Health Literacy

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

To be health literate implies a person possesses the knowledge needed to be competent in self-managing his/her health.
Research on the Impact of Low Health Literacy on Health Status and Clinical Outcomes

Low health literacy:

- Associated with higher mortality rates within a Medicare managed care setting. (Baker, 2007)
- Report poorer health status and are less likely to use preventative care. (Nielson-Bohlman, 2004)
- More likely to be hospitalized and have bad disease outcomes. (Baker, 2002) and (Schillinger, 2002)
- Less likely to understand medical labels and instructions and take medicines correctly. (Bennett, 2008)
- Worse glycemic control and higher rates of retinopathy among patients with Type 2 diabetes. (Schillinger, 2002)

Research Findings on the Impact of Low Health Literacy on Economic Outcomes

Largest health literacy to medical costs study to date, involving 92,000 vets

Medical costs per veteran with inadequate health literacy: $31,581
Medical costs per veteran with adequate health literacy: $17,033
Health literacy is the single strongest determinant of health status, wellbeing, life expectancy and how much health care a person will consume in a lifetime.

Overall Health Literacy Levels in the U.S.

Inadequate health literacy is prevalent in the U.S.

1. The clinical and economic impacts of health literacy are profound
2. Inadequate health literacy is prevalent

The overlooked, undervalued remedy…

So, why aren’t the policymakers and politicians in Washington, DC, who are attempting the repeal/replace/reform Obamacare, ignoring health literacy as a means to make healthcare affordable so everyone can have coverage?

Three reasons health literacy is overlooked and undervalued…

1. The impacts of health literacy are not well known
2. It seems too simplistic
3. Viable health illiteracy solutions are non-existent
The importance of health literacy is only now beginning to be recognized…

Ontario Ministry of Health Booth
HealthAchieve Conference

Health literacy solutions lack viability…

The CMS, CDC, IOM and NIH recommended solutions to improve health literacy:
1. Doctors should talk more slowly and use smaller words
2. Doctors should practice the speak-back method (repeat after me)
3. Doctors should be taught (learn) how to be better communicators and educators
4. Written instructions need to be composed in understandable, common language
5. Health literacy (as opposed to physical education) should be taught in schools
Poor doctor-patient communications…

The clinic setting is not conducive for improving health literacy

The State of Oklahoma Mutual Accountability Program Pilot
A viable solution for improving health literacy

Trilateral Health Accountability Model™

Combines human factors and systems engineering with web-technology and an array of social sciences to lower overall medical costs in a normally distributed population as a result of motivating patients to be healthier and motivating providers to practice better care in a manner that dignifies both parties ("Triple Aim").

THAM accomplishes this primary objective by tapping into the doctor-patient relationship to promote health literacy and encourage compliance.

Behavioral science and methods of improving health literacy incorporated in the Trilateral Health Accountability Model™

When people know the "how" and "why," they are more empowered and motivated to comply with recommended treatments and adopt healthy behaviors. Behavioral science describes this as the:

“Knowledge-Adherence Response”

THAM combines incentives, knowledge testing and what is called “Information Therapy” to improve health literacy and achieve the knowledge-adherence response.
Information Therapy

Information therapy is defined as providing the patient the right information at the right time, so the he/she can make an informed decision.

It is symbolized as:

\[ I_x \]

\[ I_x \] is a registered trademark of the eHealth Initiative

Another important behavioral science component of the Trilateral Health Accountability Model

The Hawthorne effect is a psychological phenomenon that produces an improvement in human behavior or performance as a result of increased attention from superiors or persons in positions of authority and trust.

In all cases, observed individuals behave or perform better than unsupervised individuals for a limited time if they suspect or know about the observation.
Confirming the Hawthorne Effect in the doctor-patient relationship

Doctor-Patient Relationship Influences Patient Engagement

Release Date: November 29, 2011 | By Valerie DeBenedette, Contributing Writer
Research Source: Center for Advancing Health

Researchers asked 8,140 people in the U.S. with chronic illnesses about their experiences with their physicians, as well as about their socioeconomic status, overall health and how they make use of health services.

Patients who perceived their physicians were involved in their care were more likely to monitor their blood pressure, exercise five days a week and adhere to medication regimens, among other healthy behaviors.
Physicians are compensated with each office visit for accessing the program’s website to:

1. Declare adherence or provide reason for non-adherence to a treatment guideline;
2. Prescribe educational material to the patient as “homework” (information therapy - Ix®)

Takes less than a minute, making participation in the Program one of the most lucrative services rendered in clinic.

Patients earn financial reward by accessing the program’s website, in response to the information therapy prescription letter sent to their home after each office visit, to:

1. Read the prescribed educational article;
2. Pass a test to demonstrate their understanding (open-book);
3. Declare their adherence or provide a reason for non-adherence;
4. Agree to allow their physician to review;
5. Rate their physician’s performance.

“Learn to earn” Program creates checks and balances between doctors and patients, called “mutual accountability,” that drives better outcomes.
The Mutual Accountability/Information Therapy Program works because...

1. Patients don’t want their doctors to think they are health illiterate and non-compliant
2. Doctors don’t want their patients to think they practice substandard care
3. Health literacy and the Hawthorne Effect causes an improvement in medication adherence and other types of patient compliance
4. Service and image psychology causes healthcare providers to improve their performance
5. Hospitalizations and emergency room visits decline
6. Patient accountability relieves some degree of defensive medicine
7. Cost are contained to the point a return on investment is realized by the plan sponsor

Solving the “Triple Aim”
Better Health - Better Healthcare - Lower Costs

Measuring How Well the Program Works
Trial results and independent analyses
Independent confirmation of program’s effectiveness

1. The Oklahoma Trial - Over 4 years, the City of Duncan:
   • Realized a savings of between $3.1 and $17.7 for each $1 invested in the MedEncentive Program.

2. The Kansas Trial - In 2½ years at the Wichita Clinic:
   • Office visits increased 13%
   • Medication adherence reported at 94%
   • Hospitalizations decreased 55%

3. The Washington Trial - Over 3 years at Lourdes Health System:
   • Medication consumption increased
   • Hospitalizations decreased
   • 12:1 ROI

4. The Pennsylvania Trial – Over 3 years at the Loomis Company:
   • Medication consumption increased
   • Hospitalizations decreased
   • 15:1 ROI

The State of Oklahoma Mutual Accountability Program Pilot
In 2010-11, legislators interested in controlling healthcare costs, asked us if we’d be interested in subjecting our program to the scrutiny of a public demonstration.

A bill was drafted mandating a statistically significant, 3-year pilot to test the cost containment capabilities of a MAP in the HealthChoice population.

HB1062 passed by the Oklahoma Senate 46-0 and the House 86-9.

A two and a half year procurement process ensued, resulting in a 500-page contract.

Since its launch on January 1, 2014, the pilot has succeeded in every aspect, in spite of...

The Oklahoma pilot experimental design…
A randomized control trial (RCT)

1. Two matched groups, one covered by the program, one not covered.
2. Covered group was comprised of 41 state agencies, school districts and local governments, concentrated in 7 counties.
3. If, in an apples to apples comparison of the two groups by independent experts, the group covered by the program has lower per capita costs, inclusive of the program, then program would be judged effective.
conducted the largest health improvement/cost containment (“triple aim”) experiment ever attempted in the U.S.

The State of Oklahoma and MedEncentive

Metric that predicts success

- Based on our 10 years of experience, we have learned that physician inclusion is essential, but physician participation is not critical to achieving a return on investment.

- The strongest determinant of a return on investment is the Patient Success Rate

- In previous trials, a Patient Success Rate of 55% or greater produced a ROI in each instance

1 Patient Success Rate = the total number of information therapy sessions + the total number of office visits incurred by the covered population
Actual Provider Successes

Information Therapy Program
Oklahoma Providers' Annual Success Rate by Quarter

The 2015 success rate represents 12,000 information therapy sessions completed by providers in Oklahoma.

Actual Provider Successes

Comments about provider participation

- The goal is better health and healthcare that lowers costs
- Provider participation doubled during the pilot, and is more than adequate to achieve the cost containment goal
- In previous installations, patient participation is most closely correlated to cost containment
- Provider inclusion is essential, which is different than participation
- Provider participation is evolutionary
- There are over 800 providers enrolled in Oklahoma
- There are scores of providers who have volunteered to be program advocates
- Stillwater Medical Center is prototype of engaging a medical community
# Provider Success Rate by Oklahoma Health System and Medical Group – June 2016 YTD

<table>
<thead>
<tr>
<th>Health System</th>
<th>Ix Successes</th>
<th>Misses</th>
<th>Total Provider Successes and Misses</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stillwater Medical Center</td>
<td>705</td>
<td>606</td>
<td>1,311</td>
<td>53.78%</td>
</tr>
<tr>
<td>Duncan Regional Hospital</td>
<td>131</td>
<td>139</td>
<td>270</td>
<td>48.52%</td>
</tr>
<tr>
<td>St. Mary's Regional Medical Center</td>
<td>82</td>
<td>201</td>
<td>283</td>
<td>28.98%</td>
</tr>
<tr>
<td>INTEGRIS Health</td>
<td>192</td>
<td>1,209</td>
<td>1,401</td>
<td>13.14%</td>
</tr>
<tr>
<td>Payne County Hospital</td>
<td>27</td>
<td>185</td>
<td>212</td>
<td>11.74%</td>
</tr>
<tr>
<td>Norman Regional Health System</td>
<td>25</td>
<td>182</td>
<td>207</td>
<td>12.08%</td>
</tr>
<tr>
<td>Mercy - Oklahoma</td>
<td>60</td>
<td>1,212</td>
<td>1,272</td>
<td>4.72%</td>
</tr>
<tr>
<td>SSM Health - St. Anthony - Oklahoma</td>
<td>21</td>
<td>413</td>
<td>434</td>
<td>4.43%</td>
</tr>
<tr>
<td>St. Francis Health System</td>
<td>1</td>
<td>99</td>
<td>100</td>
<td>1.00%</td>
</tr>
<tr>
<td>NS Physicians</td>
<td>0</td>
<td>440</td>
<td>440</td>
<td>0.00%</td>
</tr>
<tr>
<td>Comanche County Memorial Hospital</td>
<td>0</td>
<td>26</td>
<td>26</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,244</strong></td>
<td><strong>4,852</strong></td>
<td><strong>6,096</strong></td>
<td><strong>20.41%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical Group</th>
<th>Ix Successes</th>
<th>Misses</th>
<th>Total Provider Successes and Misses</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norman Pediatric Associates, PC</td>
<td>395</td>
<td>0</td>
<td>395</td>
<td>100.00%</td>
</tr>
<tr>
<td>Norman Anesthesia Providers</td>
<td>30</td>
<td>0</td>
<td>30</td>
<td>100.00%</td>
</tr>
<tr>
<td>Canadian Valley Family Care</td>
<td>162</td>
<td>9</td>
<td>171</td>
<td>95.29%</td>
</tr>
<tr>
<td>Mustang Urgent Care</td>
<td>1,190</td>
<td>118</td>
<td>1,308</td>
<td>91.19%</td>
</tr>
<tr>
<td>Stillwater Family Care</td>
<td>751</td>
<td>81</td>
<td>832</td>
<td>90.26%</td>
</tr>
<tr>
<td>Canadian Valley Clinic Inc.</td>
<td>47</td>
<td>15</td>
<td>62</td>
<td>81.33%</td>
</tr>
<tr>
<td>Ill of Norman LLC</td>
<td>80</td>
<td>24</td>
<td>104</td>
<td>76.92%</td>
</tr>
<tr>
<td>Oklahoma City ENT Clinic</td>
<td>21</td>
<td>19</td>
<td>40</td>
<td>52.74%</td>
</tr>
<tr>
<td>Furlong Walters Medical Associates</td>
<td>93</td>
<td>41</td>
<td>134</td>
<td>69.23%</td>
</tr>
<tr>
<td>Urgent Medical LLC – Duncan</td>
<td>93</td>
<td>106</td>
<td>209</td>
<td>44.26%</td>
</tr>
<tr>
<td>TPG OB/GYN</td>
<td>17</td>
<td>28</td>
<td>45</td>
<td>44.69%</td>
</tr>
<tr>
<td>Norman Urology Associates</td>
<td>39</td>
<td>40</td>
<td>80</td>
<td>44.32%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>2,912</strong></td>
<td><strong>466</strong></td>
<td><strong>3,378</strong></td>
<td><strong>86.20%</strong></td>
</tr>
</tbody>
</table>

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## New Provider Website Advocacy Designation

- **We need your help...**
- **Information Therapy Session Successfully Completed**
- **Health providers, please review the following**
  - **patients:**
    - Information providers and covered services
  - **Health providers:**
    - Information providers and covered services
  - **Other services:**
    - Information providers and covered services
- **Yes, I would like to be listed as a provider advocate for the program's purpose and demographics.**
  - **If you have a different website, please share us with what you think about the program and what we can do to make it better.**
  - **If you have any questions, you can contact the program administrator at 1-800-555-5555.**
  - **Thank you!**

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MedEncentive has retained the Validation Institute to confirm claims of healthcare cost containment efficacy

1. Not-for-profit joint venture of GE and Intel
2. Formed to establish truth in population health claims after the North Carolina patient-centered medical home fiasco
3. Involves industry watchdog, Al Lewis, who wrote book about falsifying results in the field of healthcare cost containment, entitled: "Why Nobody Believes the Numbers"
4. Issue with OMES-EGID regarding access to data and proper evaluation
State of Oklahoma Pilot Preliminary 2014 Results

Group covered by the program demonstrated a 10.5% and 4.7% greater decline in hospitalizations and emergency room visits per 1,000 compared to the control group in the pilot’s first year.

![Information Therapy Program Hospitalizations per 1,000 Preliminary 2014 Results Pre- and Post-Implementation Trends](image1)

![Information Therapy Program Emergency Room Visits per 1,000 Preliminary 2014 Results Pre- and Post-Implementation Trends](image2)

State of Oklahoma Pilot 2014 Preliminary Results

(pending data access to test for confidence interval and attribution)

Group covered by program experienced 2.5% decline in total PMPY costs compared to the control group, translating to a 2.4:1 return on investment in the first year of the pilot.

![Information Therapy Program Return on Investment Pilot’s Projected First-Year (2014) Result](image3)
Patients, doctors, insurers, employers love the program

"After analyzing the results from MedEncentive’s trials, we are impressed with the firm’s approach to mitigating healthcare costs by promoting health. Because of our confidence in the MedEncentive Program, we will provide a discount on Sun Life Stop-Loss premium to customers who participate in the program.”
Scott Beliveau, Sun Life Financial Stop-Loss Vice President

While we’ve saved millions of dollars over the years with our wellness program and MedEncentive, the most important attributes about MedEncentive are how much our employees appreciate the program, how simple it is to maintain and how very little administrative support is required. It has been a win for our organization, our employees and our physicians.”
Shannon Douglas, Compensation/Benefits Manager | Human Resources Lourdes Health Network

"We are very pleased with how easy the MedEncentive Program was to implement and how very little time is needed in support of this program. Our employees like the program and participation has reached over 65% within 6 months with very little effort on our part.”
Erica Pridy, Benefits Director Heyco Products, Inc. Toms River, New Jersey

lots of patient testimonials...

"This is great! I like the information and getting paid to take better care of myself is the BEST idea ever!" - Elayne (Patient)
"This program is easy to use! I have found the information relevant to my health care needs. The articles are easy to read and the questionnaire is quick to fill out. I appreciate this opportunity to earn some cash!" - Rhett (Patient)
"This is a wonderful program. One of very few targeted to personalize my healthcare & physician relationship. I will continue to take advantage of this program as long as it is offered." - Rita (Patient)

"MedEncentive is easy and quick to use. I think it serves as a good second opinion for me and provides valuable information to my patients. And to top it off, the program increases my reimbursement and my patients are very motivated to get their co-pays back.” - Todd Clapp, M.D. | Oklahoma Internal Medicine and Pediatrics, INTEGRIS Health

Lots of patient testimonials...

"This is great! I like the information and getting paid to take better care of myself is the BEST idea ever!" - Elayne
April 24, 2014

"This is a wonderful program. One of very few targeted to personalize my healthcare & physician relationship. I will continue to take advantage of this program as long as it is offered.” - Rita
May 2, 2015

"This program is easy to use! I have found the information relevant to my health care needs. The articles are easy to read and the questionnaire is quick to fill out. I appreciate this opportunity to earn some cash!” - Rhett
May 25, 2016
What physician leaders say...

“This is a unique tool to improve a critical component of health care - patient compliance”

Steve Connery, M.D.
Family Physician
President of the Norman Physician Hospital Organization
Norman, Oklahoma

“I have found the program useful in increasing patient engagement, and think ultimately will lead to better health outcomes. It is user friendly and minimally disruptive to my normal workflow.”

Jesse R. Campbell, M.D.
Internal Medicine, Pediatrics
Medical Director, Mercy Physician Group
Edmond, Oklahoma

Program is extremely popular – thousands of petitions from state employees and teachers seeking a continuation of the pilot…
Summary

1. The impacts of health literacy are profound
2. Inadequate health literacy is prevalent
3. Health literacy, as a serious remedy for the country’s healthcare crisis, is overlooked because viable solutions are scarce
4. There is a promising innovation

2017 OAFP Scientific Assembly

Patient Health Literacy: Recent Studies on Association of Health Status & Costs…
…plus the latest innovations

Q&A
Jeff Greene
jgreene@medencentive.com
Overall Health Literacy Levels in the U.S.

<table>
<thead>
<tr>
<th>Health Literacy Level</th>
<th>Task Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficient</td>
<td>Using a table, calculate an employee’s share of health insurance costs for a year.</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Read instructions on a prescription label, and determine what time a person can take the medication.</td>
</tr>
<tr>
<td>Basic</td>
<td>Read a pamphlet, and give two reasons a person with no symptoms should be tested for a disease.</td>
</tr>
<tr>
<td>Below Basic</td>
<td>Read a set of short instructions, and identify what is permissible to drink before a medical test.</td>
</tr>
</tbody>
</table>

Only 1 in 9 Americans have proficient health literacy


The Key to Health Care Cost Containment

No health care cost containment solution can be sustained without balancing the interests of the essential stakeholders; like a three-legged stool

Consumers/Patients

Employers/Insurers

(plan sponsor/risk-bearing entity)

Alignment-of-interests to create a win-win-win proposition

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The employer and insurer sponsored patient accountability approach

Examples of this approach include: 1) wellness and prevention; 2) high-deductible consumer-driven health care; 3) disease/care management

Consumers/ Patients

$ - Incentives offered to consumers independent of provider involvement

Employers/Insurers
(plan sponsor/risk-bearing entity)

Physicians

Result: requires large financial incentives, which impedes/prevents ROI
The government and insurer sponsored provider accountability approach

Examples of this approach include: 1) capitated HMO; 2) Accountable Care Organization (ACO); 3) Episodic care payments; 4) patient-centered medical home (PCMH); 5) P4P

- Incentives offered to providers independent of patient involvement

Consumers/Patients

Employers/Insurers
(plan sponsor/risk-bearing entity)

Physicians

Result: limited to no proof that this approach produces a ROI
The government and insurer sponsored provider accountability approach

Examples of this approach include: 1) capitated HMO; 2) Accountable Care Organization (ACO); 3) Episodic care payments; 4) patient-centered medical home (PCMH); 5) P4P

Harvard Professor Clayton Christensen says:

“In other words, ACOs hold caregivers accountable without requiring patient accountability. How can this work?”

Employers/Insurers

(plan sponsor/risk-bearing entity)

Result: limited to no proof that this approach produces a ROI

The Trilateral Health Accountability Model (THAM)

- U.S. Patent 7,925,519 issued April 2011, expires June 30, 2027
- U.S. Patent 9,171,285 issued October 27, 2015, expires June 30, 2027
- Canadian Patent 2,729,553 issued April 26, 2017, expires June 30, 2028
- File U.S. Pat. Appl. No. 14/923,043 on October 26, 2015 to prevent infringement of original U.S. patents
- European Union Pat. Appl. No. 08772228.6 - was abandoned, but replacement is being filed
- Additional original and protective patent applications are anticipated
The Trilateral Health Accountability Model™
Solving the Three-part Aim with a web-based system that combines three powerful motivators to align the interests of the three key stakeholders

Combining Three Essential Motivators
- Knowledge (Information Therapy)
- Financial Rewards
- Interpersonal Relationships (Mutual Accountability)

Solving the Three-part Aim
- Better Health
- Lower Cost
- Better Health Care

Triangulating the Interests
- Patients
- Insurers & Employers
- Clinicians

Step 1 – Physicians are offered $15 per office visit for one minute to access website via Internet or EHR to enter patient’s diagnosis, and…

Doctor enters patient’s diagnosis code or description – system can also integrate with EHRs
The Information Therapy (Ix) Program Basics

- First step – Tell the patient whether or not an evidence-based guideline fits

Anti-cookbook medicine feature

Step 2 - ...once online, they simply select an article for the patient as “homework.” This is called “information therapy.”
Step 3 – Patients receive a letter or email at home after each office visit offering them a refund of $15 or more for accessing the website to complete an information therapy prescription.

Mention the doctor’s name, date of service, and amount of the reward.

Step 4 – Once online, patients read the prescribed article, and then...

Articles are supplied by top content suppliers, like Healthwise.
Step 5 – …take an “open book” test to assess and document the patients’ understanding of how to self-manage their health or medical condition.

Questions that pertain to you and this article

1. If your doctor prescribed medication for treating your high blood pressure, and you do not have any symptoms, is it okay to stop taking your medication?
   - Yes
   - No

2. High blood pressure is the same as:
   - Hypertension
   - Hypertension
   - Headache

3. According to the article, the path that leads to successful lifestyle change includes:
   - Healing your health concerns for making a change
   - Following the path of least resistance
   - Setting long-term and short-term goals that you can measure easily
   - Be a part of a new family
   - Thinking about what might get in your way, and prepare for slip-ups
   - Getting support from your family, your doctor, and your friends

4. Uncontrolled high blood pressure:
   - is not that serious
   - can lead to back spasms

Questions are true-false and multiple choice.

Questions are focused on actionable information.

Step 6 – Patients are then asked to declare their adherence to recommended treatments or provide a reason for non-adherence.

Responses indicating non-adherence prompt a series of questions to determine why the patient is choosing to be non-compliant.
Step 7 – Patients must then agree to allow their doctors to have access to their exam results and adherence declarations.

Having patients agree to share their test scores and adherence declarations with their physician adds another important motivator.

Step 8 – Finally, patients are asked to rate their doctor’s performance against what they have just learn.

Patients are asked, on a scale, to rate how consistent their doctor’s treatment was compared to what the patient just learned.