Health Literacy: More to It Than Meets the Eye

2010 CHPR Conference
Center for Health Promotion Research is to Improve the Health of Underserved People: Health Literacy: Communicating with Underserved Populations

Eduardo Sanchez, MD, MPH, FAAFP
Vice President and Chief Medical Officer
Blue Cross and Blue Shield of Texas

March 3, 2010
Demographics of education and its life course implications in health

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Health literacy

"Health literacy is a constellation of skills, including the ability to perform basic reading and numerical tasks required to function in the health care environment. Patients with adequate health literacy can read, understand, and act on health care information.

Ad Hoc Committee on Health Literacy, AMA, 1999
Skills Needed for Health Literacy
(in the medical care setting)

- evaluating information for credibility and quality
- analyzing relative risks and benefits
- calculating dosages
- interpreting test results
- locating health information

(nnlm.gov)
Health literacy

"The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions".

Healthy People 2010
Determinant of Diabetes?

Persons living in low income communities are 80% more likely to be hospitalized for diabetes or related complications compared with those living in affluent areas

(AHRQ)
Low health literacy?
Access to healthy, affordable food

- A 2007 study by University of Texas at Dallas economists Nathan Berg and James Murdoch found that southern Dallas residents had less access to grocery stores and nutritional food than did those in the city’s northern half.

- St. Louis-based Save-a-Lot tries to mine such imbalances by opening stores in underserved neighborhoods and selling food at what it says is comparatively affordable prices.

- A 17,000 square-foot store recently opened on Lancaster Road. The store is the third Save-a-Lot in southern Dallas and 15th in the Dallas-Fort Worth area.

What Drives Health Status and Health Care Costs?

Access to Care: 10%
Genetics: 20%
Environment: 20%
Behavior: 50%

How Can We Encourage and Support Behavior Change?

Source: IFTF and Center for Disease Control and Prevention, Health and Healthcare 2010, January 2000
How Can We Encourage and Support Behavior Change?

Environmental and Policy Change

Personal Responsibility
• Incentives
• Disincentives
Health literacy -revised

The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make “informed” health choices.

Healthy People 2010
Health literacy is ... a means to an end

Health promotion – a process of enabling people to increase control over their health and its determinants and thereby improve their health
Health Disparities and Health Equity

Health disparities - differences in the incidence and prevalence of health conditions and health status between groups

Health equity - when everyone has the opportunity to “attain their full health potential” and no one is “disadvantaged from achieving this potential because of their social position or other socially determined circumstance”.

Skills Needed for Health Literacy (in the community)

- determining credibility of sources of information
- evaluating information for credibility and quality
- knowing how to negotiate and navigate (where’s the closest good store or safe park?)
- appreciating that advertising is marketing (not education)
- locating nutritional information
- understanding relative costs and benefits of food choices
- calculating portions
- calculating distances and effort
- time management (for food preparation and physical activity)
- knowing how to advocate
Eat smart
Be active: movement = health
Avoid tobacco
Sleep plenty
Stay connected
Literacy types

- visual literacy (able to understand graphs or other visual information),
- computer literacy (able to operate a computer),
- information literacy (able to obtain and apply relevant information), and
- numeric or computation literacy (able to calculate or reason numerically)

consumer literacy

(nnlm.gov)
"Our findings suggest that consumer education must expand beyond disseminating information to include developing consumers’ confidence and abilities to engage socially when their needs are being denied, thwarted, or opposed."

Adkins and Ozanne,
Journal of Consumer Research, June 2005
Populations at risk for low health literacy

- Elderly (age 65+) - Two thirds of U.S. adults age 60 and over have inadequate or marginal literacy skills, and 81% of patients age 60 and older at a public hospital could not read or understand basic materials such as prescription labels (Williams, MV. *JAMA*, December 6, 1995).

- “Minority” populations

- Immigrant populations

- Low income - Approximately half of Medicare/Medicaid recipients read below a fifth-grade reading level.

- People with chronic mental and/or physical health conditions

- Low educational attainment
## Projected Population

(census.gov)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
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<td>Total Pop</td>
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<td>336 M</td>
<td>364 M</td>
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<td>420 M</td>
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<td>50.1%</td>
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<td>Hispanic</td>
<td>12.6%</td>
<td>15.5%</td>
<td>17.8%</td>
<td>20.1%</td>
<td>22.3%</td>
<td>24.4%</td>
</tr>
<tr>
<td>Black</td>
<td>12.7%</td>
<td>13.1%</td>
<td>13.5%</td>
<td>13.9%</td>
<td>14.3%</td>
<td>14.6%</td>
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<tr>
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<td>4.6%</td>
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<tr>
<td></td>
<td>Household income</td>
<td>Per capita income</td>
<td>% Poverty</td>
<td>% Uninsured</td>
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<tr>
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<td></td>
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<tr>
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<tr>
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<tr>
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<td>$29,901</td>
<td>10.2</td>
<td>16.8</td>
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</table>
Causes of Death, United States 2005

- Diseases of the heart: 26.6%
- All cancers: 22.8%
- Stroke: 5.9%
- Chronic lower respiratory disease: 5.3%
- Unintentional injuries: 4.8%
- Diabetes mellitus: 3.1%
- Alzheimer’s disease: 2.9%
- Influenza and pneumonia: 1.8%
- Septicemia: 1.4%

Source: cdc.gov
Deaths attributable to individual risk (thousands) in both sexes

- Smoking
- High blood pressure
- Overweight-obesity (high BMI)
- Physical inactivity
- High blood glucose
- High LDL cholesterol
- High dietary sodium (salt)
- Low dietary omega-3 fatty acids (seafood)
- High dietary trans fatty acids
- Alcohol use
- Low intake of fruits and vegetables
- Low PUFA (in place of SFA)
Higher health literacy is correlated with lower mortality rates

Mortality Rates by Health Literacy Levels

- **Adequate** – understands most reading tasks; misreads only complex information.
- **Marginal** – sometimes misreads instructions and dosages and has difficulty with complex information.
- **Inadequate** – often misreads Rx instructions and appointment slips.

Note: Based on 3,260 Medicare managed-care who were interviewed in 1997 to determine their demographic characteristics, chronic conditions, self-reported physical and mental health, and health behaviors. Participants also completed the shortened version of the Test of Functional Health Literacy in Adults (S-TOFHLA) that included two reading passages and four numeracy items to assess comprehension of hospital forms and labeled prescription vials that contained numerical information. Main outcome measures included all-cause and cause specific (cardiovascular, cancer and other) mortality using data from the National Death Index through 2003.

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National High School Graduation Rates, 2003-04

- Native American: 49.3%
- Black: 53.4%
- Latino: 57.8%
- White: 76.2%
- Asian: 80.2%

Cities in Crisis, EPE Research Center, 2008
Education: The Greatest Predictor of Longevity

- Lower education = unhealthy behaviors
- Lower education = higher death rate
  - < 12 years of education: 615.6 deaths per 100,000 for adults 18-65
  - >13 years of education: 207.9 deaths per 100,000 for adults 18-65

CDC National Center for Health Statistics, Vital Statistics Vol. 53, #5, Deaths, 2002
Age adjusted death rates among 25-64 year olds (per 100,000) by educational attainment (2005)

<table>
<thead>
<tr>
<th>All causes</th>
<th>&lt;12 years</th>
<th>12 years</th>
<th>13 or more</th>
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<td>478</td>
<td>206</td>
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<tr>
<td>male</td>
<td>821</td>
<td>606</td>
<td>249</td>
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<tr>
<td>female</td>
<td>472</td>
<td>352</td>
<td>165</td>
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CDC
Age adjusted death rates among 25-64 year olds (per 100,000) by educational attainment (2005)

<table>
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<tr>
<th>Chronic disease</th>
<th>&lt;12 years</th>
<th>12 years</th>
<th>13 or more</th>
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<tbody>
<tr>
<td>Both sexes</td>
<td>484</td>
<td>359</td>
<td>162</td>
</tr>
<tr>
<td>male</td>
<td>594</td>
<td>438</td>
<td>188</td>
</tr>
<tr>
<td>female</td>
<td>375</td>
<td>286</td>
<td>136</td>
</tr>
</tbody>
</table>

CDC
Can health literacy be taught?
Health literacy training initiative

- 58% decrease in ER visits
  - to 2.2 visits per year
- 42% decrease in doctor visits
  - to .33 visits per year
- 29% decrease in missed school days
- 42% decrease in missed work days

UCLA / Johnson & Johnson Health Care Institute, 2007
Promotores

- Health education
- Patient navigation
- Community navigation
Core Roles of Promotores

- Bridging cultural mediation between communities and the health care system;
- Providing culturally appropriate and accessible health education and information, often by using popular education methods;
- Assuring that people get the services they need;
- Providing informal counseling and social support;
- Advocating for individuals and communities within the health and social service systems;
- Providing direct services (such as basic first aid) and administering health screening tests; and
- Building individual and community capacity.

Wiggins & Borbon 1998
The evidence base for promotores

- A 6-month self-management program for patients with chronic disease who worked with lay health instructors resulted in improved health behaviors, improved health status, and fewer hospitalizations compared with usual care (Lorig et al. 1999).
- 44 clients with diabetes in St. Louis, Missouri, who accepted a home health aide to support their self-care efforts for 18 months showed improved glycemic control and attendance at eye and diabetes clinic visits, and fewer emergency room visits compared with a control group (Hopper, Miller, Birge, & Swift 1984).
- Hispanic clients who were assigned to a community health worker intervention group were more likely than those who were not to complete their diabetes education programs (Corkery, Palmer, Foley, Schecter, Frisher, & Roman.1997; Brown & Harris 1995).
- After 2 years, African American patients with diabetes randomized to an integrated CHW and nurse case manager group had greater declines after 2 years in A1C values, cholesterol, triglycerides, and diastolic blood pressure than did a routine-care group or those led solely by CHWs or nurse case managers (Gary, Bone, Hill, Levine, McGuire, Saudek, & Brancati, 2003).
- Compared with a control group, Brazilian community members working with CHWs, had improved A1C values. (Costa de Forti 2000) The curriculum used to train the CHWs was based on that developed by the New Mexico Diabetes Prevention and Control Program.
- The work of community health representatives among American Indians (Griffin, Gilliland, Perez & Carter 1999) and community health aides in Alaska Native communities (Mayer, Brown, & Kelly 1998) in accomplishing the diabetes program goals has also been noted.

(CDC.gov)
Obesity appears to spread through social ties

A person's chances of becoming obese increased by 57% if he or she had a friend who became obese in a given interval

Among pairs of adult siblings, if one sibling became obese, the chance that the other would become obese increased by 40%
If one spouse became obese, the likelihood that the other spouse would become obese increased by 37%.

These effects were not seen among neighbors in the immediate geographic location. Persons of the same sex had relatively greater influence on each other than those of the opposite sex.

These findings have implications for clinical and community interventions.
What Factors Contribute to Racial and Ethnic Health Disparities

- Socioeconomic status
- Residential segregation and environmental living conditions
- Occupational risks/exposures
- Health risk and health seeking behavior
- Differences in access to care
- Differences in health care quality
- Low health literacy

Smedley, 7/21/09
The clinical context
Clinical preventive services utilization

- Colorectal cancer screening
- Breast cancer screening
- Cervical cancer screening
## Colorectal Cancer Screening in Adults 50+

<table>
<thead>
<tr>
<th>Population</th>
<th>% Up to Date with Any Recommended Screening Method (2005)</th>
<th>Lives Saved Annually if % Up to Date with Screening Increased to 90%</th>
<th>Lives Saved Annually Per 100,000 If % Up to Date with Screening Increased to 90%</th>
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<tbody>
<tr>
<td>White only</td>
<td>51%</td>
<td>11,100</td>
<td>17</td>
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<tr>
<td>Black only</td>
<td>42%</td>
<td>1,800</td>
<td>26</td>
</tr>
<tr>
<td>Hispanic</td>
<td>31%</td>
<td>700</td>
<td>15</td>
</tr>
<tr>
<td>Asian only</td>
<td>31%</td>
<td>330</td>
<td>15</td>
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## Breast Cancer Screening in Women 40+

### HEALTH IMPACT

<table>
<thead>
<tr>
<th>Population</th>
<th>% Screened with Mammography in Past 2 Years (2005)</th>
<th>Lives Saved Annually If % Screened in Past 2 Years Increased to 90%</th>
<th>Lives Saved Annually Per 100,000 If % Screened in Past 2 Years Increased to 90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White only</td>
<td>69%</td>
<td>2,950</td>
<td>10</td>
</tr>
<tr>
<td>Black only</td>
<td>65%</td>
<td>500</td>
<td>14</td>
</tr>
<tr>
<td>Hispanic</td>
<td>59%</td>
<td>190</td>
<td>8</td>
</tr>
<tr>
<td>Asian only</td>
<td>55%</td>
<td>90</td>
<td>8</td>
</tr>
</tbody>
</table>
# Cervical Cancer Screening Among Women 18-64

<table>
<thead>
<tr>
<th>Population</th>
<th>% Screened in Past 3 Years (2005)</th>
<th>Lives Saved Annually If % Screened in Past 3 Years Increased to 90%</th>
<th>Lives Saved Per 100,000 Annually If % Screened in Past 3 Years Increased to 90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White only</td>
<td>86%</td>
<td>328</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Black only</strong></td>
<td>84%</td>
<td>125</td>
<td><strong>1.2</strong></td>
</tr>
<tr>
<td>Hispanic</td>
<td>76%</td>
<td>107</td>
<td><strong>1.1</strong></td>
</tr>
<tr>
<td>Asian only</td>
<td>64%</td>
<td>46</td>
<td><strong>1.3</strong></td>
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Why Don’t More People Use Preventive Care?

Barriers Facing Patients

• High out-of-pocket costs which equals low demand
• No regular source of health care or “medical home”
• **Low health literacy**
  • Unawareness of the needed preventive services
  • Miscalculation of risk of disease
  • Uncertainty about preventive services’ effectiveness
Socioeconomic and cultural influences play a role in health disparities, and shape how patients perceive risk as well as their motivation and ability to adhere to risk reducing recommendations.
Why Don’t More People Use Preventive Care?

Health System Barriers

• Providers not using systems proven to increase delivery

• Limited investment in a prevention-oriented health care workforce

• Cultural and linguistic ineffectiveness

• Inadequate reimbursement

• Too many services and too little time
Physician biases, cultural insensitivity, and inadequate communication skills contribute to disparities.

In a recent study:

- Only 20% of physicians had received significant cultural competency training.
- 24% had received NO training.
- 4 in 10 felt highly knowledgeable about socio-cultural and demographic characteristics of diverse groups

AHA
Framework on Population Health . . . (adaptation)

**Target Population**
- Large and general
- Small and specific

**Social and Environmental Conditions Favorable to Health**
- Health Promoting Behavioral Patterns
- Low Population Risk
- Low Disease Occurrence
- Full Functional Capacity
- Good Quality Of Life Until Death

**Approaches to Intervention**
- Behavior Change
- Risk Factor Detection And Control
- Acute Case Management/Treatment
- Long-term Case Management/Rehabilitation
- End-of-Life Care

**Unfavorable Social and Environmental Conditions**
- Adverse Behavioral Patterns
- Major Risk Factors
- Disease Occurrence 1st Event
- Poor Health Status/Disability
- Fatal Complications/Decompensation

**The Present Reality**

**A Vision of the Future**
Achieving Health Equity will Require Non-clinical Strategies

- Improve coordination of relevant agencies and organizations whose activities address determinants of health (education, housing, agriculture, employment, health)
- Finding ways to increase the availability of healthy, affordable food in underserved communities (encouraging major grocery chains and farmers markets to locate in such communities)
- Promoting community level interventions for health promotion (tobacco control programs and exercise initiatives)
- School-based strategies to improve graduation rates and reverse obesity trends
- Person-centered strategies to improve health literacy

(Smedley, Health Affairs)
Achieving Health Equity will also Require Clinical Strategies

- Access to affordable insurance and medical care
  - Insurance ≠ access to medical care
  - But it helps
- Equitable delivery of culturally considerate, compassionate, competent care
- Improving health literacy
The Consequences of Misplaced Priorities

To maximize health, we should pursue interventions in proportion to their ability to improve outcomes

- Choosing effective services (appropriate use of things that work vs. overuse of things that don’t)
- Delivering care (services delivery system improvements vs. biomedical advances)
- Preventing disease (tobacco cessation versus b-blockers)
- Fostering social change (educational attainment versus medical advances)

Woolf, JAMA, V.297,#5
To achieve health equity, we should pursue interventions in proportion to their ability to affect the determinants of health

1. Fostering social change (educational attainment versus medical advances)
2. Preventing disease (tobacco cessation versus b-blockers)
3. Delivering care (services delivery system improvements vs. biomedical advances)
4. Choosing effective services (appropriate use of things that work vs. overuse of things that don’t)

Woolf, JAMA, V.297,#5
True health reform => Healthy People

Health equity as a core principle

- Optimal health – social determinants addressed
  - Graduation from high school as a health objective
- Policies and environmental changes that promote health and health equity
- Access to culturally considerate, compassionate, competent care
- Elimination of health care disparities - attention to health literacy