



# Maternal Mortality through a Health Literacy Lens

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## Objectives:

Integrate Health Literacy  
Principles into  
Healthcare Education



- Define Service Learning and discuss its importance in health professional education.
- Define Health Literacy and discuss the principles integrated into the Service Learning pilot and Inter-professional education.
- Examine the methods used in this pilot study and analyze the pilot outcomes for application in other settings.





# Service Learning: Application in Health Professional Education



## **Service Learning:**

What is service learning?

- Incorporates community service with academic goals.
- Provides an enriching context for students to understand the social determinants of health.
- Recognizes civic and cultural diversity that explains real life/world situations.
- Uses reflection as a vehicle for cognitive growth and academic skills acquisition.



## **Benefits:**

What is the benefit for students and patients?

- Learners receive the benefit of reflecting on civic duty, intentionally caring for others and including others from diverse backgrounds.
- Teaches appreciation of the need to help minimize unintended harm to disadvantaged and vulnerable groups from a lack of education and understanding.









## **Projects:**

### **Spring and Fall 2018**

- Safe Baby Sleep
- Healthy Baby, Happy Mommy

### **Fall 2018 and Spring 2019**

- Maternal Mortality Through A Health Literacy Lens
- What about Mom? A Health Literacy Perspective to Address Maternal Mortality in the Postpartum Period



This is  
Unsafe.

**Reference:**

Moon RY; AAP Task Force on Sudden Infant Death Syndrome. SIDS and other sleep related infant deaths: Evidence Base for 2016 updated recommendations for a safe infant sleeping environment. *Pediatrics*, 2016;138(5):e20162940







# Safe Infant Sleep Education

Claire Bordeaux, Kenzi Dannelly, Emily Dodd, Murray Elms, Liza Gallagher, Danielle Hochhauser, Emily Kiolbassa, Emily McCarthy, Cami McCurdy, Caroline Muller, Peyton Porter, & Marie Stark, MSN, RNC-OB



Public Health Clinical Group 106 | Texas Christian University, Harris College of Nursing



## PURPOSE

As a clinical group, we provided education regarding safe sleep practices for infants in order to address the Healthy People 2020 goal of MICH-1.9. We targeted a community that has one of the highest infant mortality rates (IMR) in Tarrant County. As an incentive, we distributed Pack 'n Plays as well as appropriate infant care supplies to mothers who attended. We assessed the knowledge of the community through pre & post tests to ensure effective teaching.

## MOBILIZE

Effectively communicate & collaborate with stakeholders: Boys and Girls Club J A Cavile Branch, The Center for Prevention of Child Maltreatment at Cook Children's Medical Center, & UNTHSC Institute for Patient Safety



References upon request



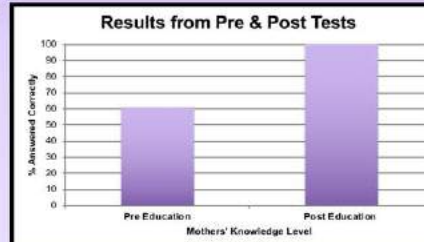
## PLAN & IMPLEMENTATION

1. Performed an extensive review of the literature to determine the zip code with the highest IMR in Tarrant County.
2. Assessed the 76105 zip code through stakeholder interviews & windshield surveys.
3. Met with various stakeholders in Fort Worth who are currently working to raise awareness & lower the IMR in Tarrant County.
4. Planned a safe sleep education event including: 15 minute presentation, interactive safe sleep activity, & a pre & post test to assess effective teaching.

## TRACKING & EVALUATION

**Goal:** TCU students gain a better understanding of safe sleep practices.  
**Outcome:** TCU students not only learned safe sleep practices, but gained a greater understanding for the need in our surrounding community in Tarrant County.

**Goal:** Host an educational event where 10 mothers attend from the 76105 community.  
**Outcome:** 17 mothers attended the event & completed the pre & post surveys, listened to the 15 minute presentation, completed the safe sleep activity, & received a Pack 'n Play & safe infant care supplies.



## RECOMMENDATIONS

- Continue this education event annually for new moms in the 76105 zip code.
- Reach out to neighboring schools & expand target population to high school & middle school students.
- Develop relationships with stakeholders & donors to provide safe sleep environments for mothers without a crib.



Mother Demographics	Number (%)
Mother < 25 years old	7 (54)
African American Mother	11 (85)
Mother has 12 <sup>th</sup> grade education or less	11 (85)
Mother does NOT have a crib at home	12 (92)



team leader -  
Scribe -  
Coordinator -  
time keeper -  
External Relations -  
Written Report  
Coordinator -  
Supply Manager -  
Budget Manager -  
Safety Manager -  
Media Manager -

- Reflect
- Choose Team Roles
- Assess
- Develop Partnerships
- Plan
- Implement
- Evaluate
- Recommend









## Healthy Baby Happy Mommy

Ashley Clayton, Oscar Corrales, Brad Davis, Rachelle Desrosiers, Dayton Emery, Rachel Freiburger, Sydnee Granger, Maia Oftedahl, Jessica Pulley, Ashley Shelton, Marie Stark, MSN, RNC-OB, Shawna Weldon



### PURPOSE

As a clinical group, we provided education regarding infant and maternal health in order to address Healthy People 2020 goals of MICH-1.9 and MICH-16. We hosted the event in the Stop Six Community in Tarrant County, which has one of the highest infant mortality rates in Texas. As an incentive, we distributed pack n plays, sleep sacks, and other maternal and infant care supplies to the mothers who attended. We assessed the knowledge of the community through pre and post-tests to ensure effective teaching.

### MOBILIZE

Effectively communicate & collaborate with stakeholders: Boys and Girls Club J A Caville Branch, Cook Children's, & Hope Supply Company.



### PLAN & IMPLEMENTATION

1. Performed an extensive review of the literature to determine the educational needs of mothers in the 76105 zip code, which has one of the highest infant mortality rates in Tarrant County.
2. Gathered donations of infant and maternal care supplies to give out at the event.
3. Connected with stakeholders in the community to gain knowledge about the needs of mothers in the Stop Six community.
4. Planned a safe infant & maternal educational event including three interactive teaching stations covering safe infant sleep, maternal health, and infant development, as well as a pre & post-test to assess effective teaching.

### RECOMMENDATIONS

1. Continue this educational event annually for mothers in the 76105 zip code
2. Reach out to neighboring schools & expand target population to high school moms
3. Develop relationships with stakeholders & donors throughout the semester and invite them to attend the event



### TRACKING & EVALUATION

**Goal:** The mothers who attend the event gain a better understanding of safe infant and maternal health practices.

**Outcome:** Mothers took a 5-question test before and after attending the event and the average score before the teaching was 70.3% and after the teaching was 82%.

**Goal:** Host an educational event where 30 mothers attend from the 76105 community.

**Outcome:** 19 mothers attended the educational event.

Mother Demographics	Number (%)
Mother <25 years old	5 (29%)
African American	16 (94%)
Less than 12th grade education	10 (58%)





# Partnerships:

- Texas Christian University
- Tarrant County Public Health
- Infant Health Network
- Boys and Girls Club JA Cavile Branch
- Cook Children's Center for Prevention of Child Maltreatment
- University of North Texas Health Science Center (UNTHSC)
- Baylor Scott and White Baylor All Saints
- John Peter Smith Hospital Educator
- Community Health Workers (UNTHSC)
- Tarrant Baptist Association





## Benefits:

What is the benefit of collaboration with community partners?



- Encourages relevant, meaningful projects
- Engages students in advocacy, coalition building, consultation, and policy development
- Since community partners are always evolving, public health and nursing academic partnerships help anchor projects
- Community partner expertise moves projects forward



# Infant Health Network





## Infant Health Network

### Partnerships Student Learning

- “[The Infant Health Network has] seen decreased premature births for those women who have received progesterone shots every week. The shots are given between 16-20 weeks and continued every week until 36 weeks. They cost about \$1200.” Grayson
- “Attending these meetings has opened my eyes to the expansive resources that can be used to aid those who qualify for their services. It has shown me the value of getting involved in the health of our community and the impact it will make on our youngest generation, our infants.”
- “I am impressed by the passion shown during these meetings. So many community members working toward the same end goal, improving the overall well-being of women and babies in their area. It inspires me to get involved with whatever community I am apart of once I begin my professional career.” Alex



The background of the slide features a series of thin, curved, concentric lines in a light gray color, creating a sense of depth and movement. These lines are more prominent on the left and right sides of the slide.

## Public Health Nursing Clinical Planning and Implementation

### Analyzed:

- Fall 2018 Clinical Progress and Recommendations
- Maternal/ Infant Mortality Rates
- Census Tract Data / Windshield Survey Data
- Social Determinants of Health/ Literacy Levels
- Evidenced-based post partum education concepts

### Obtained:

- Health Literacy Education and Mentoring from Teresa Wagner DrPH (UNTHSC)

### Implemented Interactive educational events to:

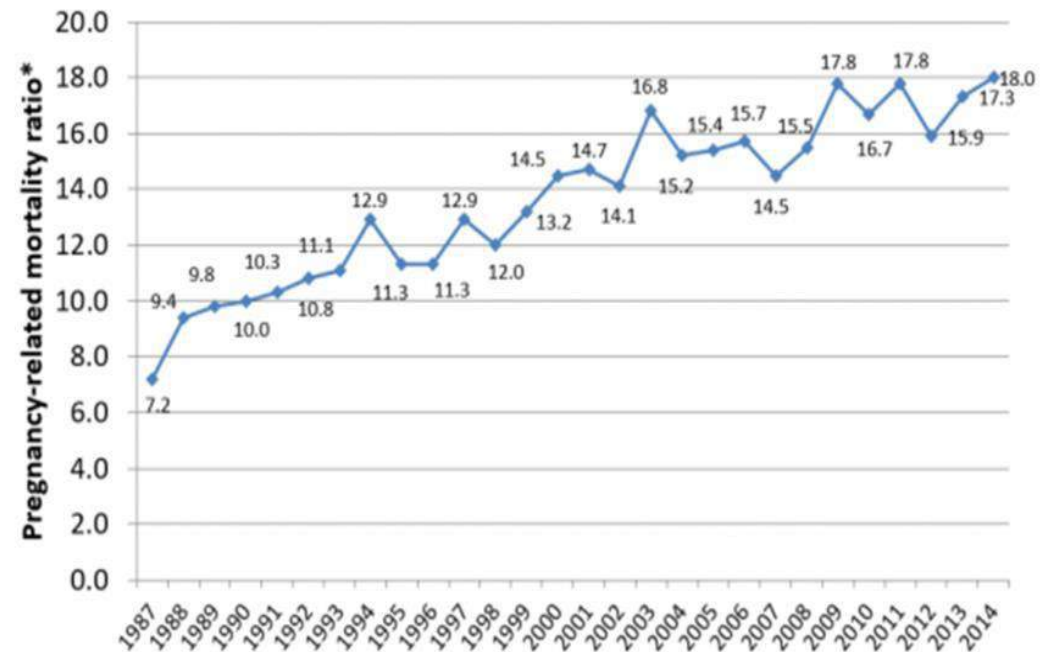
- Share Health Literacy Concepts
- Obtain Expert Feedback
- Discover Cultural insights



## The Issue:

Maternal Mortality is a global public health issue with National Urgency.

Trends in pregnancy-related mortality in the United States: 1987–2014



\*Note: Number of pregnancy-related deaths per 100,000 live births per year.



## The Issue:

Few studies have evaluated the effect of health literacy on obstetric outcomes.



- **Information on common potential complications is not consistent or based on adult learning theory causing an information gap.**
- **Women's ability to understand is influenced by other factors, such as culture, inadequate sleep, physical and emotional changes, possible side effects of medications, and low health literacy.**
- **Women may not understand if symptoms after birth are normal, or abnormal requiring medical attention.**
- **Black mothers are dying at the highest rate while disparities also exist for low-income women, women at extremes of maternal age and women from rural areas.**



## Top 5 Causes:

## Maternal Death in Texas

1. Cardiac event
2. Drug overdose
3. Hypertension/Eclampsia
4. Hemorrhage
5. Sepsis

-2016 Joint Biennial Report for the Legislature by TDSHS and the Task Force



## Case Study:

How did she die?



Twenty-six-year-old Amanda Eva Garcia lived in Texas, where maternal deaths have increased sharply in recent years. One of 16 siblings, “she came from a really hard life,” said Zak Tiemann, her boyfriend since 2011. She was sweet-natured and excitable, with a raucous laugh that burst out of nowhere — “little things put a big smile on her face.” She especially doted on her 9-year-old daughter, June, and their 2-year-old, Zoey. “Her mom abilities were so good,” Zak said. “She was the best mom I’ve ever seen.”

Amanda didn’t earn enough in her assembly-line job making foam food containers to afford insurance, so like more than half of women who give birth in Texas, she got her care through Medicaid. After delivering her third daughter, Zayleeana, by C-section on July 5, 2016, she and the kids went to stay with Zak’s mom while he picked up work in San Antonio, 35 miles away.

A couple of days after leaving the hospital, Amanda’s stomach started to ache. She lost her appetite: “She wasn’t eating her food. She was just throwing it in the trash,” Zak said. She turned pale and complained of feeling hot even though, to Zak’s touch, “her body felt real, real cold.” Eight days after giving birth, she could no longer stand up. An ambulance took her to Guadalupe Regional Medical Center, where doctors told Zak that her organs were failing. She passed away a couple of hours later.



# Socio-Ecological Model





## What can be done?

Figure B2 from the Texas Maternal Mortality and Morbidity Task Force and DSHS Joint Biennial Report 2018:

80% of Maternal Deaths have at least Some Chance of being Prevented through Better Care/Management

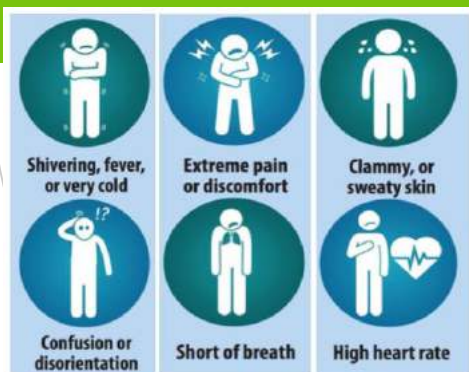
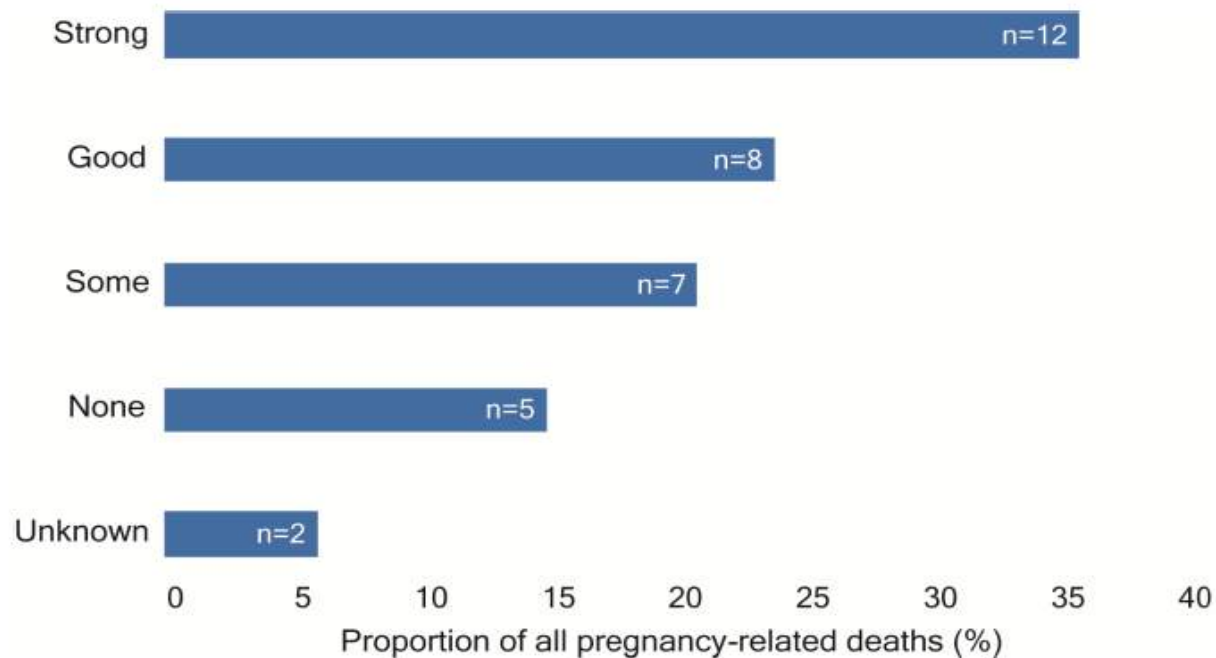


Figure B2: Task Force rating of chance of preventing pregnancy-related deaths through better care and/or management during/after pregnancy, Texas, 2012



PREPARED BY: Maternal & Child Health Epidemiology, Division for Community Health Improvement, DSHS.

DATA SOURCE: 2012 Death Files, 2011-2012 Live Birth and Fetal Death Files. Center for Health Statistics, DSHS.



# Social Determinants of Health

## **Clinical Approach:**

“She died of an infection.”

## **Public Health Approach:**

A lifetime of poverty, inadequate access to health care and stress. This lead to a lack of knowledge about the potential for infection or warning signs. She arrived in a health care setting too late for her situation.





# Student Learning: Health Literacy



## Hypothesis:

Improved health literacy and cultural sensitivity of postnatal education =

Improved communication, reduced care bias

=

Long-term reduction in maternal mortality.



- **AIM 1. Assess current readability, understandability and cultural sensitivity of information regarding postnatal care.**
  - Patient Education Materials Assessment Tool
  - Fry-based Readability
  - National Standards for Culturally and Linguistically Appropriate Services (CLAS, 2018),
- Review at least one rural and urban healthcare system's postnatal discharge materials in programs serving low-income patients.



## What is 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.”

*-Healthy People 2020 and IOM*

U.S. Department of Health & Human Services, Healthy People 2020

Health literacy is a **shared** responsibility.



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1. What is this passage about?

2. What do you need to do first?

3. For what do you need to check?

4. How do you remove bubbles?





# Student Learning: Cultural Perspectives



## Cultural Awareness



Culture is a broad concept that goes way beyond ethnicity or country of origin.

Culture can include:

- Age
- Educational level
- Geographic origin
- Group history
- Language
- Life experiences
- Religion, spiritual beliefs and practices
- Ability/disability
- Gender orientation
- Race/ethnicity
- Socio-economic status
- Other critical life-shaping forces



## Culture & Health Literacy



- Ask patients open-ended questions and follow their lead about “appropriate ways to facilitate communication within families and between families and other health care providers.”
- Plan, write and design materials to reflect the audience and be as inclusive as possible.



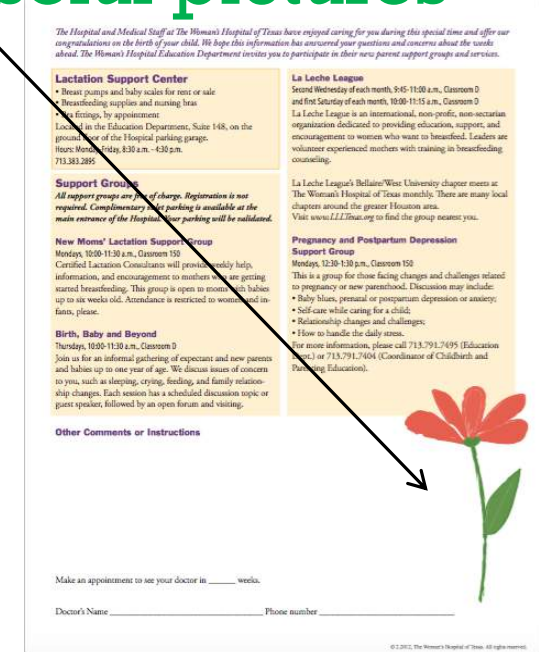
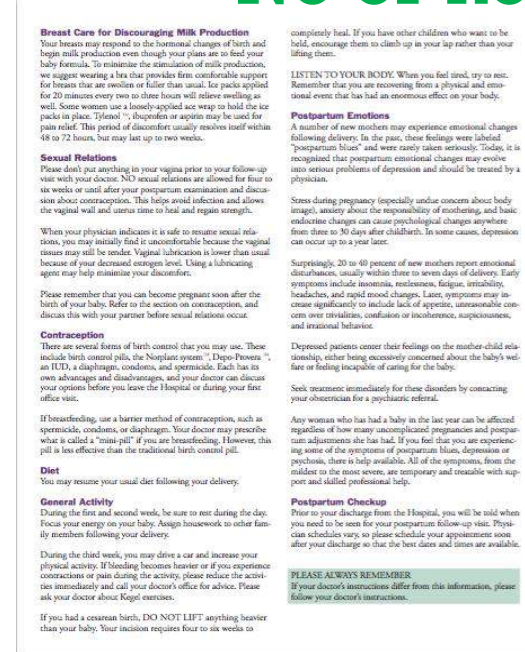
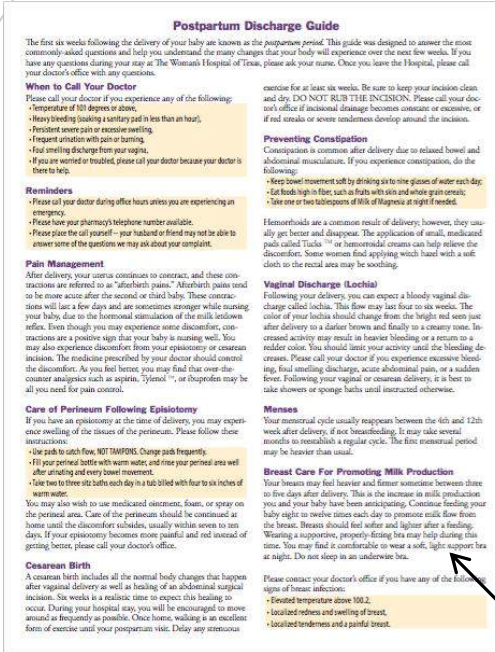
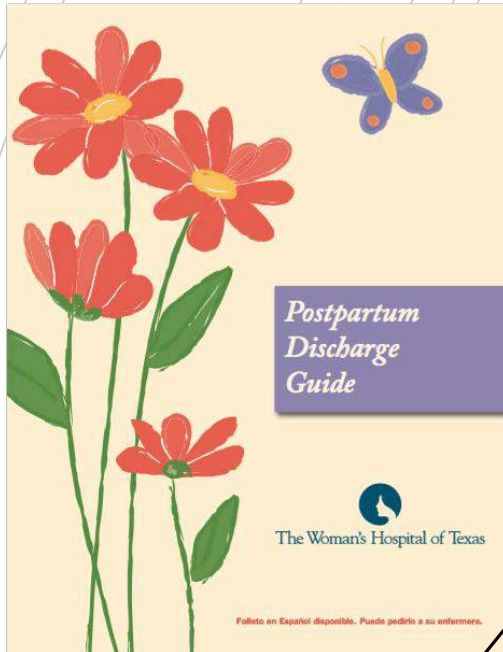


# Student Learning: Plain Language



# Can we make it any easier?

## No or not useful pictures



Too Much Information

Too Much Text

The Women's Hospital of Texas- Postpartum Discharge Guide- Readability Grade Level= 10.4



# Plain Language: Oral and Written

Medical Term	Plain Language
Maximum Out-of Pocket Expense	The most you will have to pay
Daily	Every day
Screening	Test
Prevention	Stopping something from happening
Referral	Send you to another doctor/clinic
Acute	Sudden, short-term



## **Lower Cognitive Demand!**



- Patient-friendly, easy to read design
- Plain language
- One or two syllable words, short sentences
- Short paragraphs
- Content limited to one or two key objectives
- Bullet points to present information in “bite-sized nuggets”
- White space



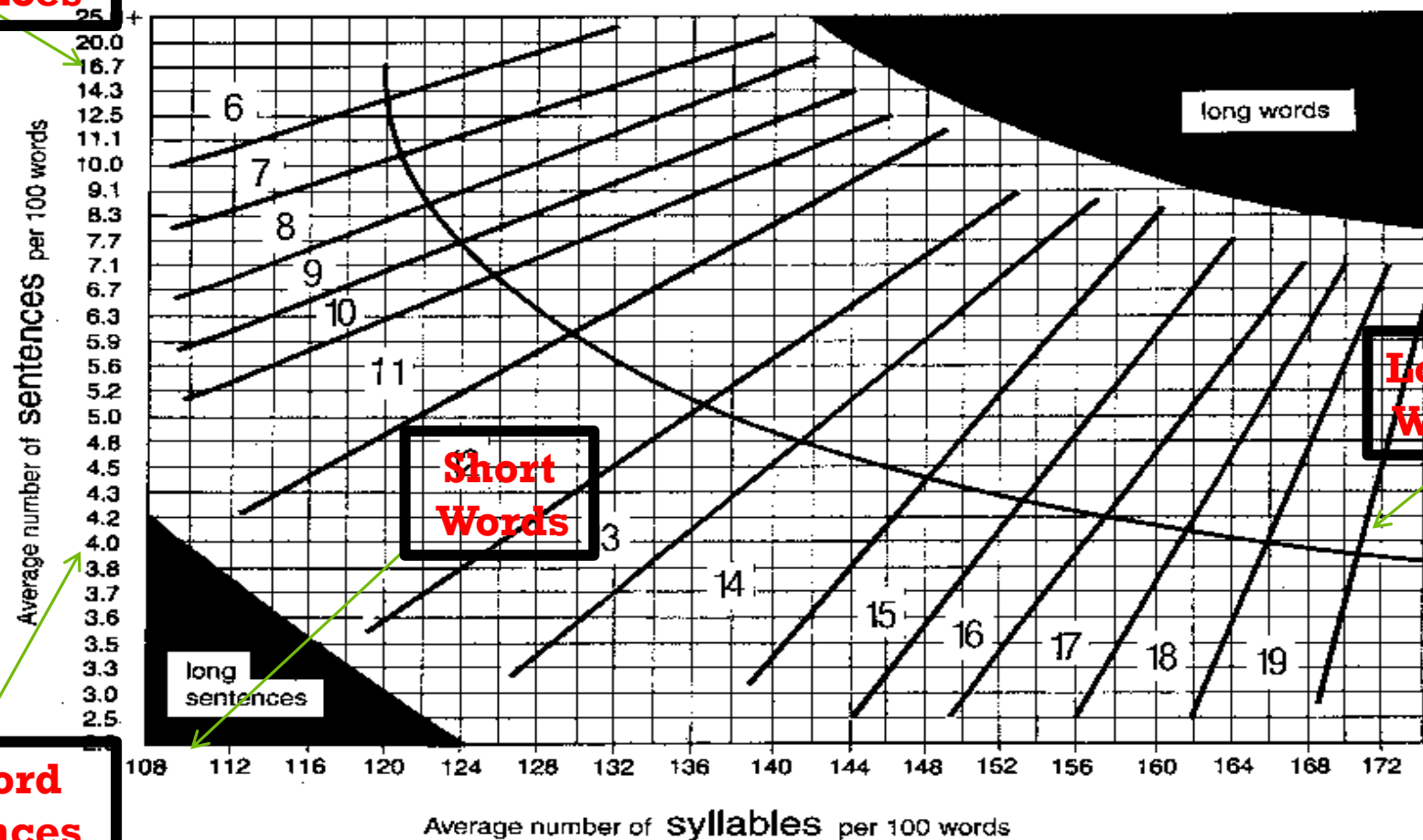
## Easy to Read!

- Stick with one font. Mixing is confusing.
  - Serif font, size 11 – 13
- Avoid using all CAPS. Use upper and lower case letters. All CAPS are hard to read.
- Limit the use of italics. These are hard to read.
- Limit text otherwise fliers become very busy.
- Limit use of light letters on dark background as this is harder to read.
- Try using dark letters on light background.



**4-Word  
Sentences**

**Fry Graph for estimating Reading Ages (in years)**



**Longer  
Words**

**25-Word  
Sentences**



## **Readability = Understanding**

Can you fix this?

Put the reader into the document with active voice and personal pronouns.

Sometimes the preliminary test results are positive when the person is not infected. A positive AIDS test should be reconfirmed by a different lab technique to assure that it is accurate.





**Readability = Understanding**

Now you're talking!

If your AIDS test comes back positive, you still might be free from AIDS.

Ask the clinic to give you a second test using a different method.

Sometimes the first lab test is not correct.

