

Helping America's Veterans Meet Challenges in Diabetes Health Disparities Through Digital Communication

A summary of our multiple VA projects

Health Disparities & Social Justice Conference 2016

Presenters: Thomas Muscarello MS, PhD
muscarello@cs.depaul.edu
David Donohue MA
ddonohue9@gmail.com

Learning Goals Today

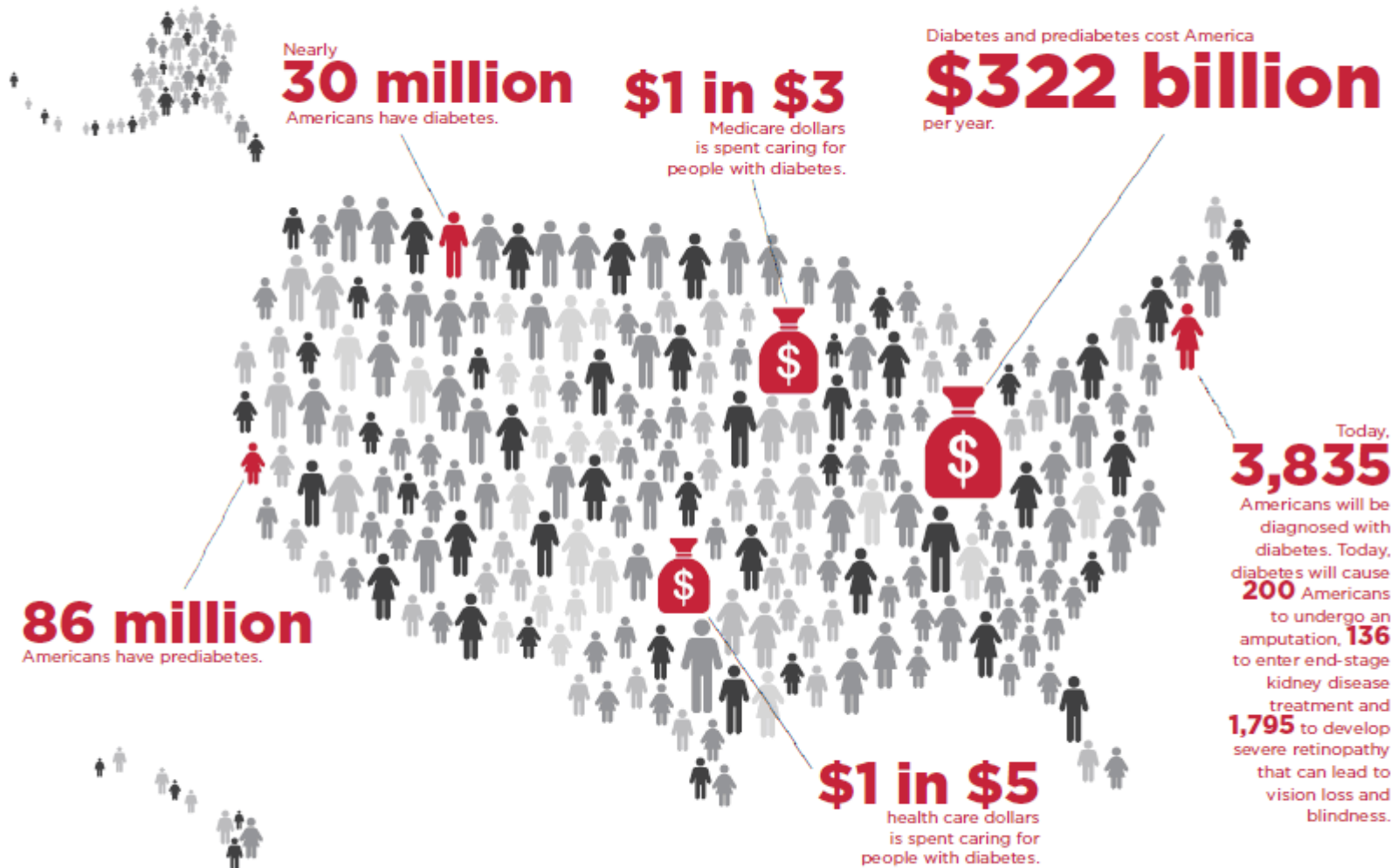
- Implications of low health literacy
- Effect of patient attitudes on self-management
- Importance of 3 vital measures or ABCs
 - HbA1c, Blood Pressure, Cholesterol

Our Focus: Communication & Health Literacy

How do we measure all of this?

Diabetes Care Tsunami

THE STAGGERING COSTS OF DIABETES IN AMERICA



Learn how to fight this costly disease at diabetes.org/congress



More Problems

- Obesity
 - 160 million obese and overweight
 - 75% of men
 - 60% of women
 - 30% of kids
- Poor Glycemic control
- Over 100 million US low health literate patients
- Poor Health Literacy affects the following
 - Engagement
 - Mindset
 - Lifestyle

Much of Health care Is “Sick Care”

- Bridging the Gap
 - Doctor – Patient Communication improvement leads to...
 - Patient Self Management improvement
- Work on Prevention
 - We must take care when not a “patient”
 - Many patients expect “fix” or magic bullet
- We must go from *Reactive* to *Proactive*
 - *From Fix to Prevent*

Conundrum

- What we want:
 - Proactive Care
 - Monitoring / Patient Engagement
 - Data & Information use
 - ***Personalized Medicine***
- Roadblocks to getting there:
 - Scalability Problems
 - Expense ROI? Or ROA?
 - Communication Breakdown
 - Crushing Patient Load

VA Specific Stats & Problems

Our Studies were conducted at
Captain James A. Lovell Federal Health Care Center, North Chicago, IL
with our main VA collaborators:
Dr. Tariq Hassan, MD Medical Director
George Lutz, PhD

VA Diabetes Prevalence

- 25% of Veterans suffer from Diabetes
- 70% in VA facilities are obese or overweight
- No exact estimate of pre-diabetics

VA Diabetes Aggravating Factors

- Lower income
- Age of patients
- Lack of access to quality diet
- Lifestyle/exercise
- 65% of *all* VA patients discard appointment information sheet
- Social & mental disparities, Homelessness
- Clinical aspects of service are still being investigated
 - Stress
 - Chemical exposure
 - Etc.

VA Care Crisis

- Staffing Shortage → Crushing Patient Load
 - 3800 doctors needed
 - 8700 nurses needed
- Crisis environment
 - Process breakdowns / Staffing turnover
 - Press
 - Congressional inquiries
 - Employee turnover
- Critical shortage of nurse educators
- 2 Endocrinology nurse educators : 5000 patients

Findings From Our Ongoing VA Studies

Multiple exploratory research studies over an 8 year period

Qualitative and Quantitative

Communication & Health Literacy - In clinicians' own words

What doctors, nurses and clinicians are saying:

- Patients hide their literacy levels.
- Need wording of diagnostics and meds in layman's terms.
- Patients have challenges understanding multiple meds and treatment routines.
- Patients want a silver bullet.
- Patients feel life is too complicated to take control.

Communication & Health Literacy - In the patients' own words

What patients are saying:

- Prefer verbal explanations and very simple written instructions.
- Have additional medical information sources & help available.
- Tell me what to do in simple, useful language.
- It is hard to change my lifestyle.
- Give me something that I can read quickly.
- Want friends & relatives as support.
- Communication is a *two way* street.

Diabetes Control Metrics

Diabetes Control Metrics

HbA1c

48% drop out rate or non-compliance in education programs at Lovell and across 153 VA health care centers

Over 700 High Risk patients (HbA1c > 9.0%)

52% of High Risk patients attended one-day self-management education seminar.

Overall HbA1c improvement of 1.13% after one year

High risk attendees showed a 3% improvement after one year.

Diabetes Control Metrics

HbA1c

48% drop out or are non-compliant in education programs at Lovell and across 153 VA health care centers

Over 700 High Risk patients (HbA1c > 9.0%)

52% of High Risk patients attended one-day self-management education seminar.

For Those Attendees:

Overall HbA1c improvement of 1.13% after one year

High risk attendees showed a 3% improvement after one year.

One of Our Proposed Solutions

One of Our Proposed Solutions

We borrow from:

Marketing (Behavioral Change)

Communication (Education)

Clustering Algorithms (Statistics & AI)

Psychology

Sociology & Cultural Anthropology (Social groupings)

We treat the individual, not the question, as the independent variable

Clinicians & Patient Attitudes

Key to matching and improving 2 way communication

Procedure:

1. Establish individual patient's level of **health literacy and comprehension**
2. Establish individual **patient's attitudes** to disease & management
3. Identify **patient attitudinal types**/groupings via factor rotation
4. Establish individual **clinician's attitudes** to disease & management
5. Identify **clinician attitudinal types**/groupings via factor rotation
6. Design **interventions & educational material** to Health Literacy level & attitudinal type of patient
7. **Match patient and clinician** by attitudes to care delivery

Health Literacy & Numeracy Measure: Newest Vital Sign

VA Patient Health Literacy using “Brief” test
Adequate = 83 %, Marginal = 12 %, Inadequate = 5 %

Newest vital sign (NVS)

Nutrition Facts	
Serving Size	½ cup
Servings per container	4
Amount per serving	
Calories	250
Fat Cal	120
%DV	
Total Fat 13g	20%
Sat Fat 9g	40%
Cholesterol 28mg	12%
Sodium 55mg	2%
Total Carbohydrate 30g	12%
Dietary Fiber 2g	
Sugars 23g	
Protein 4g	8%

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

READ TO SUBJECT: This information is on the back of a container of a pint of ice cream.

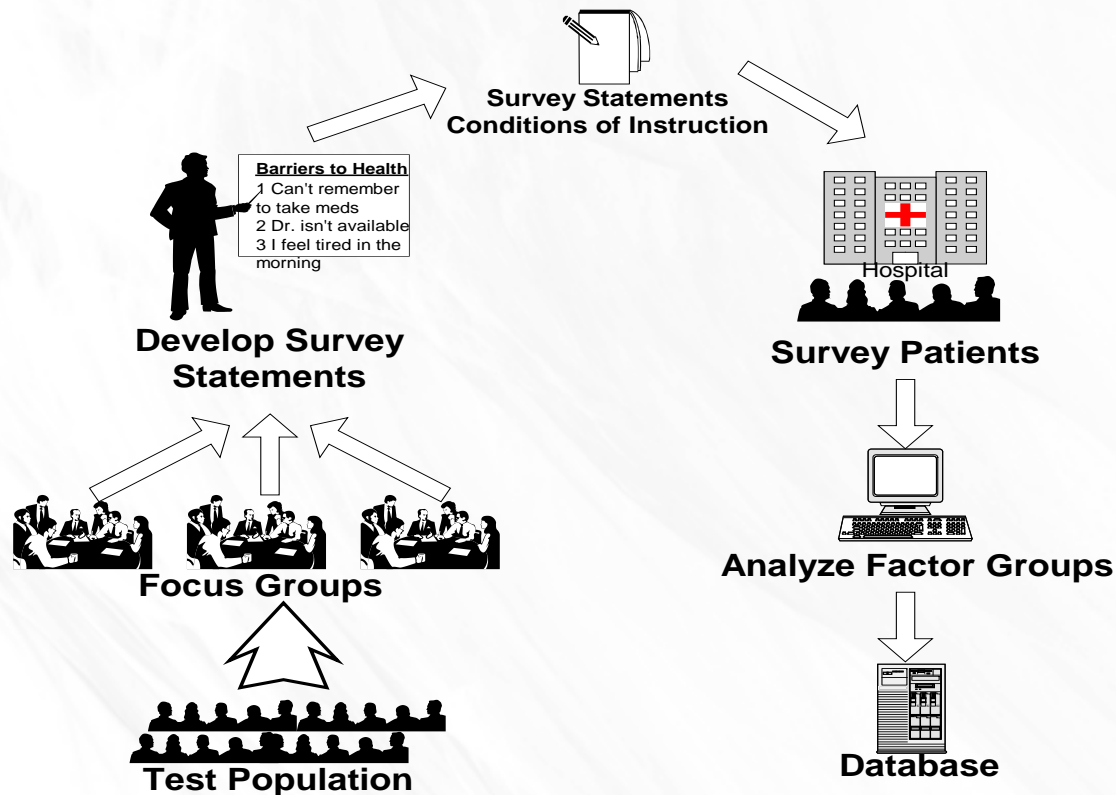
QUESTIONS

1. If you eat the entire container, how many calories will you eat?

Answer: 1,000

Weiss BD, et al. Quick assessment of literacy in primary care: the newest vital sign. Ann Fam Med 2005;3:51-22.

Attitudinal Measure: Survey & Factor Rotation



Content Strategy Tailoring Communications

Content Strategy

- Term became common in the late 1990s.
- It refers to the planning, development, and management of content in written or digital media.
- Focuses on how enterprises use stories and smart-data to communicate strategic information to important internal and external audiences.

What is Content Strategy?

- Communicating stories or information:
To all stakeholders (patients, family, clinicians, etc.)
To enhance strategic goals – prevention, wellness
Using credible, *understandable*, transparent media

Unless we reach **patients** with content that matters to them – *where, when* and *how* they want it – they won't engage with the content critical to their health.

We must understand:

What patients care about

What they will pay attention to

Three Major Challenges in Creating Effective Content

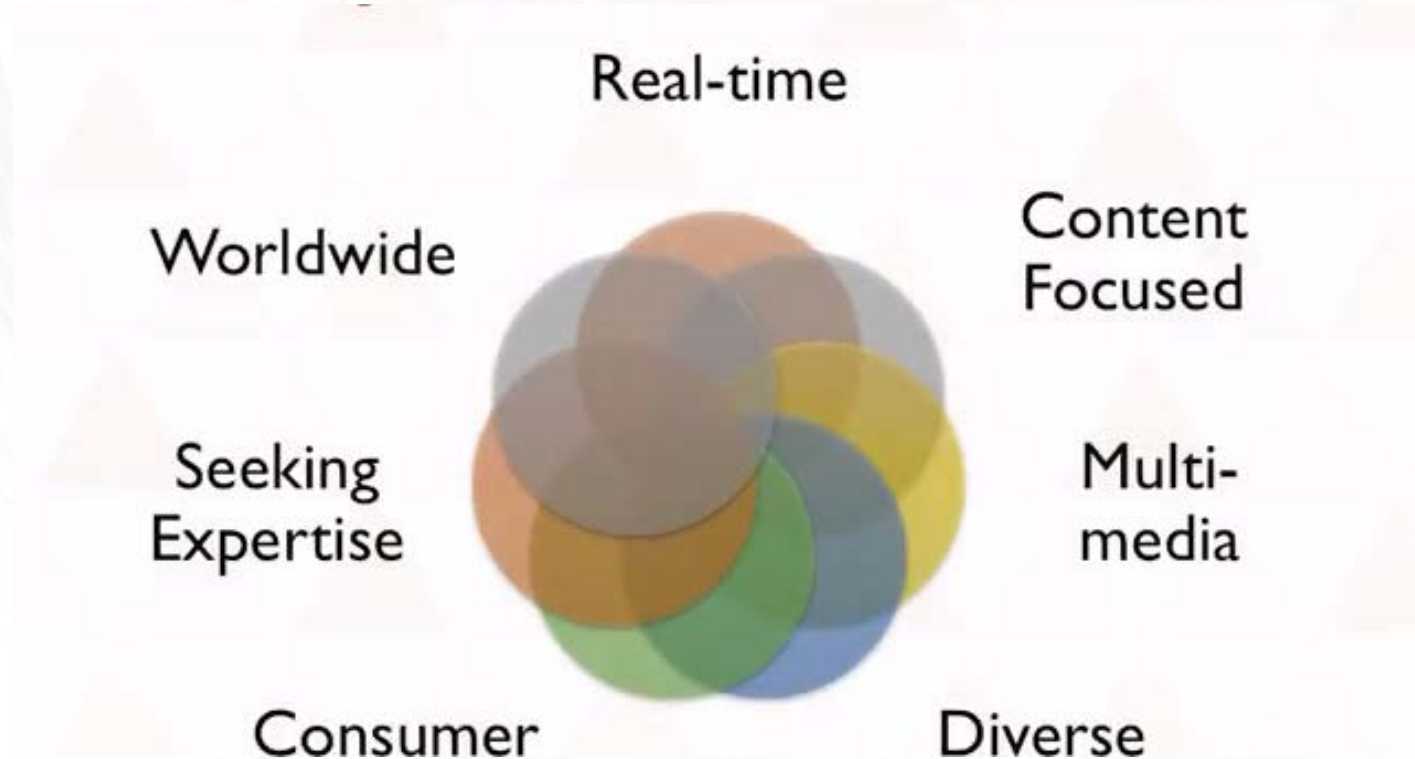
- 1) Global tidal wave of information rising exponentially?
Astronomically?**
- 2) We have only 1440 minutes in a day.
Not...One...More.**
- 3) In a complicated world people will give you their time
and attention if you give them what they want.**

©Credit: Picjumbo, <http://bit.ly/1MR8Rv0>

Consider today's digital landscape and design your content to be **MOBILE FIRST.**

Mobile First

Social Has Unique Characteristics



An effective content strategy answers these three questions

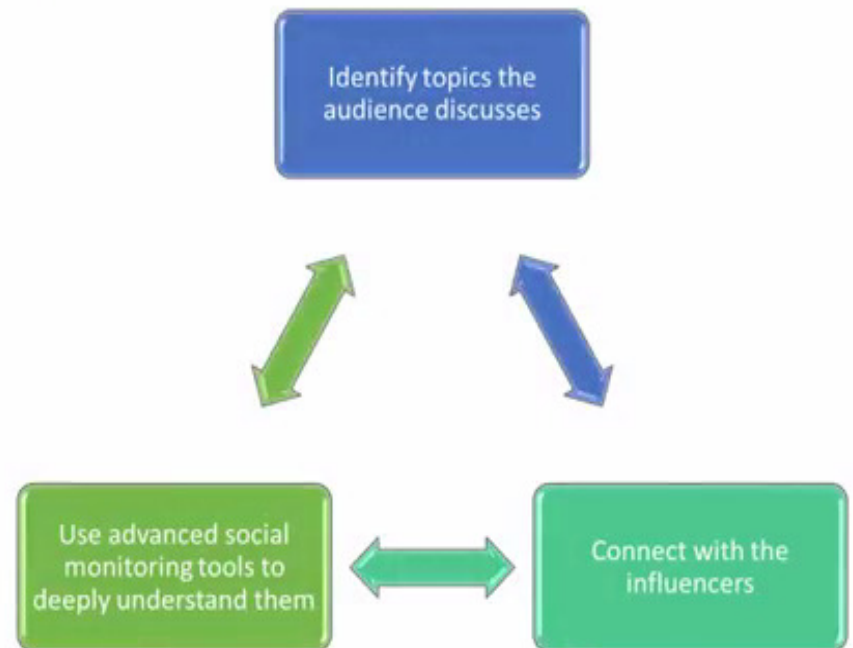
How will we *capture* value?

How will we *deliver* value?

How will we *create* value?



Knowledge of our audience defines the value they will receive.



We can accomplish this in several ways.

If our future is to be personalized or “precision” medicine then we should take patient ability, attitudes, and literacy into account in planning treatments.

“It is far more important to know what person the disease has than what disease the person has.”

– Hippocrates