California Department of PublicHealth

Family Health Outcomes Project

Conducting a Problem Analysis

Nov. 2018

Family Health Outcomes Project, UCSF

Jennifer Rienks, PhD & Adrienne Shatara, MPH

Objectives of this presentation

- Review the reasons for and benefits of conducting a problem analysis (PA)
- Describe the steps for conducting a PA with your stakeholder group
- Articulate the components of a PA diagram
- Describe how the PA process reflects the social determinants of health
- Identify causal pathways and intervention points
- Understand how a sample PA diagram can be used and adapted to reflect your local context

Family Health Outcomes Project

CDPH California Department of PublicHealth

Scenario

- As the local MCAH Director, you have reviewed your needs assessment indicator data, shared key data with your stakeholders and together have identified 5 priority areas
- What other information is needed to understand a particular problem?
- What process can be used to promote group understanding and consensus on causes and possible interventions
- What further information is needed to make decisions about where to direct resources?
- What programs would be effective in addressing this problem?

Family Health Outcomes Project

CDPH California Department of PublicHealth

Conducting a Problem Analysis

- PA is a process for diagraming a health issue that incorporates social determinants and life course concepts
- It uses a socio-ecological framework
- Chapter III in the FHOP Planning Guide provides a narrative for using this process
- Sample PA diagrams for looking at the most frequently identified MCAH problems in LHJs are posted on state's website (NEED NEW LINK)

Family Health Outcomes Project

CDPH California Department of PublicHealth

Why do a Problem Analysis?

- To identify effective intervention strategies, need to understand complex array of underlying factors that can impact health outcomes and how factors relate to one another
- To assure a rational allocation of resources
- To assist in targeting limited resources to those factors that play the biggest role in causing the problem and/or factors we can impact
- To mitigate the risk of allocating resources based on political pressure

Family Health Outcomes Project

CDPH California Department of PublicHealth

Why do a Problem Analysis? (con.t)

- Using a multilevel socio-ecological framework ensures that upstream factors are included
- Relating upstream precursors to downstream outcomes forces us to explore the pathways by which upstream factors operate in a specific situation
- Assists in identification of short, intermediate and longer term objectives

Family Health Outcomes Project

CDPH California Department of PublicHealth

Steps in a Problem Analysis

1. Examine epidemiologic data

2. Examine literature and consult experts *(if possible and as needed)*

3. Determine extent to which these factors are active in the community

Family Health Outcomes Project

CDPH California Department of PublicHealth

Steps in a Problem Analysis

4. Determine relative contribution of each identified factor

5. Identify the interrelationships among factors – causal pathways

6. Determine the most effective points in the causal pathways for intervention

Family Health Outcomes Project

CDPH California Department of PublicHealth

Step 1: Review Epidemiology of the Problem

- How does the rate compare to a standard? (i.e. Healthy People 2020)
- Is the problem increasing or decreasing?
- Is a particular group more affected than other groups and why?
- When does the disease / problem occur?
- What causes the problem?

Family Health Outcomes Project

CDPH California Department of PublicHealth

Step 2: Review Literature and Consult Experts *(as needed)*

- To identify causal or risk factors:
  - Search the Web
  - Conduct a literature search or locate one done by reliable source (check FHOP's website)
  - Invite experts to participate
- For the Needs Assessment, state MCAH program reviewed the literature and consulted experts to identify causal or risk factors included in the sample PAs

Family Health Outcomes Project

CDPH California Department of PublicHealth

A Generic Framework for Health Problem Analysis

Social / Economic / Policy Level

SES

Safety

Education

Culture

Environment

Health Care Policies

Economy

Family / Community / Institutions Level

Family / Household

School / Workplace

Community

Health Care / Providers

Individual Level

Genetic / Biological

Psychological Factors

Health Status / Medical Conditions

Cognitive Factors

Health Behaviors

Identified Problem / Target Outcome(s)

Family Health Outcomes Project

California Department of Public Health

Definitions: Precursors

Factors that have been proven to be associated with the problem

- Causal factor
- Risk factor
- Systems barriers
- Protective factors

Family Health Outcomes Project

CDPH California Department of PublicHealth

Individual Level - Primary Precursors

Definition:

Factors that operate on the level of the individual (or for a child it could be the parent) that directly cause the outcome in question (cause/effect should be supported by peer reviewed studies)

OR

Factors that increase the risk of an individual's likelihood of having the outcome of concern

(documented risk)

Family Health Outcomes Project

CDPH California Department of PublicHealth

Primary Precursors:
Examples for Lack of early Prenatal Care

- Pregnant woman with previous uncomplicated pregnancies doesn't see the value of early prenatal care
- Pregnant woman is using drugs or alcohol/fear of prosecution or losing custody of child
- Pregnant woman is homeless

Family Health Outcomes Project

CDPH California Department of PublicHealth

Family/Local Community/ Institutional Level Precursors – Secondary Precursors

Definition:

Factors that operate at the level of the family or local community or institution(s) that increase an individual's risk of developing a direct precursor

May include local institutions such as health provider's characteristics that are often, but not always, associated with the problem or its determinants

Secondary Precursor / Risk Factor: Examples of Lack of early Prenatal Care

- Lack of transportation
- Lack of local prenatal care providers accepting Medi-Cal
- Complicated forms for enrolling in insurance

Family Health Outcomes Project

CDPH California Department of PublicHealth

Social/Economic/Policy Level Precursors

Definition:

Factors that are operational at the state or national level such as cultural, health, social, legal or economic policies

Family Health Outcomes Project

CDPH California Department of PublicHealth

Social / Economic / Policy - Level Precursor: Examples of Lack of early entry into Prenatal Care

- Immigration laws and/or Medi-Cal regulations that deny many services to the undocumented
- Fear of being deported, declared a 'public charge'
- Low Medi-Cal reimbursement rates for providers
- Poverty
- Racism

Family Health Outcomes Project

CDPH California Department of PublicHealth

Systems Barriers and Protective Factors

Definitions

Systems Barriers

Attributes of health and other related systems that are associated with a negative outcome (i.e. lack of coordination of social and/or medical services for the poor)

Protective Factors

Attributes of family, culture, social systems or the environments associated with a positive outcome (i.e. active and strong community/family networks and safe places for exercise and recreation)

Family Health Outcomes Project

CDPH California Department of PublicHealth

Consequences

Definition:

The effects of the problem on individuals, families and society.

Can include financial, physical and psychological effects on the individual, the family or the community

Family Health Outcomes Project

CDPH California Department of PublicHealth

Consequences:
Example of Lack of early Prenatal Care

- Delays timely diagnosis and management of maternal and fetal problems resulting in higher maternal and infant morbidity and mortality
- Potential for delays in child development

Family Health Outcomes Project

CDPH California Department of PublicHealth

Social / Economic / Policy Level

Racial and social discrimination

High Unemployment

Inadequate subsidized health Insurance for the poor

Poverty

Low Medi-Cal reimbursement rates

Limited availability of health services

Family / Community / Institutional Level

Lack of affordable services

Family lacks health Insurance

Lack of local providers accepting Medi-Cal

Family has limited income

Language / Cultural barriers

Lack of transportation

Individual Level

Lack of knowledge

Lack of transportation

Client doesn't know she is pregnant

Homelessness

Target Outcome(s):

Prenatal care

Family Health Outcomes Project

California Department of Public Health

Step 3: Determine Whether Identified Factors are Relevant

- Consult with state or local experts (*if needed and available*)
- Identify studies or results of surveys of the target community
- Consult with stakeholders and other local agencies or institutions

Family Health Outcomes Project

CDPH California Department of PublicHealth

Step 4: Determine the Contribution of Identified Factors

- Epidemiologists/data analysts use a variety of statistical tests to determine the magnitude of impact of a particular risk/causal factor on prevalence of a negative health outcome, e.g. what proportion of your LBW can be attributed to smoking vs. proportion attributed to untreated chronic infection or lack of prenatal care
- 1) review related health indicator data to determine prevalence of causal or risk factor in the population, e.g. for LBW look at % women who smoke, get STIs, use alcohol and drugs

Family Health Outcomes Project

CDPH California Department of PublicHealth

4. Determine the Contribution of Identified Factors (cont.)

- 2) discover from available data or experts what % of women with particular risk factors are likely to have a low birthweight infant
- 3) estimate how many low birthweight births are the result of exposure to the particular risk factor
- From this, you can determine which of the risk factors is causing the greatest proportion of LBW births in your community and target that factor in your interventions.

Family Health Outcomes Project

CDPH California Department of PublicHealth

What information do I need to know be able to identify a causal pathway?

- Which populations are most at risk?
- Which risk or causal factors are most strongly associated with the identified problem?
- Which factor(s) contributes most to the size of this problem?
- Which point of intervention will have the greatest potential for improving an outcome?

Family Health Outcomes Project

CDPH California Department of PublicHealth

Additional FHOP Resources

- Online Trainings on data analysis and statistics, including statistical methods (i.e. risk analysis) for determining contributions of identified factors
- Data Templates for calculating rates, confidences, trends and risk statistics
- http://fhop.ucsf.edu

Family Health Outcomes Project

CDPH California Department of PublicHealth

Using the Sample Problem Analysis Diagrams on State's website

- 22 expert-informed sample problem analysis diagrams organized by MCAH goals
- (NEED NEW LINK)
- Diagrams have menus of precursors and can be used as a starting point for creating a diagram that reflects local situation

Family Health Outcomes Project

CDPH California Department of PublicHealth

Exercise 1

- Modifying a sample problem analysis diagram from state website to reflect local situation in Daisy County, CA

Family Health Outcomes Project

CDPH California Department of PublicHealth

Premature Births: Problem Analysis Diagram

Social/Economic/Policy Level

Social issues
Racial and social discrimination
Poverty
Cultural practices

Economic Issues
High unemployment due to federal policies
Lack of workplace regulations for pregnant women

Environmental Factors
Lack of regulation of toxins harmful to pregnant women

Health care
High cost/ unaffordable insurance
Lack of public health education programs on prematurity prevention/recognition of premature labor symptoms
Limited availability of health services

Education
Poor education for low income residents in public schools

Family/Community/Institutional Level

Community
Unaffordable housing
Lack of jobs
Transportation problems
High poverty rate
Environmental toxins
Unavailable healthy foods
Single mother norm

Health care system
Lack of adequate health insurance
Limited access to health/dental care
Lack of affordable family planning
Lack of culturally-sensitive services
Lack of prevention educational materials and counseling on symptoms of premature labor
Early elective deliveries <39 weeks

Maternal behaviors
Tobacco use
Alcohol/substance abuse
Poor nutrition
Untreated maternal infections
Sexually transmitted diseases
Multiple abortions

Maternal characteristics
Stress/ mental health issues
Chronic medical conditions: e.g. diabetes hypertension
Lack of knowledge about symptoms of preterm labor/preterm labor risks
Lack of social support
Teen mother
Previous premature birth
Lack of prenatal care
African American ancestry
Short inter-pregnancy interval

Individual Level

Genetic/ congenital abnormalities

Exposure to cigarette smoke, alcohol or illicit drugs in utero

Uterine factors
Uterine trauma secondary to intentional/ unintentional injury Cervical or uterine anomaly
Abruptio placenta/placenta previa
Chorioamnioitis

Multiple pregnancies

Exposure to high cortisol levels in utero

Environmental toxins

Target Outcome(s): Premature Births; preconception health; maternal health and mental wellness; provider and public education

Consequences: Cerebral Palsy; Intellectual Disabilities; Visual Problems: Hearing Loss, Respiratory Problems (acute and chronic); Feeding and Digestive problems, High cost for care over lifetime

Social / Economic / Policy Level

Family / Community / Institutional Level

Individual Level

Target Outcome(s):

Premature Births

Family Health Outcomes Project

California Department of Public Health

Step 5: Identify Causal Pathways

Process: Review your data, consult experts/consult stakeholders/search on-line sources to determine the association between causes and risks and negative health outcomes

- Determine how identified causal and risk factors interact with each other to either increase chances of a negative outcome or promote a positive one
- Determine the sequence of events/behaviors that lead to the negative outcome

Family Health Outcomes Project

CDPH California Department of PublicHealth

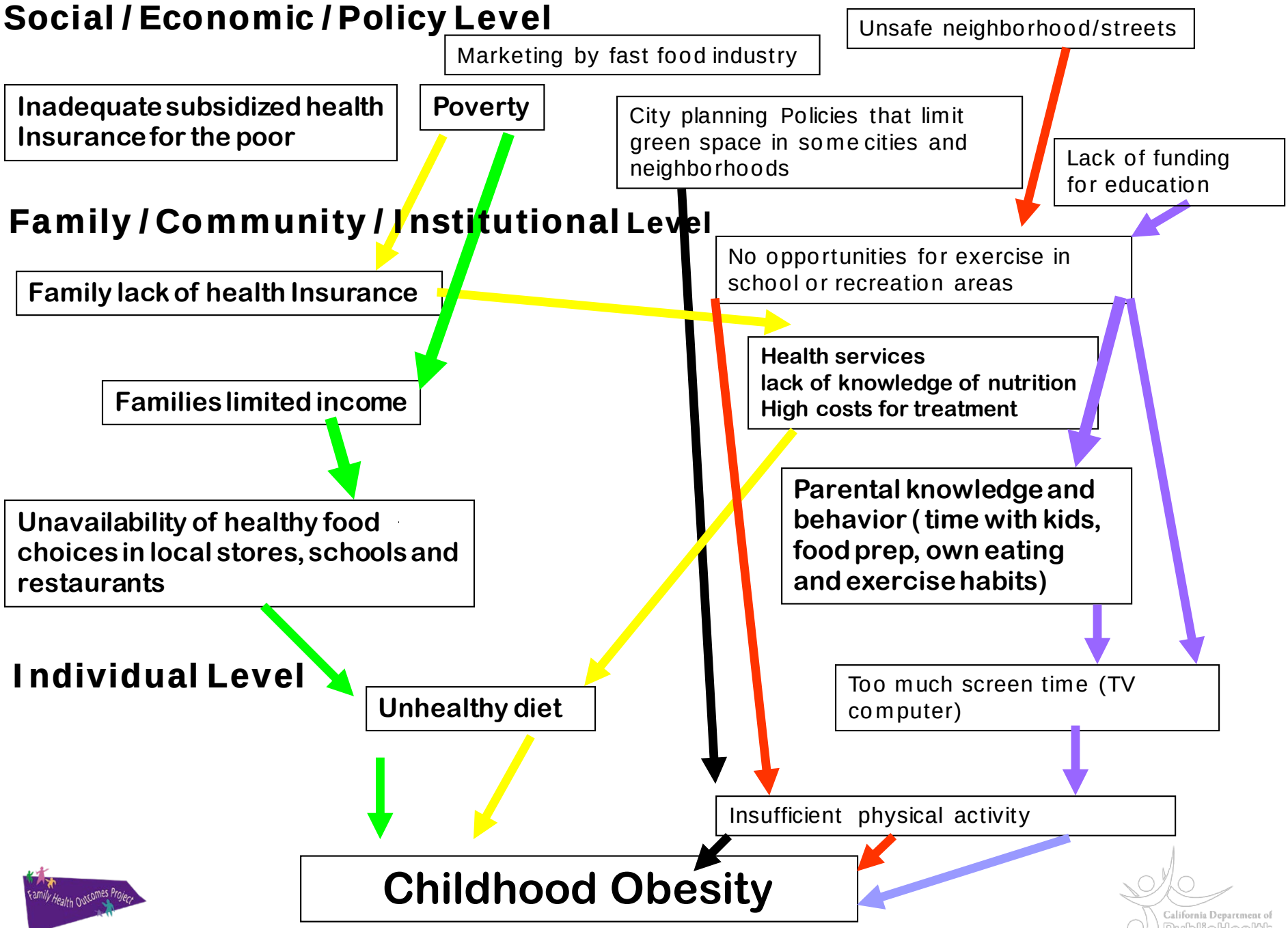
Process for Working with Stakeholder Group on Causal Pathways

Options

- Ask each member to quietly review the diagram and using her/his knowledge and experience propose one pathway. Then have people share.

Or

- Break into small groups and have each groups propose a pathway and have groups share

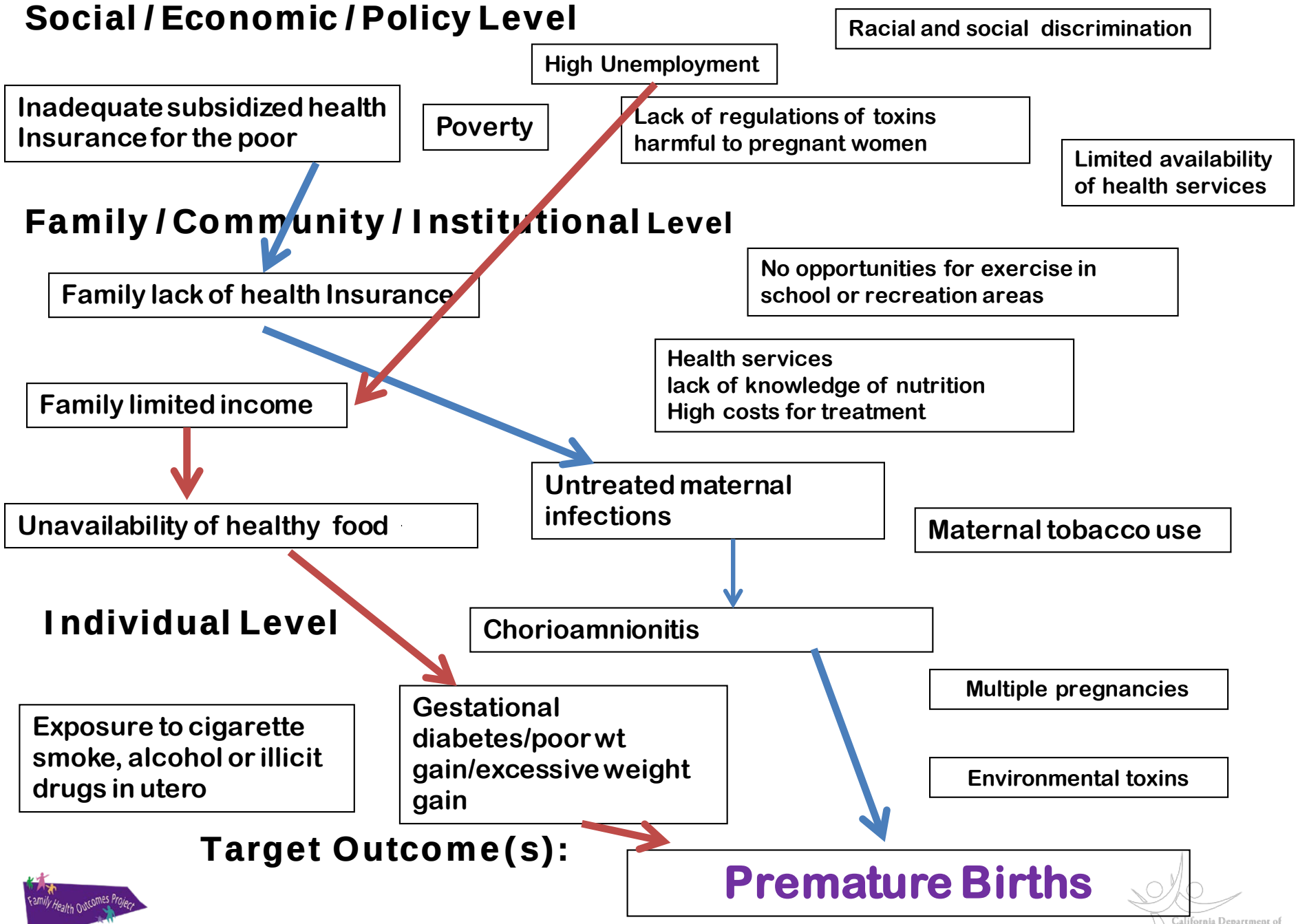

Social / Economic / Policy Level
Marketing by fast food industry
Unsafe neighborhood/streets
Inadequate subsidized health Insurance for the poor
Poverty
City planning Policies that limit green space in some cities and neighborhoods
Lack of funding for education
Family / Community / Institutional Level
No opportunities for exercise in school or recreation areas
Family lack of health Insurance
Health services
lack of knowledge of nutrition
High costs for treatment
Families limited income
Parental knowledge and behavior (time with kids, food prep, own eating and exercise habits)
Unavailability of healthy food choices in local stores, schools and restaurants
Individual Level
Too much screen time (TV computer)
Unhealthy diet
Insufficient physical activity
Childhood Obesity
Family Health Outcomes Project
California Department of PublicHealth

Exercise 2

- Identifying causal pathways and intervention points in Daisy County's problem analysis diagram

Family Health Outcomes Project

CDPH California Department of PublicHealth


Social / Economic / Policy Level
Racial and social discrimination
High Unemployment
Inadequate subsidized health Insurance for the poor
Poverty
Lack of regulations of toxins harmful to pregnant women
Limited availability of health services
Family / Community / Institutional Level
Family lack of health Insurance
No opportunities for exercise in school or recreation areas
Health services
lack of knowledge of nutrition
High costs for treatment
Family limited income
Untreated maternal infections
Unavailability of healthy food
Maternal tobacco use
Individual Level
Chorioamnionitis
Multiple pregnancies
Exposure to cigarette smoke, alcohol or illicit drugs in utero
Gestational diabetes/poor wt gain/excessive weight gain
Environmental toxins
Target Outcome(s):
Premature Births
Family Health Outcomes Project
California Department of PublicHealth

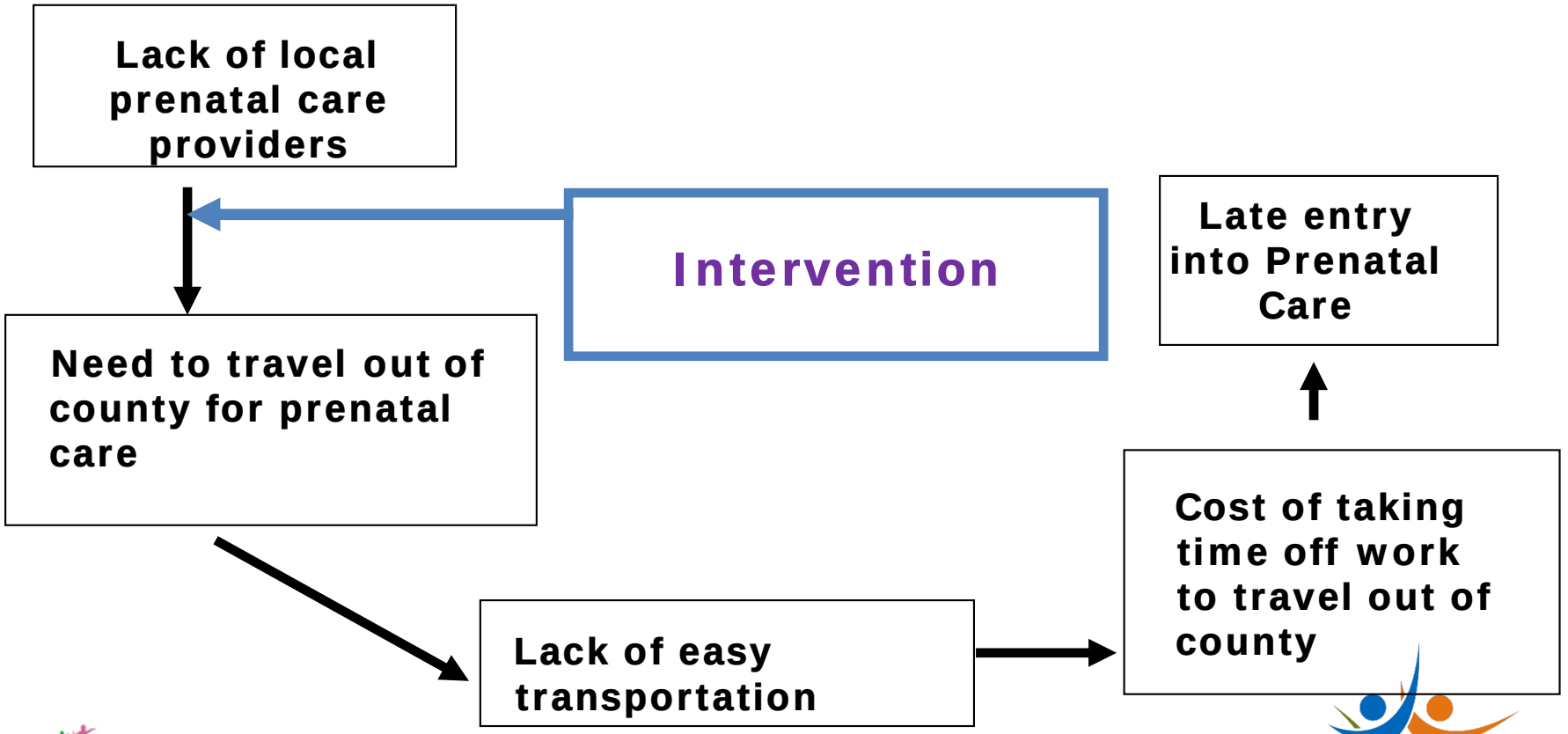
Step 6: Determine Intervention Points

- Determine where you would get the greatest effect
- Determine whether there have been well evaluated interventions
- Assess the available resources

Family Health Outcomes Project

CDPH California Department of PublicHealth

Diagramming Causal Pathways to Identify Strategic Interventions



Family Health Outcomes Project

CDPH California Department of PublicHealth

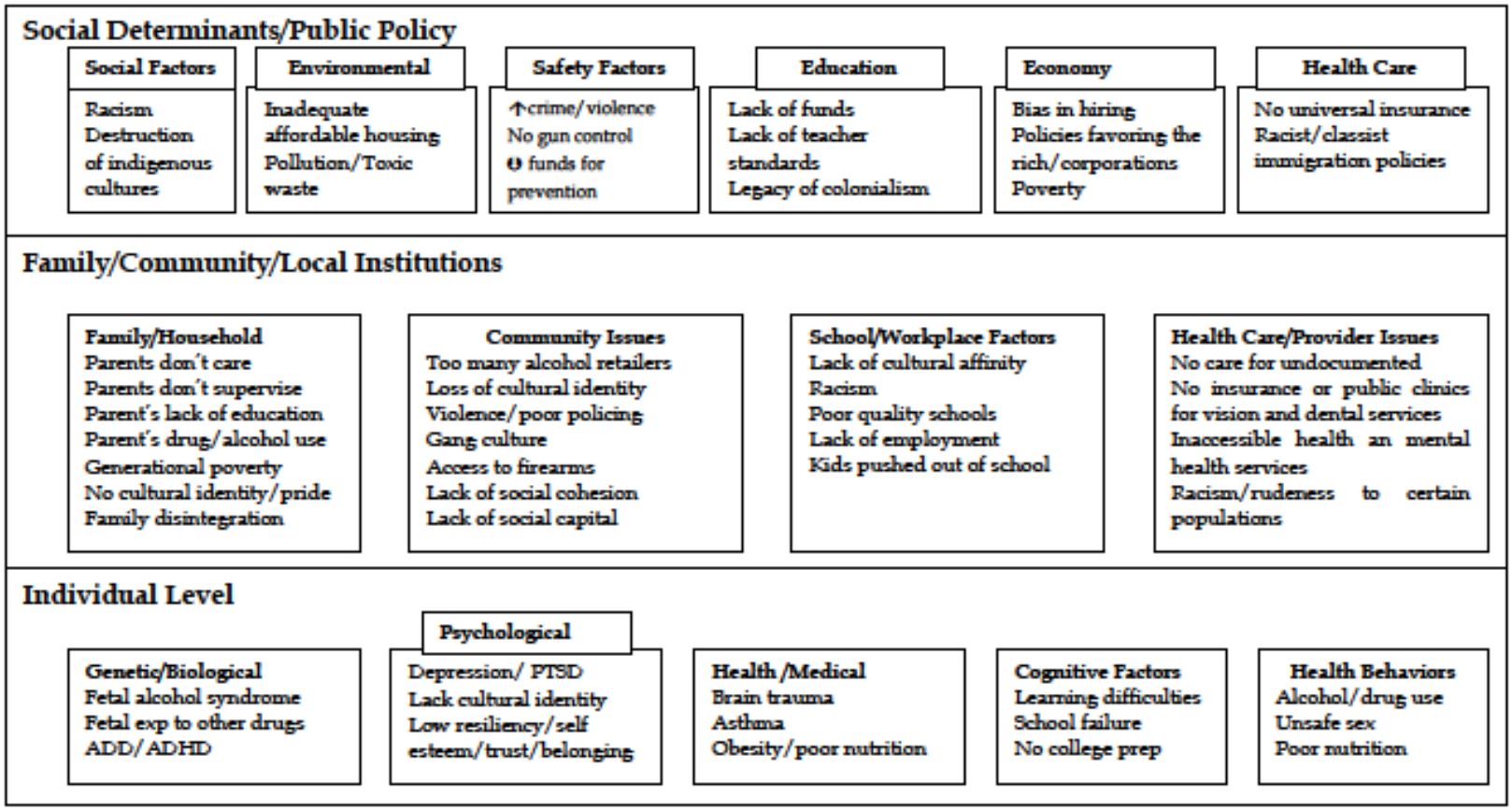
Benefits

- Clearly documents the decision making process for the group and for others
- Can use simplified problem analysis or causal pathway diagram to communicate rationale for intervention strategy to policy makers and the public

Family Health Outcomes Project

CDPH California Department of PublicHealth

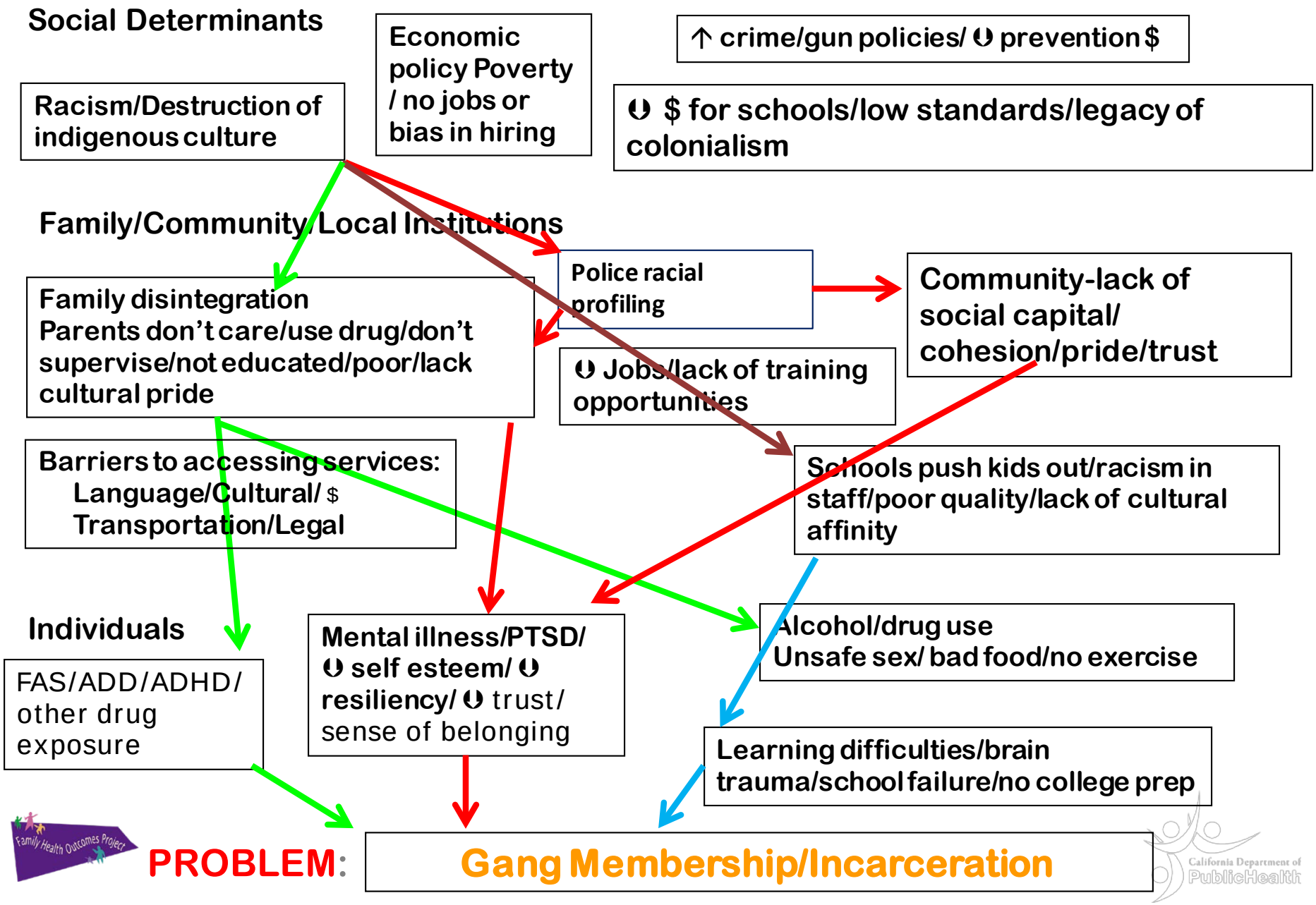
1. *Problem Analysis Diagram Youth Incarceration*



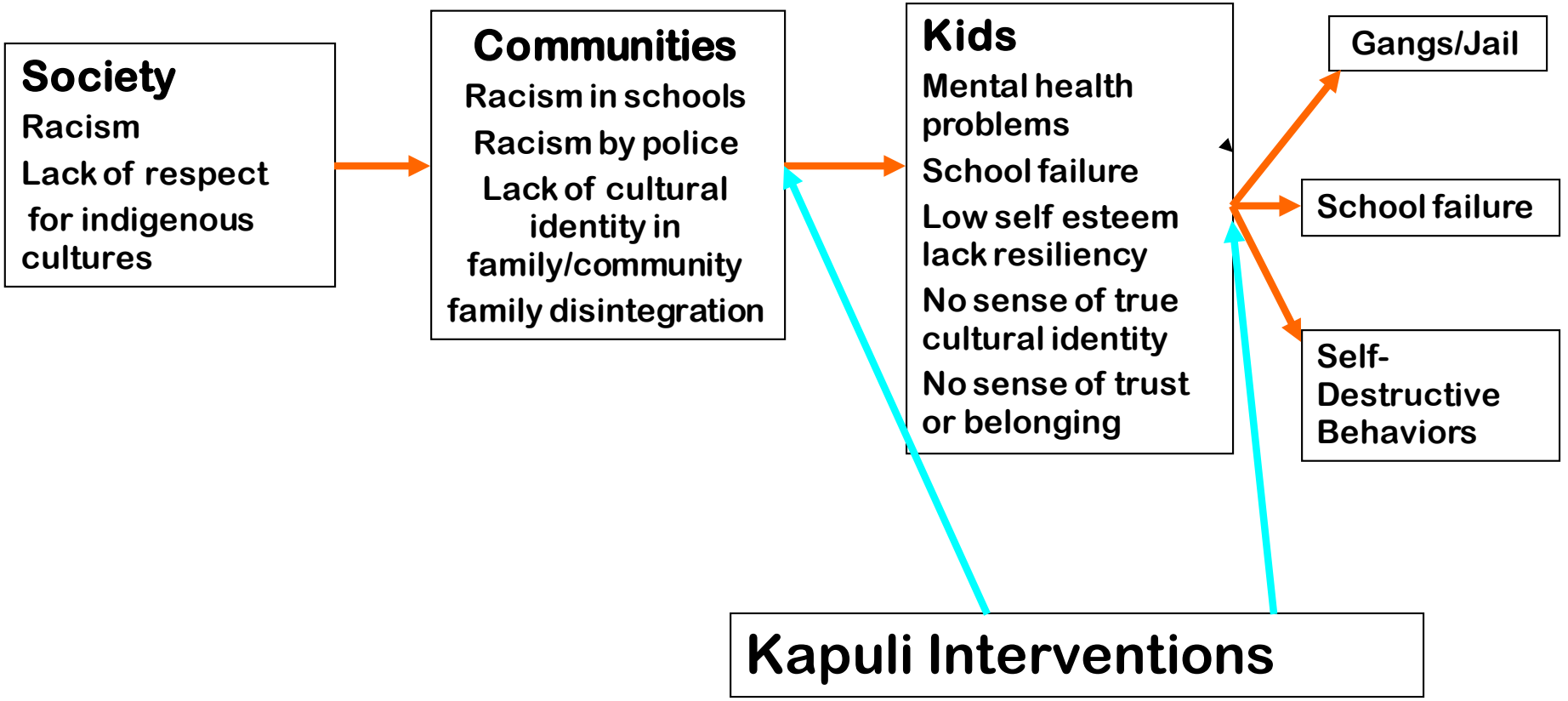
Targeted Indicator Gang membership/Incarcerations

Consequences Costly health consequences/ family poverty/loss of young workers

Problem Analysis – Homey Clients



HOMEY- Kapuli Causal Pathway: Program Intervention Points



Family Health Outcomes Project
California Department of PublicHealth

MOMEY-Kapuli Logic Model

INPUTS

Staff
Cameron
Space
Core Members
Funds

OUTPUTS

Activities	Participation
Street outreach Educate about history of social justice movements for people of color/indigenous 10 strategies for change Teach about racism/colonialism	Schools CBO's Kids from streets

OUTCOMES – IMPACT

Short	Medium	Long-Term
Positive response during recap activity Active participation in group Successful school/CBO outreach	Come back Join political campaigns Attend ceremonies Express value of social action Increase self esteem/resiliency/capacity for action	Kids return to school Kids get jobs Kids stay out of gangs Kids stay out of jail

ASSUMPTIONS:

Learning about history of social justice movements will give them tools for change

Learning about impact of racism/colonialism will give kids an undestanding of their own history

Episodes of tragedy due to racism in their community

Media/movie about examples of racism/harassment by police

ENVIRONMENTAL FACTORS

Adapted from Family Health Outcomes Project

California Department of PublicHealth

Questions?

Family Health Outcomes Project

CDPH California Department of PublicHealth

Contact Information

Family Health Outcomes Project

University of California, San Francisco

500 Parnassus Ave., Room MU-337

San Francisco, CA 94143-0900

Phone: 415-476-5283

Email: FHOP@ucsf.edu

Web site: http://fhop.ucsf.edu