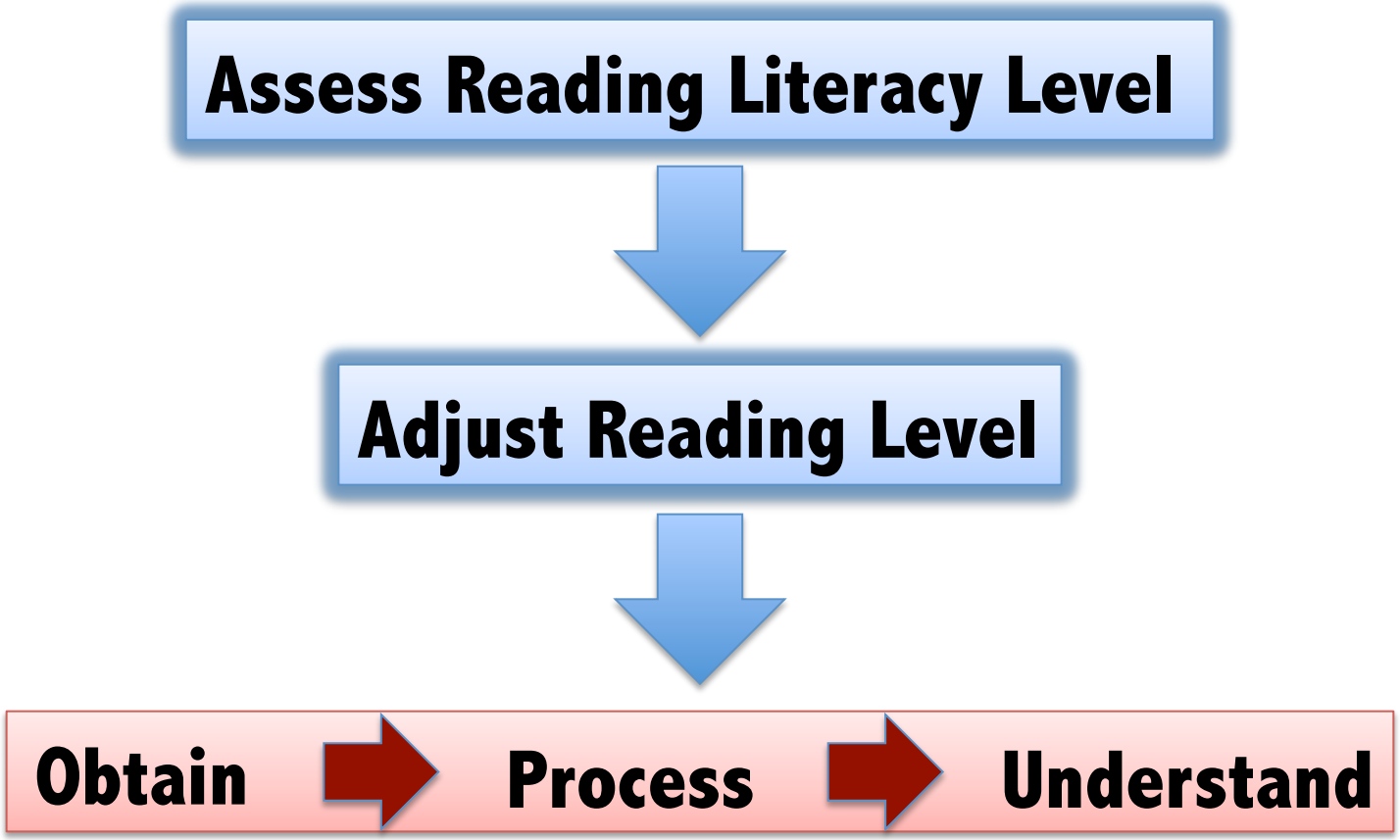
-- **Health Literacy: A Prescription to End Confusion**

Communication Processes



Health Literacy Approach

Print Communication



Health Literacy Approach

Visual Communication



Diabetes



Outpatient



Intensive Care



Oncology



Physical Therapy



Laboratory



Pediatrics

Source:

The Robert Wood Johnson Foundation

Rethinking our Approach



We drive into the future using only our rearview mirror.

-- Marshall McLuhan



Rethinking our Approach

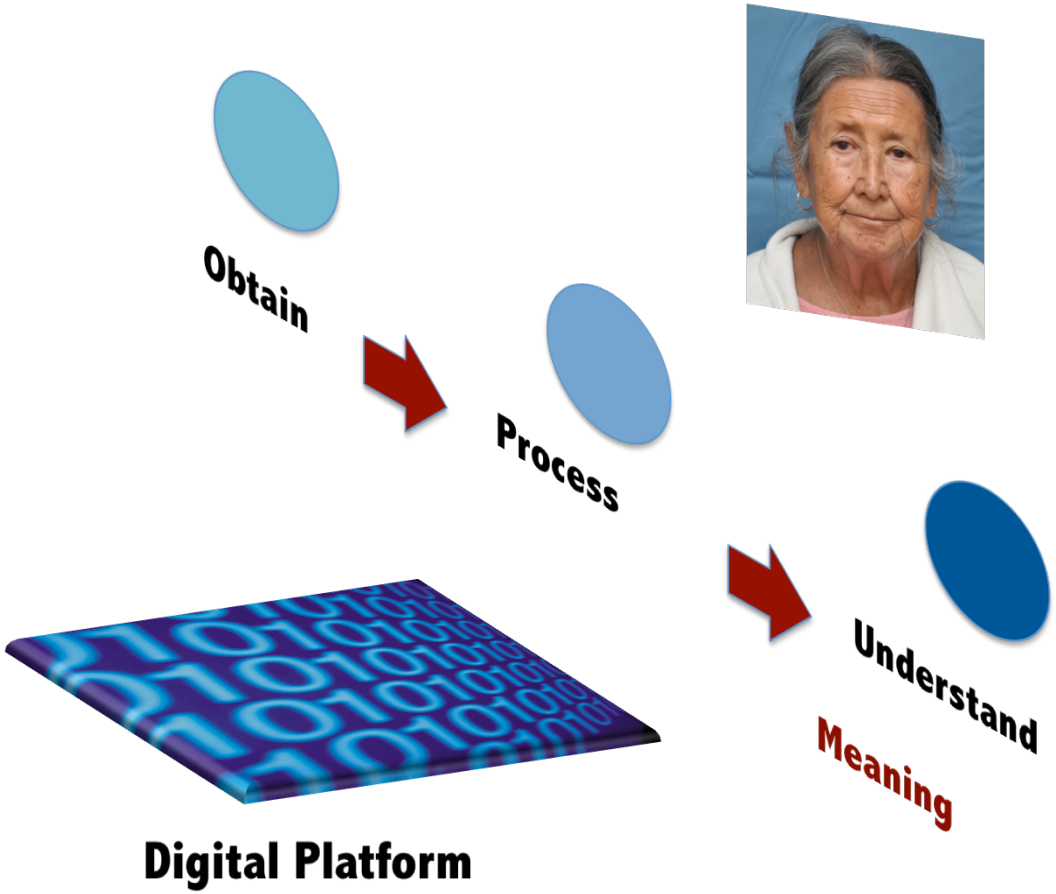
When faced with a totally new situation, we tend always to attach ourselves to the objects, to the flavor of the most recent past. We look at the present through a rear view mirror. We march backwards into the future.

-- Marshall McLuhan

The Medium is the Message



New Perspective on Health Literacy



Digital Multimedia Palette

- Text
- Audio: voice, music, sound effects
- Graphics: photo images, illustrations
- Animation: text, graphic images
- Video: full motion digital video

HealthPoint Predicates

HEALTH Point communications

- Patient-driven
- Technology as an enabler
- Patient access to technology
- Prevention focused

Low Literacy Patient Characteristics



- Low-income
- Low education
- Medically underserved
- Poor health outcomes

Low Health Literacy Cancer Disparities



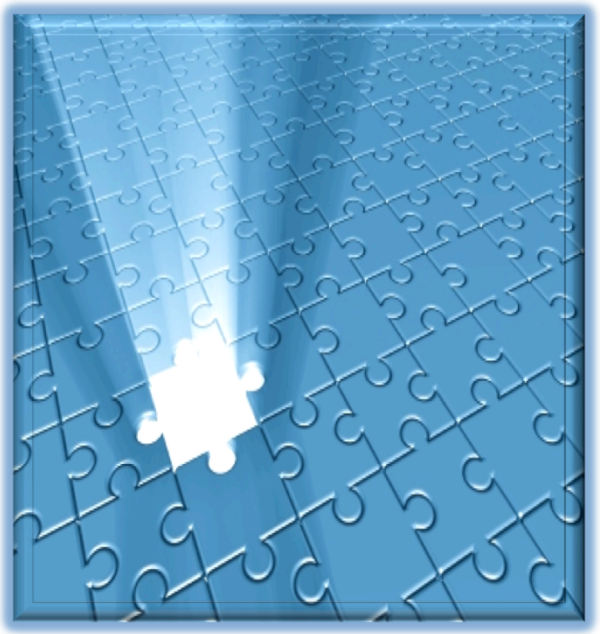
- Lower screening rates
- Higher late-stage detection
- Lower survival rates
- Higher mortality rates

Cancer Screening Barriers



- Knowledge & misconceptions
- Attitudes: personal, cultural
- Language: English proficiency
- Literacy and Numeracy
- Cancer-specific literacy

Cancer Prevention Intervention Goals



- Overcome barriers
- Increase comprehension
- Promote screening and risk reduction behavior

Health Communication Goals



Messages

- **Culturally & Linguistically Appropriate**
- **Cognitively accessible information**

Technology

- **Intuitive Navigation**
- **Transparent technology**

Digital Technology Approach



Use interactive, multimedia digital touchscreen kiosks to deliver cancer screening and risk reduction education intervention



Why Interactive Multimedia Kiosks?

- self-paced
- individualized
- engage learners
- tailor messages
- navigation ease

Cancer-specific Literacy

(beyond Literacy and Numeracy)



- Cancer Risk Factors
- Cancer Screening Frequency
- Screening and Early Detection
- Terminology: eg., polyps, lesions, cervix, metastasis, asymptomatic
- Etiology of cancer vs. infectious disease

HealthPoint Intervention Kiosks



- Foster active learning
- Tailor messages
- Use behavioral models

Tailoring Elements

One size ⃠ fit all



- Language
- Age
- Gender
- Screening history

Kiosk Intervention Efficacy Study Findings



Participant Characteristics
Breast Cancer Intervention

Item	Pre N=583	Post N=614
<$350/wk	59%	62%
< high school	62%	63%
U.S. born	17%	17%

Knowledge Gains
Breast Cancer Intervention

	Pre	Post	P value
Age as risk factor	82	91	<.001
Family history	82	92	<.001
BSE frequency	51	71	<.001
MAM frequency	42	56	0.001

Attitude Change
Breast Cancer Intervention

Attitude	P value
Mammograms are harmful	0.03
Mammograms for screening (not diagnostic)	0.04
Breast cancer can be cured if detected early	0.03

Behavioral Outcomes
Breast Cancer Intervention
Non-adherent women
(N= 512)

Mammography Screening	51%
Received mammogram	36%
Scheduled mammogram	15%

Knowledge Gains
Cervical Cancer Intervention

Knowledge Items	Intervention (383) %	Control (344) %	P Value
Cervical cancer caused by HPV	51	32	<0.0001
Multiple sex partners increases risk	79	68	0.0013
Papillomas may take 10 to 20 yrs…	37	18	<0.0001
Knows of free Pap screening	60	47	0.0003
Knows how to access program	50	37	0.0004
Mean correct responses (max=8)	3.7	3.1	<0.0001

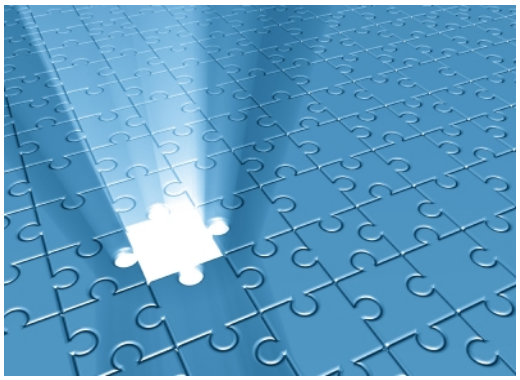
Attitude Change
Cervical Cancer Intervention

Attitude	Intervention (383) %	Control (344) %	
Never though of getting Pap	46	54	0.05
Costs too much to get Pap	26	32	0.10
Nothing you can do to prevent . . .	29	33	0.27
It's fate if woman gets cervical cancer	24	31	0.043
Chances of getting cervical cancer low	34	28	0.10

Behavioral Outcomes
Cervical Cancer Intervention

	Inter	Cont	
Self-efficacy	**%**	**%**	**P Value**
Every women should get Pap smear	99	97	0.08
Can get a Pap smear if needed	93	91	0.40
Pap smears can save your life	96	95	0.75
Screening behavior			
Obtained a Pap test or appointment	51	48	0.35
Screening attribution	(196)	(164)	
Kiosk main reason for Pap	37	27	0.045
Kiosk info especially influenced Pap	90	76	0.0002

Conclusions



- Design patient-centered interventions
- Develop cognitively-accessible messages
- Opportunity to move beyond print media
- Use interactive media to overcome barriers
- Tailor content to specific audiences

Contact Information

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