Conducting a Problem Analysis

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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
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?
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**)
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
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.
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
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
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?
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
A Generic Framework for Health Problem Analysis

Social/Economic/Policy Level
- SES
- Culture
- Environment
- Safety
- Health Care Policies
- Education
- Economy

Family/Community/Institutions Level
- Family/Household
- Community
- School/Workplace
- Health Care/Providers

Individual Level
- Genetic/Biological
- Psychological Factors
- Cognitive Factors
- Health Status/Medical Conditions
- Health Behaviors

Identified Problem/Target Outcome(s)
Definitions: Precursors

Factors that have been proven to be associated with the problem

- Causal factor
- Risk factor
- Systems barriers
- Protective factors
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)
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/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
Definition:

Factors that are operational at the state or national level such as cultural, health, social, legal or economic policies
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
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)
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.
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
Target Outcome(s):

**Prenatal care**

**Individual Level**
- Lack of knowledge
- Lack of transportation
- Homelessness

**Family/Community/Institutional Level**
- Family lacks health Insurance
- Family has limited income
- Lack of transportation
- Lack of local providers accepting Medi-Cal
- Language / Cultural barriers
- Limited availability of health services

**Social/Economic/Policy Level**
- Inadequate subsidized health Insurance for the poor
- Poverty
- Lack of transportation
- Lack of affordable services
- High Unemployment
- Racial and social discrimination
- Low Medi-Cal reimbursement rates
- Limited availability of health services
- Poverty
- Inadequate subsidized health Insurance for the poor
- Low Medi-Cal reimbursement rates
- Racial and social discrimination
- Limited availability of health services
- Family lacks health Insurance
- Poverty
- Lack of transportation

- Family has limited income
- Lack of transportation
- Lack of affordable services
- Racial and social discrimination
- Homelessness
- Low Medi-Cal reimbursement rates
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
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.
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.
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?
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](http://fhop.ucsf.edu)
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
Exercise 1

- Modifying a sample problem analysis diagram from state website to reflect local situation in Daisy County, CA
### Social/Economic/Policy Level

<table>
<thead>
<tr>
<th>Social issues</th>
<th>Economic Issues</th>
<th>Environmental Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racial and social discrimination</td>
<td>High unemployment due to federal policies</td>
<td>Lack of regulation of toxins harmful to pregnant women</td>
</tr>
<tr>
<td>Poverty</td>
<td>Lack of workplace regulations for pregnant women</td>
<td></td>
</tr>
<tr>
<td>Cultural practices</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Family/Community/Institutional Level

<table>
<thead>
<tr>
<th>Community</th>
<th>Health care system</th>
<th>Maternal behaviors</th>
<th>Maternal characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaffordable housing</td>
<td>Lack of adequate health insurance</td>
<td>Tobacco use</td>
<td>Stress/ mental health issues</td>
</tr>
<tr>
<td>Lack of jobs</td>
<td>Limited access to health/dental care</td>
<td>Alcohol/substance abuse</td>
<td>Chronic medical conditions: e.g. diabetes</td>
</tr>
<tr>
<td>Transportation problems</td>
<td>Lack of affordable family planning</td>
<td>Poor nutrition</td>
<td>hypertension</td>
</tr>
<tr>
<td>High poverty rate</td>
<td>Lack of culturally-sensitive services</td>
<td>Untreated maternal infections</td>
<td>Lack of knowledge about symptoms of preterm labor</td>
</tr>
<tr>
<td>Environmental toxins</td>
<td>Lack of prevention educational materials and counseling on symptoms of premature labor</td>
<td>Sexually transmitted diseases</td>
<td>preterm labor risks</td>
</tr>
<tr>
<td>Unavailable healthy foods</td>
<td>Early elective deliveries &lt;39 weeks</td>
<td>Multiple abortions</td>
<td>Lack of social support</td>
</tr>
<tr>
<td>Single mother norm</td>
<td></td>
<td></td>
<td>Teen mother</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Previous premature birth</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lack of prenatal care</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>African American ancestry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Short inter-pregnancy interval</td>
</tr>
</tbody>
</table>

### Individual Level

<table>
<thead>
<tr>
<th>Genetic/ congenital abnormalities</th>
<th>Uterine factors</th>
<th>Multiple pregnancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to cigarette smoke, alcohol or illicit drugs in utero</td>
<td>Uterine trauma secondary to intentional/ unintentional injury Cervical or uterine anomaly</td>
<td>Exposure to high cortisol levels in utero</td>
</tr>
<tr>
<td></td>
<td>Abruptio placenta/placenta previa/ Chorioamnionitis</td>
<td>Environmental toxins</td>
</tr>
</tbody>
</table>

### Premature Births: Problem Analysis Diagram

**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
Target Outcome(s): Premature Births
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
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
Unavailability of healthy food choices in local stores, schools and restaurants

Parental knowledge and behavior (time with kids, food prep, own eating and exercise habits)

Families limited income

Unavailability of healthy food choices in local stores, schools and restaurants

Marketing by fast food industry

City planning Policies that limit green space in some cities and neighborhoods

Lack of funding for education

Families limited income

Health services lack of knowledge of nutrition High costs for treatment

Parental knowledge and behavior (time with kids, food prep, own eating and exercise habits)

Too much screen time (TV computer)

Unhealthy diet

Insufficient physical activity

Childhood Obesity
Exercise 2

- Identifying causal pathways and intervention points in Daisy County’s problem analysis diagram
Target Outcome(s):

Premature Births

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**Social/Economic/Policy Level**

- Inadequate subsidized health Insurance for the poor
- High Unemployment
- Poverty
- Lack of regulations of toxins harmful to pregnant women
- Limited availability of health services

**Family/Community/Institutional Level**

- Family lack of health Insurance
- Family limited income
- Unavailability of healthy food
- No opportunities for exercise in school or recreation areas
- Health services lack of knowledge of nutrition High costs for treatment
- Maternal tobacco use

**Individual Level**

- Chorioamnionitis
- Untreated maternal infections
- Gestational diabetes/poor wt gain/excessive weight gain
- Multiple pregnancies
- Environmental toxins
- Exposure to cigarette smoke, alcohol or illicit drugs in utero

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California Department of Public Health
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
Diagramming Causal Pathways to Identify Strategic Interventions

Lack of local prenatal care providers

Need to travel out of county for prenatal care

Intervention

Late entry into Prenatal Care

Cost of taking time off work to travel out of county

Lack of easy transportation
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
## Problem Analysis Diagram Youth Incarceration

### Social Determinants/Public Policy
- **Social Factors**
  - Racism
  - Destruction of indigenous cultures

- **Environmental**
  - Inadequate affordable housing
  - Pollution/Toxic waste

- **Safety Factors**
  - Crime/violence
  - No gun control
  - Lack of funds for prevention

- **Education**
  - Lack of funds
  - Lack of teacher standards

- **Economy**
  - Bias in hiring
  - Policies favoring the rich/corporations

- **Health Care**
  - No universal insurance
  - Racist/classist immigration policies

### Family/Community/Local Institutions
- **Family/Household**
  - Parents don’t care
  - Parents don’t supervise
  - Parent’s lack of education
  - Parent’s drug/alcohol use
  - Generational poverty
  - No cultural identity/pride
  - Family disintegration

- **Community Issues**
  - Too many alcohol retailers
  - Loss of cultural identity
  - Violence/poor policing
  - Gang culture
  - Access to firearms
  - Lack of social cohesion
  - Lack of social capital

- **School/Workplace Factors**
  - Lack of cultural affinity
  - Racism
  - Poor quality schools
  - Lack of employment
  - Kids pushed out of school

- **Health Care/Provider Issues**
  - No care for undocumented
  - No insurance or public clinics for vision and dental services
  - Inaccessible health and mental health services
  - Racism/rudeness to certain populations

### Individual Level
- **Genetic/Biological**
  - Fetal alcohol syndrome
  - Fetal exposure to other drugs
  - ADD/ADHD

- **Psychological**
  - Depression/PTSD
  - Lack of cultural identity
  - Low resiliency/self esteem/trust/belonging

- **Health/Medical**
  - Brain trauma
  - Asthma
  - Obesity/poor nutrition

- **Cognitive Factors**
  - Learning difficulties
  - School failure
  - No college prep

- **Health Behaviors**
  - Alcohol/drug use
  - Unsafe sex
  - Poor nutrition

### Targeted Indicator
- Gang membership/Incarcerations

### Consequences
- Costly health consequences/family poverty/loss of young workers
Problem Analysis – Homey Clients

Social Determinants

- Racism/Destruction of indigenous culture
- Economic policy: Poverty / no jobs or bias in hiring
- $ for schools/low standards/legacy of colonialism

Family/Community/Local Institutions

- Family disintegration: Parents don’t care/use drug/don’t supervise/not educated/poor/lack cultural pride
- Police racial profiling
- Community-lack of social capital/cohesion/pride/trust
- Jobs/lack of training opportunities
- Schools push kids out/racism in staff/poor quality/lack of cultural affinity

Individually

- Barriers to accessing services: Language/Cultural/ $ Transportation/Legal
- Mental illness/PTSD: self esteem/trust/sense of belonging
- Alcohol/drug use: Unsafe sex/bad food/no exercise
- Learning difficulties/brain trauma/school failure/no college prep

PROBLEM:
Gang Membership/Incarceration

Barrier to accessing services: Language/Cultural/ $ Transportation/Legal
HOMEY- Kapuli Causal Pathway: Program Intervention Points

**Society**
- Racism
- Lack of respect for indigenous cultures

**Communities**
- Racism in schools
- Racism by police
- Lack of cultural identity in family/community
- Family disintegration

**Kids**
- Mental health problems
- School failure
- Low self esteem
- Lack of resiliency
- No sense of true cultural identity
- No sense of trust or belonging

**Gangs/Jail**
- School failure
- Self-Destructive Behaviors

**Kapuli Interventions**
Learning about history of social justice movements will give them tools for change. Learning about impact of racism/colonialism will give kids an understanding of their own history.

Episodes of tragedy due to racism in their community. Media/movie about examples of racism/harassment by police.

**ENVIRONMENTAL FACTORS**

**INPUTS**
- Staff
- Cameron
- Space
- Core Members
- Funds

**OUTPUTS**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street outreach</td>
<td>Schools</td>
</tr>
<tr>
<td>Educate about history of social justice movements for people of color/indigenous</td>
<td>CBO’s</td>
</tr>
<tr>
<td>10 strategies for change</td>
<td>Kids from streets</td>
</tr>
<tr>
<td>Teach about racism/colonialism</td>
<td></td>
</tr>
</tbody>
</table>

**OUTCOMES - IMPACT**

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

**ASSUMPTIONS:**
- Adapted from MOMEY-Kapuli Logic Model
Questions?
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