Data to inform policies and decisions

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CityMatCH

The national organization of urban Maternal and Child Health leaders

Mission: to strengthen public health leaders and organizations to promote equity and improve the health of urban women, families and communities.

Initiatives: Equity, Science-use, Leadership

Today:

What data can we use

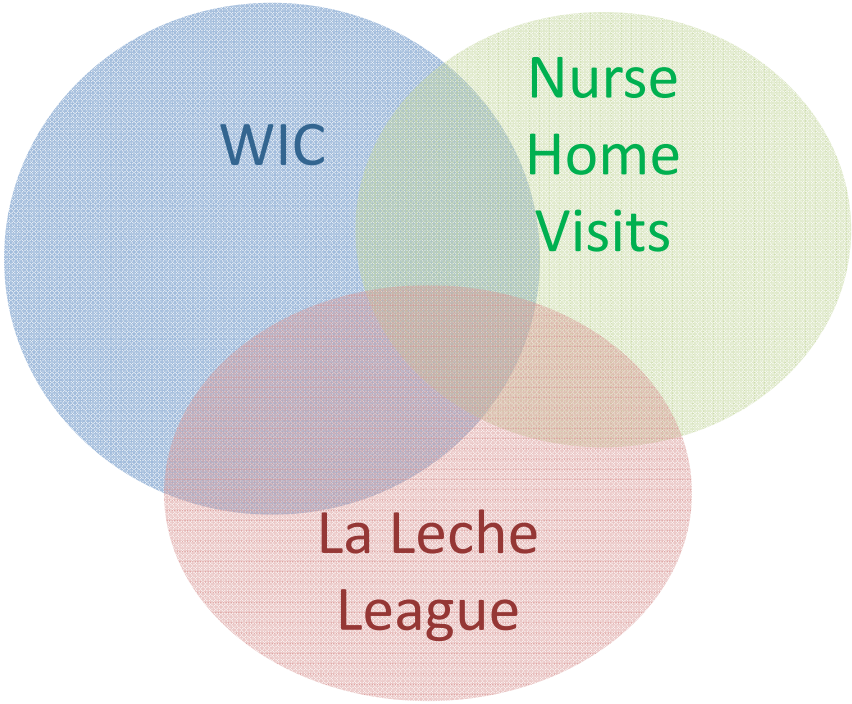
Using data with community stakeholders

Unleashing the power of data (making an impact)

Reference group, excess risk

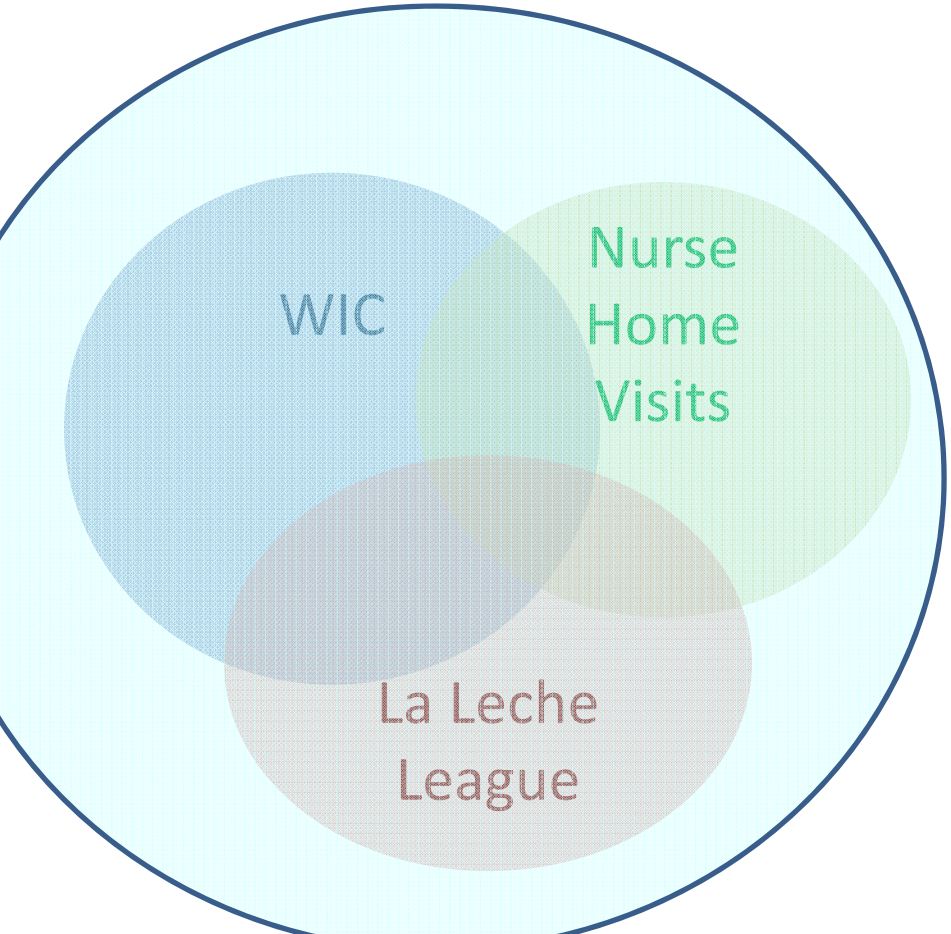
Advice and general rules for communication about data

What do we know about our population of infants, and how do we know it?



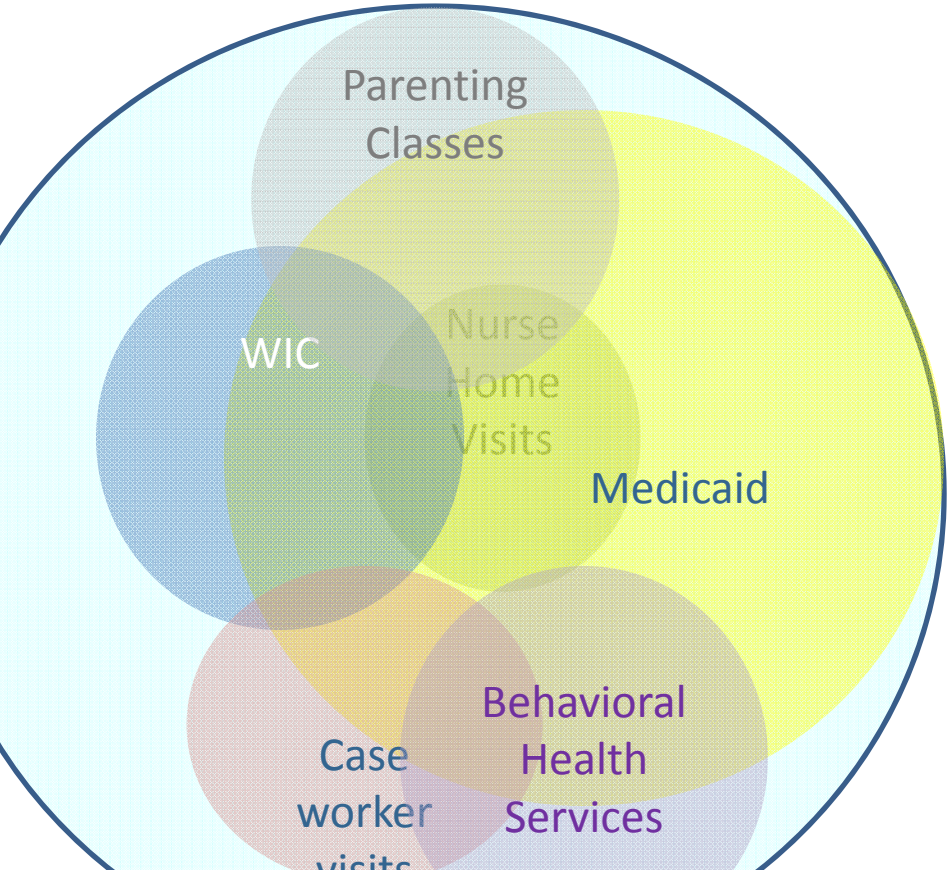
- Personal experience
- Program administration data
- Evaluation data
- Scientific study information

One of the functions of public health: Assuring the health of *the population (all* infants*)*



Everyone gets born, so why not use birth certificate data?

Population based data provides a different perspective



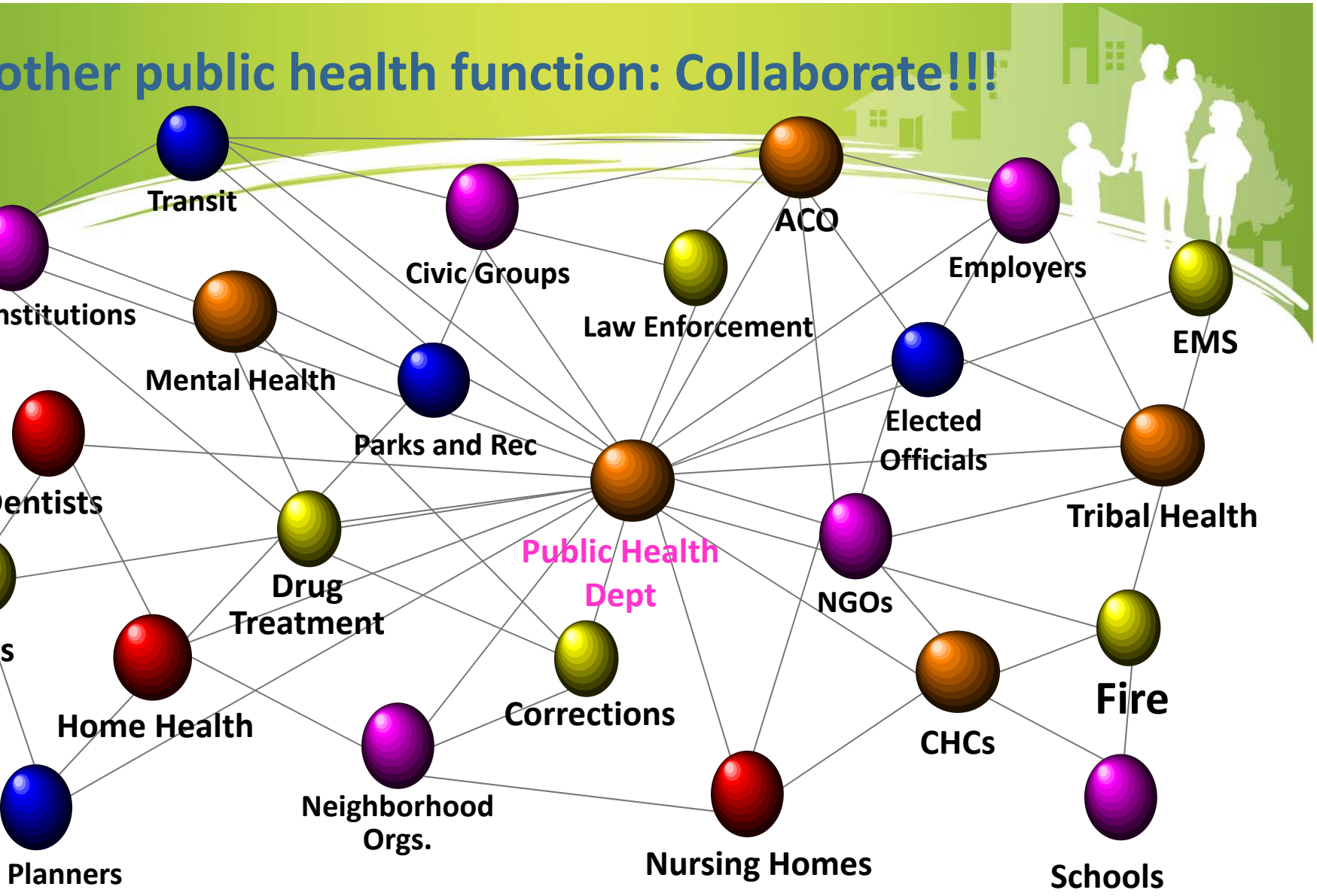
Program data and personal experience are IMPORTANT but should be framed with birth certificate data, for the whole picture.

On a side note, not quite everyone gets born

In 2005 there were about 6 fetal deaths >=20 weeks gestation for every 1000 live births. They are recorded in a different vital records data file.

There are nearly as many fetal deaths as there are infant deaths.

-MacDorman 2009 NCHS



Source: NACCHO'S MAPP Clearinghouse

Principles of Collective Impact

Common agenda, shared understanding of what we want to change (who , where etc.)

Mutually reinforcing activities

Continuous communication

Backbone organization

Shared measurement systems, surveillance

Our points of view differ…

WIC nurse	Criminal court justice
Daycare provider	SIDS death scene investigator
High risk maternal fetal medicine specialist	Family Practice physician

Population-based data can anchor us and help us communicate and work together

Getting your own data is expensive, so get all you can from existing data sources

- Birth certificate files
- American Community Survey
- Linked death certificate files
- Fetal death files
- Program data
- Hospital data
- PRAMS
- National Survey of Children's Health
- Youth Risk Behavior Survey
- Etc.

Some useful information that we can get from birth certificate data (individual records in an electronic file)

- Maternal age, education, race, ethnicity, Medicaid for delivery, marital status, country of origin, place of residence
- Hx: Previous birth or other outcome, previous preterm birth, birth spacing
- Prematurity (<37weeks, <34 weeks etc.)
- Elective early term delivery (37 and 38 weeks)
- On WIC during pregnancy
- Pre-pregnancy BMI and chronic disease

Some useful information that we can get from Census data (iowadatacenter.org)

- Population, migration to and from, net change
- Household income, poverty by demographics
- Race, citizenship, place of birth, language
- Religion, voting age and voting
- Health insurance coverage
- Housing cost, percent owner occupied
- Food assistance
- Education and employment

Some useful information that we can get from Iowa PRAMS (individual)

- Insurance before pregnancy (preventive care)
- Health before pregnancy (BMI, diabetes, hypertension, vitamins, health care)
- Behaviors (diet, exercise, smoking, drinking)
- Difficult circumstances (homelessness, trouble paying bills, jail, job loss, military service, etc.)
- Experiences during prenatal care and reasons why late or no prenatal care
- Postpartum health for mom and baby

Comparing our data to something else gives it meaning

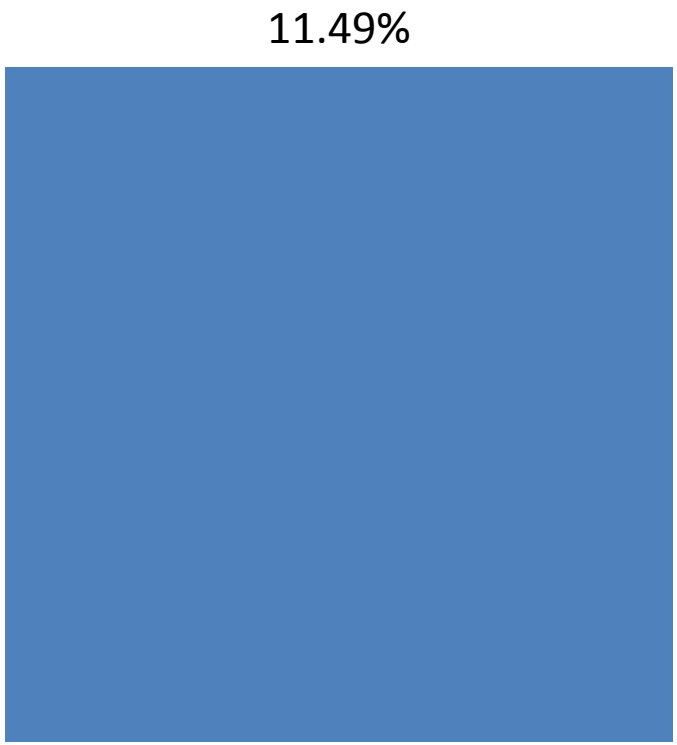
To another state or the USA (ranking?)

To other times (last year, last decade?)

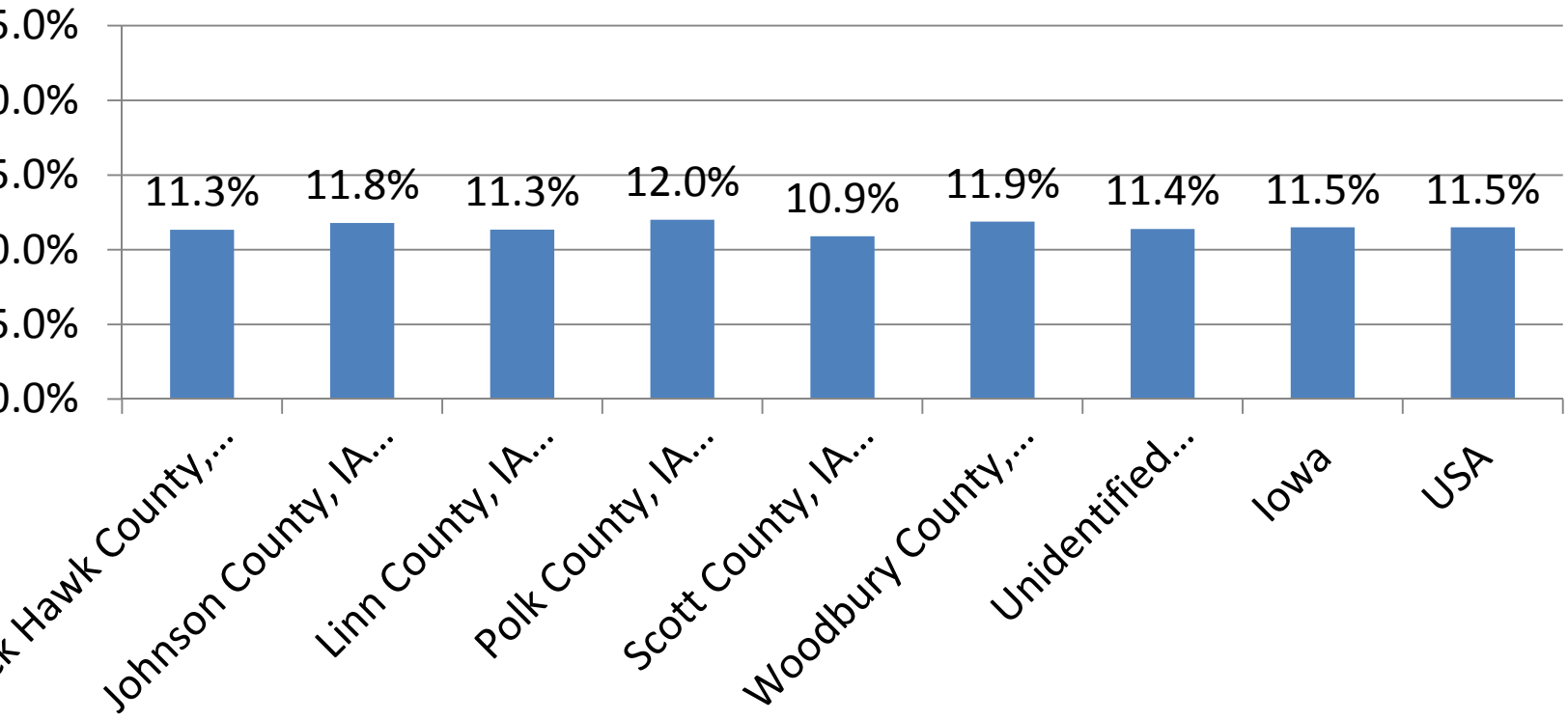
To a fixed goal (HP2020?)

To a reference population– a real population with good outcomes

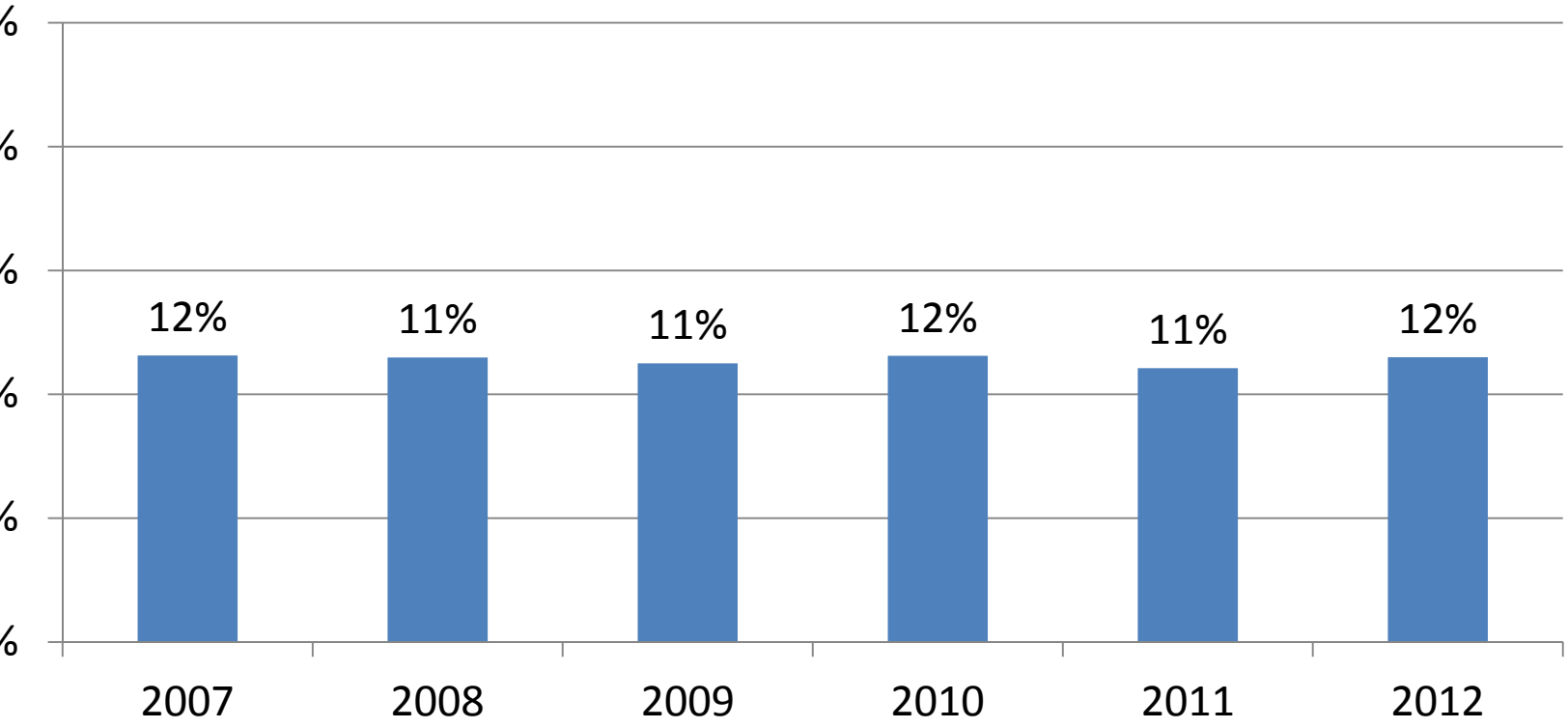
Percent of live births that were preterm, Iowa 2012



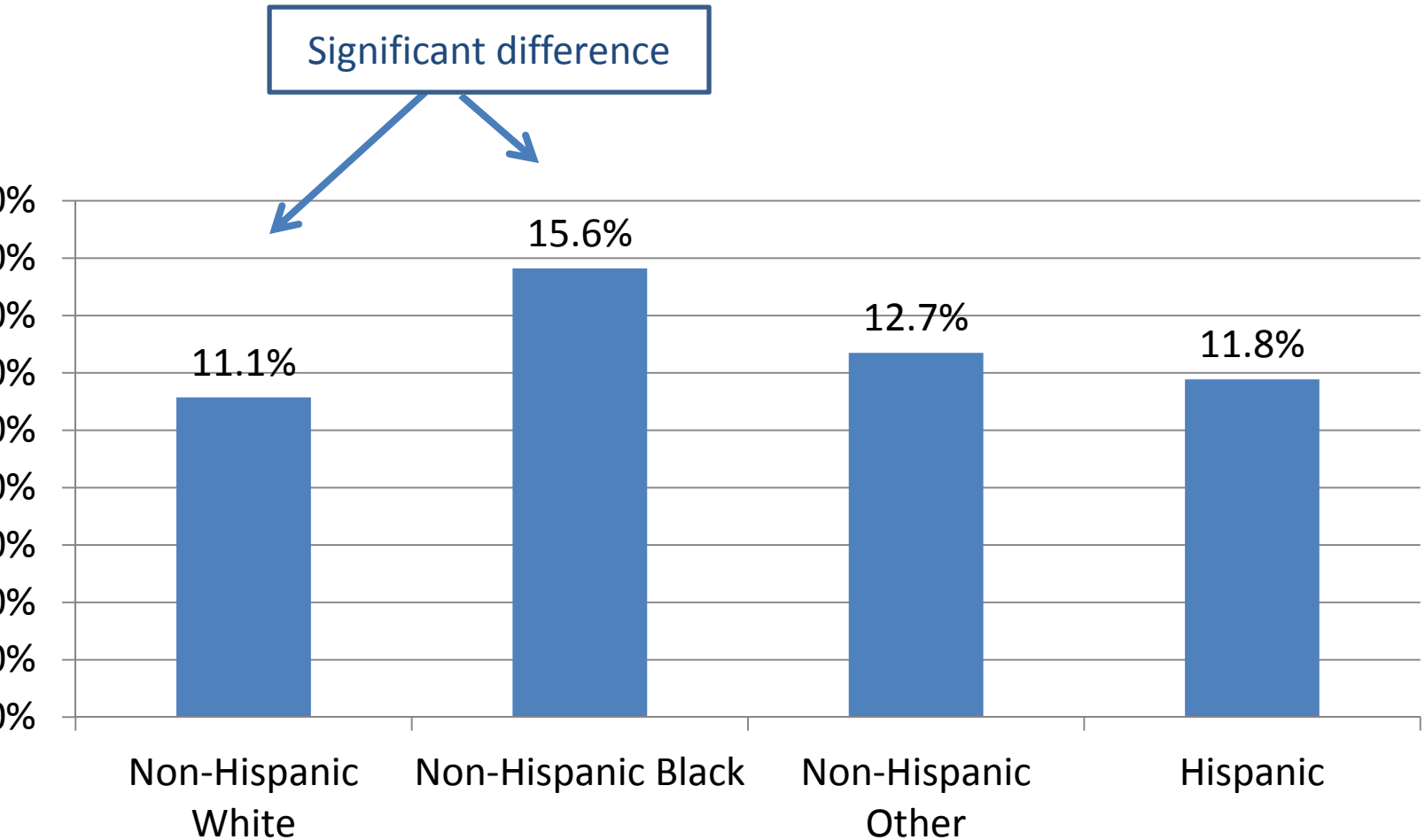
Preterm birth rate, large Iowa counties 2012 (source: CDC Wonder Natality Files)



Preterm birth rate, Iowa, 2007-2012 (source: CDC Wonder Natality Files)



Preterm birth rate, Iowa 2012 by race/ethnicity (source: CDC Wonder Natality Files)



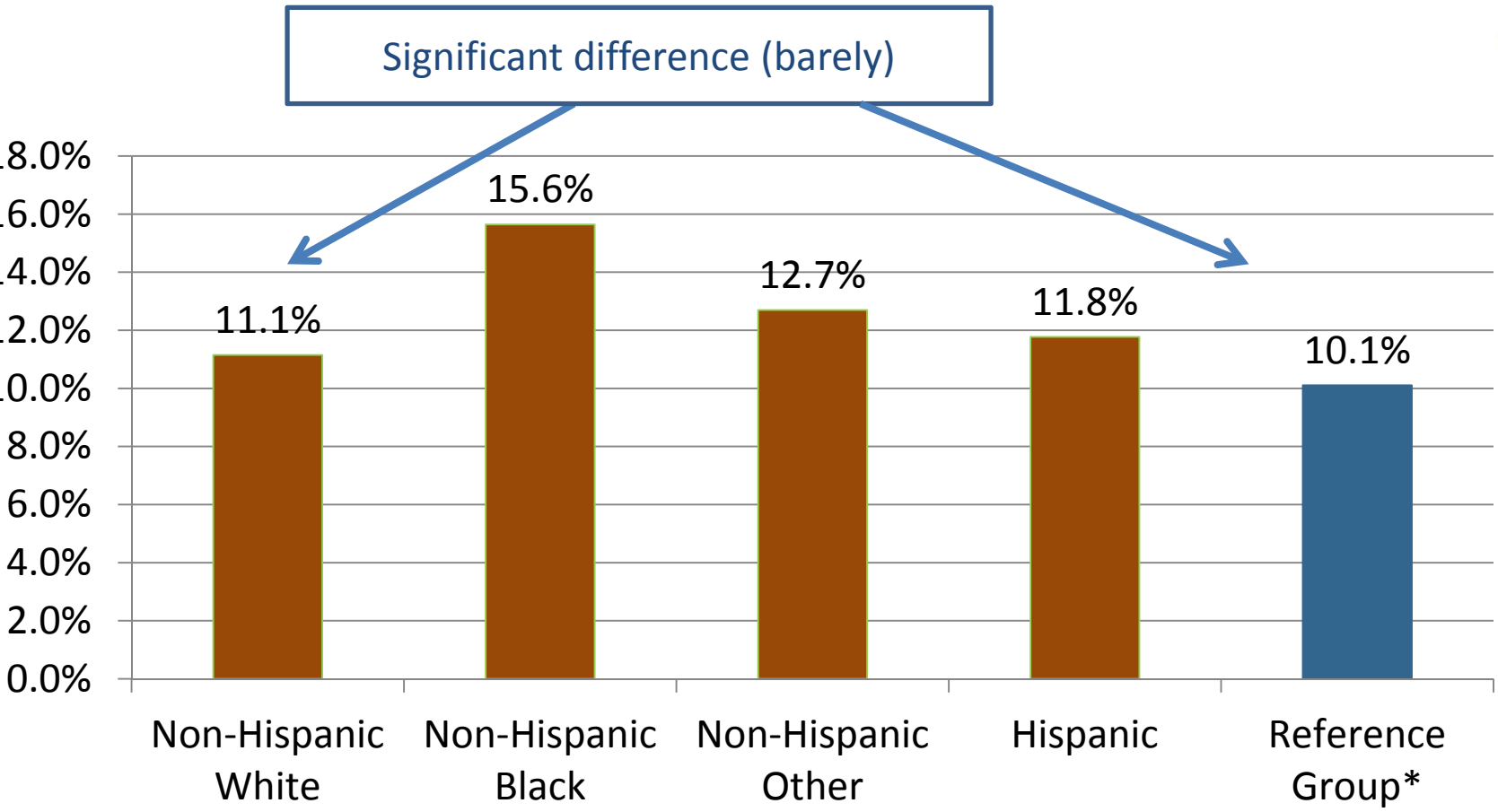
Reference Group

s there a well-defined group within our state
that has better outcomes than others?

- Fewer disadvantages
- Better family health history
- Better socioeconomic status

College-educated white non-Hispanic mothers

Preterm birth rate, Iowa 2012 by race/ethnicity (source: CDC Wonder Natality Files)



*College educated white non-Hispanic mothers

Reference Group

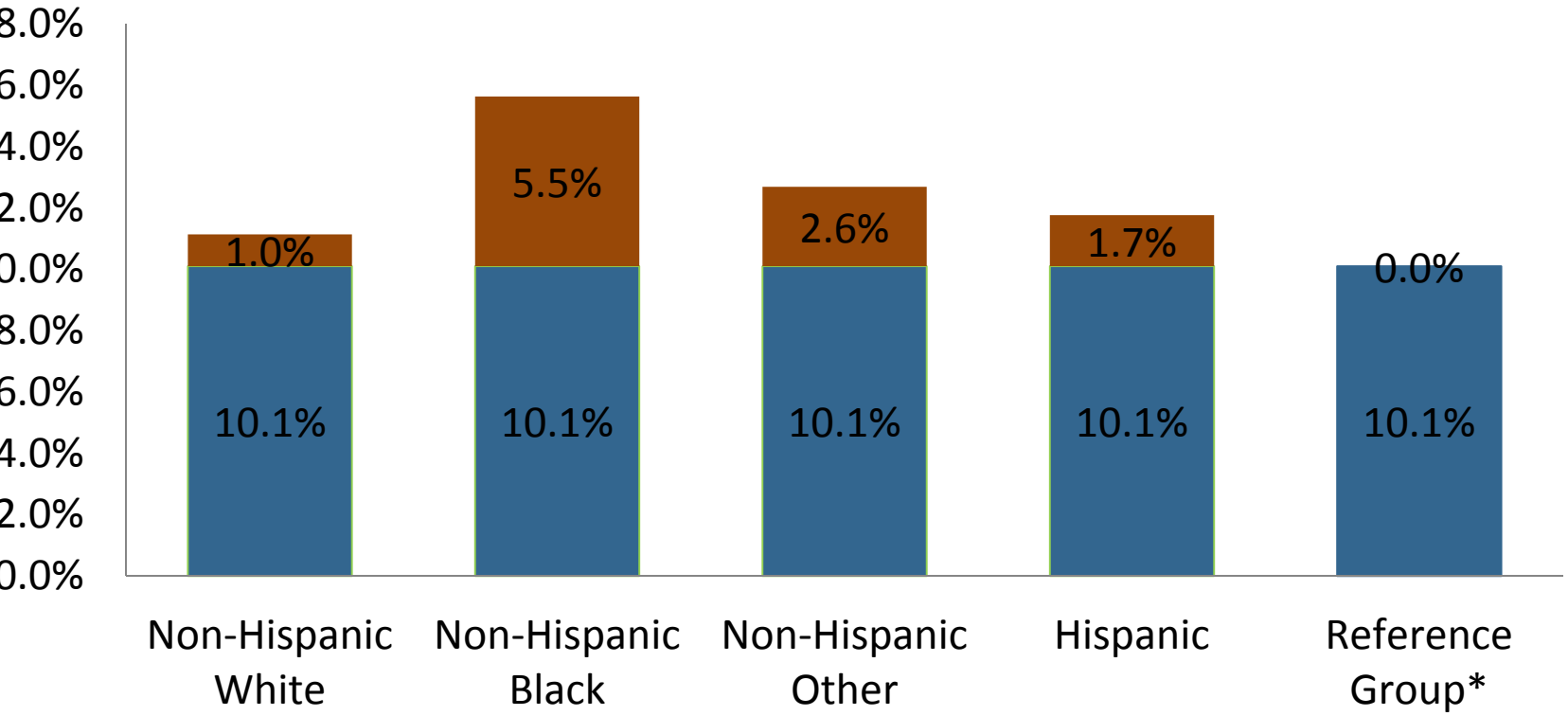
An agreed-upon goal to strive for

Includes both race and Socioeconomic Status

Risk factor prevalences can also be compared to the reference group

A way to estimate **preventability**

“Excess” preterm birth by race/ethnicity



*College educated white non-Hispanic mothers

Impact of Black Excess Preterm Birth

Total preterm births 4,451

Black preterm births 314

Excess Black preterm births

=5.5/15.6=35% of 314=111 births

Theoretically preventable preterm births in 2012

Which of the well-known risk factors help explain the excess prematurity?

Example using marital status, a proxy for social support and socioeconomic status

	White NH without reference group	Hispanic	Black NH	Reference Group
Married	73,821	9509	2,822	62,970
Unmarried	57,963	9738	8,361	3,613
Prevalence of unmarried	44%	51%	75%	5%

Estimating the potential impact of decreasing important risk factors

Population Attributable Risk

Takes into account both how common the factor is and how dangerous it is

PAR/PAF answer the question: *What if the entire population had the same rate as the lower risk group?*

Population Attributable Risk Example

Start by cross-tabulating

marital status vs outcome (very preterm birth)

	<32 weeks gestation	Total	% <32 weeks
Married	41	185	22.2%
Unmarried	207	815	25.4%
Total	248	1000	24.8%

	<32 weeks gestation	Total	% <32 weeks
Married	41	185	**22.2%**
Unmarried	207	815	25.4%
Total	248	**1000**	24.8%

all 1000 babies in the opulation had the same ery preterm rate as the ore ideal group – the arried women	**.222** × 1,000	= **222** very preterm births

	<32 weeks gestation	>=32 weeks gestation	Total	% <32 weeks
Married	41	144	185	22.2%
Unmarried	207	608	815	25.4%
Total	**248**	752	1000	24.8%

248 actual very preterm births, **minus 222** hypothetical preterm births if all women were married, leaves **26** that would be eliminated.

PAR%= 26/248 = **10.4%** could be eliminated (theoretically)

f all the babies could have the same lower risk of being born very preterm as the babies of the married moms we would reduce the population's rate of very preterm birth by 10.4%

Takes into account both how common the factor is and how dangerous it is

Note: PAR% is also the difference between the rate for "total" and the rate for "married" divided by the rate for "total" (24.8-22.2)/24.8=10.6%

CityMatCH Equity Institutes

WK Kellogg Foundation

Ohio state and local health departments

We will chip away at the most intractable inequities in birth outcomes

- Add to the evidence base through rigorous evaluation
- Make a difference that can be measured at the population level
- Disseminate

very preterm births to NH black mothers in Urban County that l be averted IF we could eliminate a risk factor like . . . age # births / year = 1,340)			
isk Factor / haracteristic	Avg. Annual # of County NH Blacks with Risk Factor	Potential Impact (# of fewer very preterm births)	Risk Ratio
r age years of age)	370	39	1.4
education gh school)	778	No effect	1.0
arried	1086	52	1.1
n WIC g pregnancy	420	95	1.9
spacing <18 hs	1,210	166	1.5
ing	263	13	1.3

Communicating Effectively

Making Data Talk

Mostly borrowed from my co-worker

Allison Miles

Know Your Audience

How people are made

Misunderstanding probability estimates

Misunderstanding percentages

Improperly converting proportions to percentages

Difficulty processing risk information

We need small bites

Individuals have limited capacity to process large amounts of information at one time and simplify or “chunk” the information to which they are exposed.

What people do…

Remember the first number

Correlation equals causation

Failure to consider randomness

How to Use Words and Numbers

Communicating with Words

Hints:

Metaphors help statistics come to life.

Equate numbers or rates to something your audience can relate to.

When possible, personalize the data by naming familiar venues, schools, or communities.

People prefer stories

Most people need the SO WHAT

No matter how fascinating the data details are

No matter how complicated the analysis

No matter how much information there is

Tell them what you want them to get out of it

Tell them what to do

A Tale of Two Cities

onicu City	Tinybaby City
00 births	1,000 births
VLBW deaths	10 VLBW deaths

or both cities, the "Blue Box" mortality rate is 10 deaths per thousand live births.

But there is an important difference

A Tale of Two Cities

onicu City	Tinybaby City
00 births	1,000 births
VLBW deaths	10 VLBW deaths
VLBW births	100 VLBW births
% of them die	10% die, but there are so many!

THEIR STRATEGIES WILL BE COMPLETELY DIFFERENT

Communicating with Numbers

Hints:

Keep numbers simple and provide easy to understand modifiers and meanings.

Round numbers to the nearest whole number.

When possible, pre-test the use of numbers with your audience to ensure clarity.

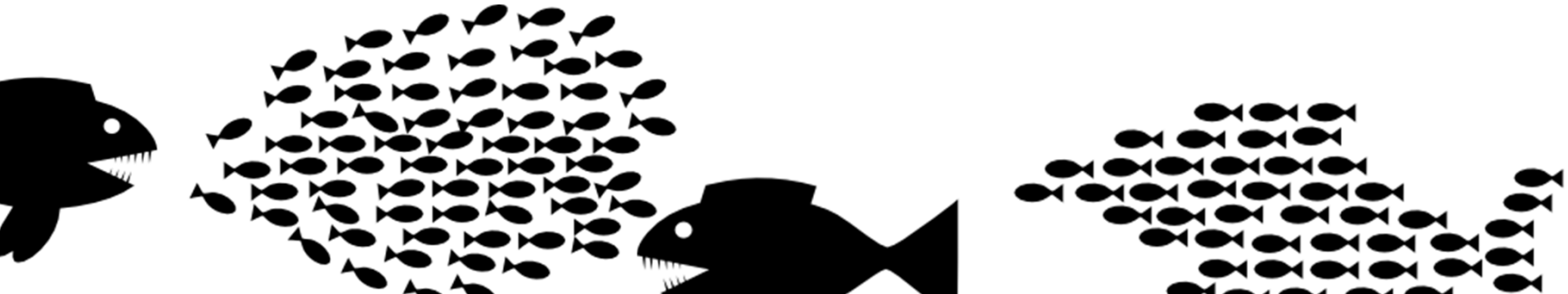
Organize

What is the scientific story?

Do we understand the scientific story?

What function will the data serve?

Is the data clear and relevant?



Summary

Use data sparingly to limit cognitive burden.

Present data in formats familiar to the audience.

The order or sequence of data will impact how information is remembered.

Identify and make numbers stand out by showing how they are unique or novel.

Integrate words, symbols, and numbers.

But, data and facts aren’t enough…

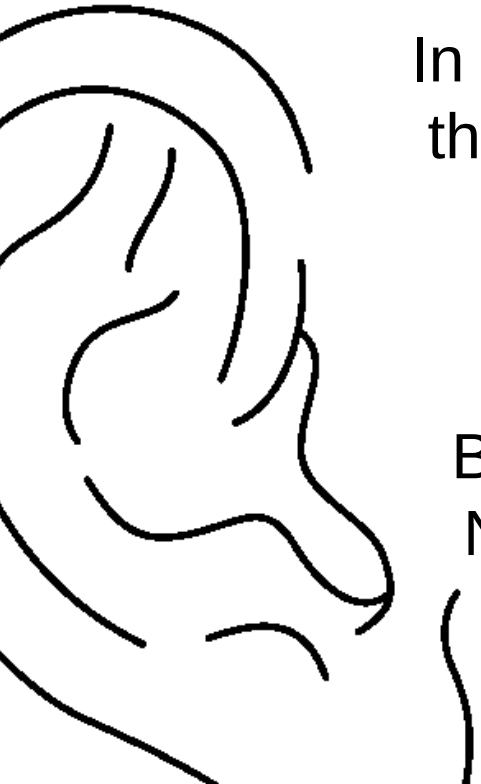
Framing

Frame—mental shortcut used to facilitate the thinking process. Or more simply, “what is in your head that drives how you think and react.”

Framing—structuring what you say and how you say it to best work with what is **already** in someone’s head.

Demonstrating unequal outcomes is **NOT** a compelling message for action.

Hillsborough, County



The data says–
In 2005, Black babies died at a rate 4.4 times that of White Babies in Hillsborough County.

The community hears–
Blacks have failed again!
Backs are not taking care of their babies.
Numbers are being manipulated to tell a negative story.

Lead with a compelling shared belief, value or benefit, **NOT** a data point.

Framing Priorities

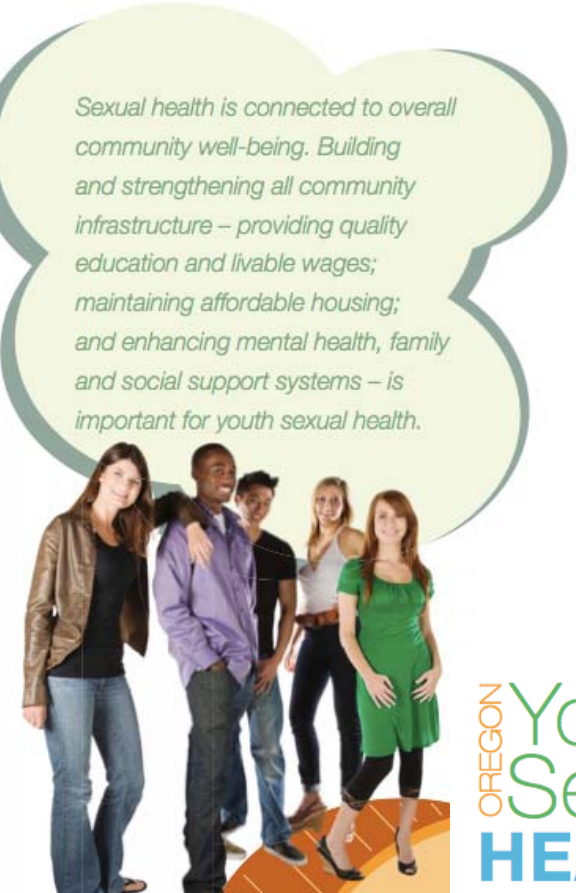
Emphasize external factors—systems, structural components, and environment.

1 out of every 4 young girls has an STI.

Vs.

75% of schools don't train young people how to keep themselves safe from STIs and avoid unintended pregnancy.

Framing Priorities

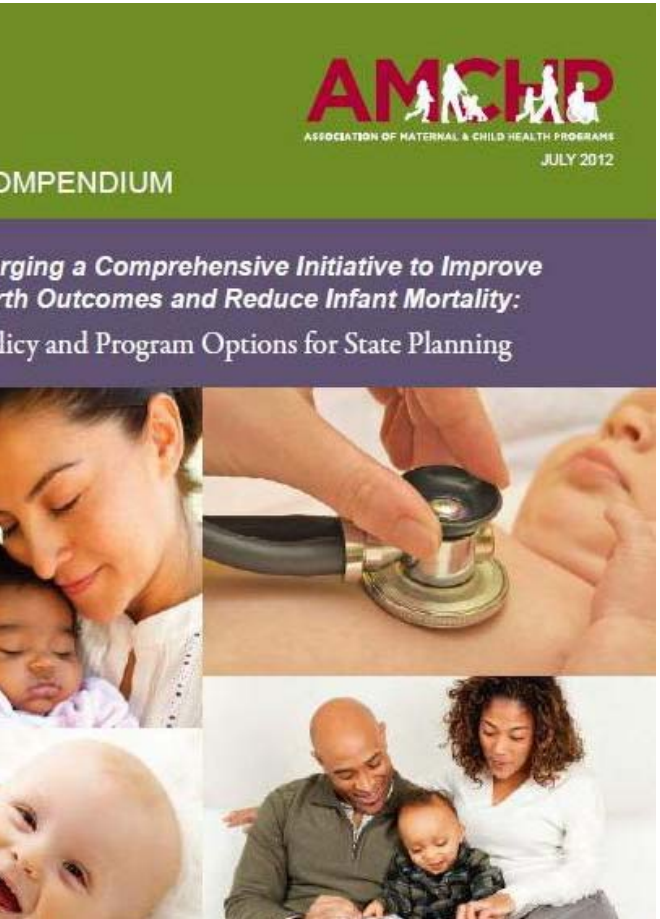


OREGON Youth Sexual HEALTH

Us-ness, benefits to all, interconnectedness, interdependence.

Eliminating health disparities is important, even to people who don't experience them.

Framing Priorities



Solutions, what is working, ingenuity, can-do spirit.

When people are presented with effective solutions, they are able to more clearly understand where the system breaks down and how we might fix it.

THANK YOU

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