• Part I: Understanding Life Course Perspective
• Part II: Social Determinants of Health: Race, Racism and Birth Outcomes

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CityMatCH Life Course Game

• Play game in groups of 5
• Each person must select:
  – Game piece
  – Character Card
• Begin by reading your character card aloud
• Follow Game instructions closely
  – How to roll dice
  – What happens next
• Be sure to STOP and read the instructions at space 20 and space 67
The Life Course Perspective

- What events occurred during the game?
- What revelations did this experience raise for you personally?
- What does this game tell us about the complex nature of living in a community?

What is life?

“Most people think life sucks, and then you die. Not me. I beg to differ. I think life sucks, then you get cancer, then your dog dies, your wife leaves you, the cancer goes into remission, you get a new dog, you get remarried, you owe ten million dollars in medical bills but you work hard for thirty-five years and you pay it back and then one day you have a massive stroke, your whole right side is paralyzed, you have to limp along the streets and speak out of the left side of your mouth and drool, but you go into rehabilitation and regain the power to walk and the power to talk and then one day you step off a curb at Sixty-seventh Street, and BANG you get hit by a city bus and then you die. Maybe.”

-Dennis Leary, Actor/Comedian
Life Course Perspective

• Experiences in life impact us in different ways
• Understanding the life course perspective can help explain these changes
• This is not a novel concept
  - Some research supports what we know
  - Some research gives us a new understanding that can impact our work

Were you born…?

A) Within 3 weeks of your due date
B) 3-5 weeks before your due date.
C) 6 or more weeks before your due date.
D) I don’t know
Why Prematurity (Preterm) Matters

• Length of pregnancy is 40 weeks
  – Full term is 37 weeks
• Preterm is birth before 37 weeks
  – 8.3% of all births in California in 2014
• Babies born just a few weeks early are at risk of severe health problems and lifelong disabilities.

Measuring Preterm Birth

Percent Preterm Births (LMP vs. Obstetric Estimate)*, 2007-2013

Starting in 2014, March of Dimes uses Obstetric Estimate.
Leading Group Causes of Infant Death
Los Angeles County, 2013

- Extremely low birth weight or extreme immaturity
- Other perinatal conditions
- SIDS (Sudden Infant Death Syndrome)
- Congenital malformations of the heart
- Low birth weight or preterm

Data Sources: California Department of Public Health, Center for Health Statistics, OHR Vital Statistics Section, 2013. Prepared by the Los Angeles County Department of Public Health; Maternal, Child and Adolescent Health; Research, Evaluation, and Planning Unit.

Infant Deaths vs. Child/Teen Deaths
Los Angeles County, 2013

More infants died than children and teens combined (447)

Infants accounted for 87% of deaths of children under age five and 50% of all deaths under age 28

Data Source: California Department of Public Health, Center for Health Statistics, OHR Vital Statistics Section, 2013. Prepared by the Los Angeles County Department of Public Health; Maternal, Child and Adolescent Health; Research, Evaluation, and Planning Unit.
Key Concept # 1

TIMELINE

Today’s experiences and exposures influence tomorrow’s health

Your Mother’s/Father’s Life

Your Life

Next Generation

Disparity at Birth

Poor Health

Excellent Health

Poor Nutrition

Obesity

Unsafe Neighborhood

Poor Education

Lack of Health Care

No Family Planning

Tobacco/Alcohol/Drugs

Nutrition

Healthy Relationships

Social Support

Exercise

Education

Health Care

Family Planning

Safe Neighborhood

Healthy Relationships

Financial Security

Planned Pregnancy

Risk Factors

Protective Factors

Poor Birth Outcome

Optimal Birth Outcome

Conception

Birth

Age 5

Puberty

Pregnancy

Delivery

2nd Pregnancy

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Cumulative Pathways

Chronic accommodation to stress results in wear and tear on the body’s adaptive systems, leading to declining health and function over time.
Stress and CRH in Pregnancy

Levels of Maternal Plasma Corticotropin Releasing Hormone (CRH)

- Preterm
- Control

p < 0.0001

Key Concept #2

TIMING

Health pathways are particularly affected during critical or sensitive periods.

Image used with permission from SirColby.com

Early Programming

Experiences during sensitive developmental periods in early life may encode function of organs or systems the manifest in health and disease later in life.

Barker Hypothesis
Birth Weight and Insulin Resistance

Adverse Childhood Experiences

- Childhood abuse, neglect, household dysfunction
- Score is sum of ACE reported
  - Over 60% had at least one ACE
  - Over 20% reported at least 3 ACEs
- Dose-response with health problems
  - Substance Use
  - Chronic Disease
  - Behavioral Health
  - Quality of Life

Key Concept #3

ENVIRONMENT

The broader community environment strongly affects the capacity to be healthy.
Genetics 101

There are no such things as genes!

Better stated: Genetic expression is determined by the environment

Racial & Ethnic Disparities
Infant Mortality & Nativity

<table>
<thead>
<tr>
<th></th>
<th>Per 1,000 Live Births</th>
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<tbody>
<tr>
<td></td>
<td>All</td>
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<td>Foreign Born</td>
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Image used with permission from the NIH National Institute of Environmental Health Sciences

National Vital Statistics Reports, Vol. 61, No. 8, 2009
Place Matters: Differences in Health Based on Where You Live: Life Expectancy in Los Angeles & Orange Counties Metro Areas

Neighborhood-Level Effects

- All cause mortality
- Chronic disease among adults
- Self-rated health
- Long-term disability
- Cardiovascular symptoms or disease
- Respiratory function
- Health Behaviors (i.e. smoking, sexual practices)
- Domestic Violence
- Low birth weight and preterm birth
Key Concept #4

GENERATIONS

Health is shaped by human context across lifetimes and generations

Gestational Diabetes & Type 2 Diabetes in the Offspring

Key Concepts #5

EQUITY

Inequality in health reflects more than genetics and personal choice

Health Inequity

- A systematic and unjust difference health and illness
  - related to but different than health disparities
- Based on membership in an oppressed group with historically restricted access to societal resources
- Not ‘natural’
- Public health responsibility to remediate inequities

EQUALITY  EQUITY
Racial & Ethnic Disparities
Infant Mortality

Infant mortality is higher among Black Americans despite...

- Lower rate of high school completion among Mexican Americans (51% vs. 74%)
- Higher rate of smoking among White Americans (13.6% vs. 9.3%)

National Vital Statistics Reports, Vol. 61, No. 8, 2009

Racial & Ethnic Disparities
Infant Mortality

National Center for Health Statistics 2002
Levels of Racism

- **Personally mediated racism** - an acute stressor, including individual insults and discriminatory acts
- **Institutionalized racism** - discriminatory, race- or class-based policies and practices (informal and formal).
- **Internalized racism** - acceptance by members of the stigmatized races of negative messages about their own abilities and intrinsic worth
- **Cultural racism** - determines which group qualities and characteristics are valued/devalued

RACISM: Ignore it... and it won’t go away

The new racism is to deny that racism exists

Racial & Ethnic Disparities
Low Birth Weight & Racism

![Bar chart showing the relationship between percent women reporting discrimination and birthweight.](chart.png)

Racial and Ethnic Disparities
Multiple Determinants of Birth Outcomes

• Controlled for 46 risk factors (demographic characteristics, medical risks, level of living, psychological, social, exposures, “newly defined”)
  – 236 g mean birthweight difference between black & whites babies remained
• Maternal age, smoking, BMI, housing & locus of control only significant covariates
  – 46 risk factors explained less than 10% of variation in birthweight

Ever Experienced Discrimination
Los Angeles County, 2012

Over 50% of Black mothers reported having experienced some forms of discrimination during their life

Percent of mothers in Los Angeles County with a recent live birth by Race/Ethnicity, 2012
Data Source: Los Angeles Mommy and Baby (LAMB) 2012 Survey
Data are weighted to represent the population of mothers who gave a live birth in Los Angeles County in 2012
Weathering Hypothesis

- Health of black women begins to deteriorate in early adulthood as a physical consequence of socioeconomic disadvantage
- 20s – early 30s “lowest risk” age
- However…
  - Infants of Black teen mothers experience a survival advantage relative to older mothers
  - Black-White mortality differential is larger at older ages

This is a Paradigm Shift

- Limited science on how to address inequities in birth outcomes
- Prenatal care has not been the answer
- Patterns of birth outcome inequities suggest that social factors are involved:
  - Stress, especially chronic stress associated with racism and low income; physiologic pathways documented
  - Social support may directly improve health; affects health behaviors; buffer
  - Empowerment: Self-efficacy plays key role in health behaviors; key to escaping poverty; lack of control at work strongly linked with heart disease

Anakin Skywalker AKA Darth Vader

Conception & Pregnancy:
- Born a slave
- Absent Father

Childhood:
- Child Slave
- Taken from his mother to be trained as a Jedi at age 10
- Abandonment
- Heightened arousal
- Fear of Loss

Adolescence:
- Exposure to violence via Clone Wars
- Taken from his family

Adulthood:
- Unplanned multip pregnancy (Luke & Leia)
- Lacks Trust
- Corrupting influences (Sith Lord Darth Sidious)
- Domestic Violence in Marriage to Padme
- Severely burned
- Death Star Explosion
- Ongoing war
- Premature death
How do we improve health?

Clinical Interventions

Individual Counseling & Group Education

Protective Interventions

Changing the context

Socioeconomic Factors

What is the Role of Public Health?

POLICY DEVELOPMENT
- Health Care Coverage
- Addressing Institutionalized Racism
- Changing the Context

ASSESSMENT
- WIGO: What is going on?
- Surveillance Data
- Multi-level/ Place Based
- Context Data

ASSURANCE
- Care Quality
- Health Literacy
- Care Coordination
Unintended Pregnancy and Preconception Health

Profile of women giving birth
Los Angeles County, 2012

Income
- 54% had an annual household income of less than $40,000

Ethnicity
- 58% Hispanic
- 15% Asian/Pacific Islander
- 7.6% Black

Education
- High percentage of women giving birth did NOT complete high school (22%)
Preconception Health Indicators
Los Angeles County, 2012

Almost half of women weighed too much at conception.

Data Source: Los Angeles Mommy and Baby (LAMB) 2012 Survey
Data are weighted to represent the population of mothers who gave a live birth in Los Angeles County in 2012.

Unintended Pregnancies
Los Angeles County, 2012

Almost 47% of live births in result from mistimed or unwanted pregnancies.

Percent of mothers in Los Angeles County with a recent live birth by Race/Ethnicity, 2012
Data Source: Los Angeles Mommy and Baby (LAMB) 2012 Survey
Data are weighted to represent the population of mothers who gave a live birth in Los Angeles County in 2012.
Is this the % of women who did not drink for 3 months before pregnancy
pieterszd, 4/21/2012
Logic Model: Unintended Pregnancy

Risk Factors
- Young age
- Low Education Level
- Single/Cohabitating
- Chronic Medical Condition
- History of Substance Abuse
- Exposure to Violence and Trauma
- Access to or social norms around contraception

Pregnancy Sequelae
- Late Prenatal Care initiation
- Preterm delivery
- Small for gestational age
- Perinatal mood disorders
- Infant Mortality

Postpartum Sequelae
- Short Birth Spacing
- Lower Breastfeeding initiation and duration
- Subsequent unintended pregnancy
- Postpartum Mood disorders

Policy: Preventive Services For Women

- Contraceptive methods and counseling for all FDA approved methods
- Annual Well-Woman visits
- Human Papillomavirus testing
- Counseling for Sexually Transmitted Infections
- Counseling and screening for HIV
- Screening and counseling for interpersonal and domestic violence
- Breastfeeding support, supplies and counseling
- Screening for Gestational Diabetes

Social Determinants of Risk Factors for Unintended Pregnancy

- Home Environment
- Cultural Racism: Differences in Educational Expectations
- Historical Trauma: Intergenerational risk factors for unhealthy/unstable relationships
- Institutional Racism:
  - School Funding by Neighborhood Tax Revenue
  - School to Prison Pipeline
  - Disparities in Sexual Health Education
  - Disparities in Health Care Provision

Reproductive Life Planning (RLP)

- A set of personal goals about having (or not having) children and a plan
- Planning helps a men and women think about how they want to live their life
- Based on personal values and resources: Not prescriptive
- Preventive
- Holistically focused – Many settings
- Relevant to goals beyond reproduction: Interagency Collaboration and Referrals

**Counseling Rates are Low**

Less than half of the women were asked whether they wanted to become pregnant in the future during their most recent routine healthcare visit.

California Women’s Health Survey data from 2009-2010 were analyzed for the 2,807 non-pregnant women aged 18-44 years who reported a routine visit in the past two years, to determine whether health care providers had talked about the following preconception health topics during their most recent routine visit: diet or exercise, pregnancy plans, smoking, dental care, and folic acid use.

...Even Among Women who Discussed Future Pregnancy Plans

Even among women reporting a discussion of pregnancy plans with their provider, most said they did not talk about folic acid; however, providers who did not discuss pregnancy plans were even less likely to talk about folic acid.

California Women’s Health Survey data from 2009-2010 were analyzed for the 2,807 non-pregnant women aged 18-44 years who reported a routine visit in the past two years, to determine whether health care providers had talked about the following preconception health topics during their most recent routine visit: diet or exercise, pregnancy plans, smoking, dental care, and folic acid use.
Facts

- The average woman is fertile for 39 years and spends 3 decades trying to avoid an unintended pregnancy
- Currently, about half (51%) of the 6.6 million pregnancies in the United States each year are unintended
- By age 45, more than half of all American women will have experienced an unintended pregnancy

One Key Question ®

- Encourages providers to routinely ask women about their reproductive health needs
- Would you like to become pregnant in the next year?
- Settings to implement
  – Primary Care
  – Specialist
  – Hospital Discharge
RLP and Adolescents

• Today’s adolescents are tomorrow’s workforce, leaders and parents
• Many risk behaviors and lifestyle habits can be addressed during adolescence, resulting in better quality of life for teens now, and improved outcomes for themselves and their children, if and when they become parents.
• Young people think about what it means to be a parent and are interested in the discussion

“Adults always tell us WHAT to do. You told us why. I’m more motivated to act when I know why.”
--High School Student in an evaluation form for the March of Dimes Preconception Health Reproductive Life Planning Curriculum

Cost Savings

• Only $26 per year covers the cost of providing a broad range of contraceptive care

• Every dollar spent on preconception care saves $1.60 -$5.19 in hospitalization costs for mothers & babies

• Among pregnant women with diabetes, preconception care could
  – Save $4.3 billion in costs to healthcare system
  – Prevent 8,397 preterm deliveries, 3,725 birth defects, and 1,872 perinatal deaths annually.
Review of Key Concepts

• Life Course Perspective
  – Considers health an integrated continuum across the life course
  – Health outcomes across the life span result from a complex interplay of biological, behavioral, social, and environmental factors
  – Critical developmental periods such as pregnancy, childhood, and adolescence differentially impact health trajectories
  – Opportunities to address institutional racism and abate risk factors with protective factors

Practical Application

When I return to work, I will...

- [ ] start
- [ ] STOP
- [ ] Continue
Acknowledgements

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