Aug 23, 2022 – Defining Public Health

Definitions

- **health** – "state of complete mental, physical, and social well-being not merely the absence of disease or infirmity"
- **health** – "a positive concept emphasizing social and personal resources, as well as physical capabilities"
- **health** – "a functional state which makes possible the achievement of other goals and activities"
- **health** – "a *dynamic* state or condition that is multidimensional (physical, emotional, social, intellectual, spiritual, and occupational), a resource for living, and results from a person's interactions with and adaptation to the environment

Definitions

- **Health** [*International Epi Assoc*] – A state characterized by:
    - Anatomical, physiological, and psychological integrity,
    - Ability to perform personally valued family, work, and community roles;
    - Ability to deal with physical, biological, psychological, and social stress;
    - A feeling of well-being; and
    - Freedom from the risk of disease and untimely death

Dimensions of Health

- (spiritual, emotional, social, physical, environmental, occupational, financial)

Importance of Health

- Health Quality of Life
- What makes people "healthy" or "unhealthy?"
    - Determinants of health
        1. Genetics
        2. Behavior
        3. Environmental Conditions
        4. Social Circumstances
        5. Health Services
- Cannot coerce change – must understand **<u>why</u>** behavior happens

Public Health "Behaviorism"

- Attitude/Acceptance that:
    - Beliefs skills –Automatically Behavior Change
- Limitations:
    - Costly & ineffective nature of lifestyle approach
    - Lifestyle approaches are often narrowly focused or result in victim blaming
    - Lack of theoretical base
    - Take away resources from "upstream" factors
        - Social determinants of health

Public Health

…promotes and protects the health of people and the communities where they live, learn, work, and play. – American Public Health Association (APHA)

…the science and art of preventing disease, prolonging life and promoting health… through organized community effort. –Winslow CEA

…organized community efforts aimed at the prevention of disease and the promotion of health. –Institute of Medicine

- Mission: to fulfill society's interest in assuring conditions in which people can be healthy. –Institute of Medicine

Public Health v. Medicine

	Public Health	Medicine
Primarily focus on…	Population	Individual
Emphasis on…	Prevention, health promotion for the whole patient	Diagnosis, treatment, and care
Paradigm	Complementary interventions aimed at environment, behavior, and medical care	Medical care
Social Sciences	Integral Part	Elective Part
Training/Certification	Variable	Uniform system
Profession	Multiple identities with diffuse public image	Well-established profession with sharp public image

The P's

- Prevention (screening, vaccination)
- Promotion (Improving the Social Determinants of Health, Individual Health Behaviors
- Protection (Environmental Hazards – EPA, Healthy workplaces – OSHA, Product Safety: food, dietary supplements, cosmetics, and veterinary products –FDA, Control of Infectious Diseases –HHS)
- Prolonging
- Product Safety
- Policy
- Physical, Social, Economic environment
- big Picture
- Population

How does Public Health Affect your typical day?

- Smoke alarms, safe water, seatbelt and traffic regulations, no smoking in buildings, brushing your teeth

Examples of Public Health Events

1. Define the public health issue. Why is this a PH problem?
2. What are the factors and/or determinants involved in this problem?
3. What controversial and/or ethical concerns may be involved?

- A hurricane making landfall

Aug 25, 2022 - History of Public Health

Early Cultures

- Bathrooms, drains, & covered sewers (2000BC) in India
- Drainage systems & toilets (3000-11150BC)
- Code of Hammurabi
    - Earliest record of Public Health

Early Cultures

- Priest served as physicians (source of medical information)
- Egyptians (3000-1500BC)
    - Primitive medicine
    - Personal cleanliness
- Hebrews (around 1500BC)
    - Extended Egyptian hygienic thought
    - World's first hygienic code

Early Cultures

- Greeks (1000-400BC)
    - Disease prevention
    - Balance among physical (athletics), mental (philosophy), and spiritual (theology)
- **Asclepius** – god of medicine
- **Hygeia** – power to prevent disease
- **Panacea** – ability to treat disease
- **Caduceus** – staff and serpent of the physician; symbol on Asclepius' temples
- **Hippocrates –** (460-377 BC)
    - Theory of disease causation
    - First epidemiologist & father of medicine

Early Cultures

- Romans (500BC-AD500)
    - Great engineers and builders
        - Aqueduct system
        - Underground sewers and baths
        - Hospitals
        - Private medical practices
        - Studied anatomy and surgery

Middle Ages

- Middle Ages (500BC-AD1500)
    - Political & social unrest: many health advances lost
        - Collapse of Roman Empire
        - Health problems due to overcrowding
        - Little emphasis on cleanliness or hygiene
    - Christian beliefs impacted health – belief disease was caused by disobeying God

Middle Ages (500BC-AD1500)

- Great epidemics
    - Black Death (1346-1352)
        - Epidemic of Bubonic Plague
    - Leprosy
    - Other epidemics: smallpox, diphtheria, measles, influenza, tuberculosis, and anthrax
    - Disease contagion

Renaissance (rebirth) (AD1500-1700)

- New naturalistic and holistic thought
- Science reemerged numerous advancements
- Disposal of human waste and severe uncleanliness were common problems

Renaissance

- Thomas Sydenham (1624-1689)
    - Advocated direct observation
    - Known has the "English Hippocrates"

Age of Enlightenment (1700s)

- Industrialization and growth of cities
- **Miasmas theory** – belief that disease resulted from inhaling vapors In the air that developed In the putrefaction process

James Lind (1716-1794)

- Etiology of scurvy
- Performed experimental study and diet intervention

Small Pox

- Benjamin Jesty
    - Milkmaids/smallpox
- Edward Jenner (1749-1823)
    - Invented smallpox vaccination
- **Variolation**: weak strain protects against stronger strain

John Snow (1813-1858)

- Father of epidemiology
- Cholera; Broad Street Pump
- Descriptive epidemiology – hypothesis generation – hypothesis testing

Germ Theory

- Louis Pasteur (1822-1895)
    - Germ Theory
        - Showed that bacteria could cause disease
    - Discovered vaccine for anthrax

Florence Nightingale (1820-1910)

- Nurse
- 'Notes on Nursing: What it is and what is is not' (1859)
    - Book still in print today
- Created changes in hygiene and overall treatment of patients

Health in the US

Health in the United States

- 1700s
    - Health conditions were deplorable
    - Many immigrants and overcrowding
    - Quarantine & environmental regulations
    - 1789, first life expectancy tables created
    - 1798, US Public Health Service established

Health in the United States

- 1800s
    - Overcroding, poverty, and filth worsefen
    - State Boards of Health established in 1869
        - County health departments formed
    - Shattuck's Report of the Sanitary Commission of Massachusetts (1850)
    - 1872 – American Public Health Association (APHA) founded

Mary Mallon

- AKA "Typhoid Mary"
- Chronic carrier of typhoid fever
- Personally had no symptoms of the disease

Aug 30, 2022 – Population Health

What factors influence population growth

- Fertility Rate (total births per woman)
    - Replacement rate is approx. 2.1
    - Highest:
        - Maili & Congo 6.0
        - Somalia 6.2
        - Niger 7.2
    - Lowest 1.1
        - Korea, Puerto Rico, & Hong Kong
    - United States (1.8) and United Kingdom (1.8)
    - Based on a country's economy:
        - High income (1.6)
        - Middle Income (2.3)
        - Low income (4.6)

Standardized Measurements of Health Status

- Mortality Statistics
- Life expectancy
- Years of Potential Life Lost
- Disability-Adjusted Life Years
- Disability-Adjusted Life Expectancy

Mortality and Life Expectancy (Refer graphs on blackboard)

- Child Mortality
    - SDG (sustainable Development Goals) United Nations
- Adult Mortality

Morbidity: Proportion of illness in a population
Mortality: Incidence of deaths in a populations

Leading Causes of Death

Infant Mortality

- Important indicator of a population's health status
- Calculated as # of infant deaths within first year of life per 1000 live births
- Leading causes of death (2018)
    - Birth defects
    - Preterm birth or low birth weight
    - Injuries (e.g. suffocation)
    - SIDS
    - Maternal pregnancy complications
    -

Infant Mortality Rates

- deaths/1000 live births - 2017 data

Infant Mortality Rates by State (2019)

- South Carolina: 6.89
- Rankings: 8th (preterm Birth Rate) 5th (low Birthweight Rate)

Infant Mortality Rates by Race and Ethnicity (2018)

- Black/White Ratios
    - Infant mortality 2.3x more
        - Low birthweight = 4.0x
        - Maternal complication = 3.4x
        - Accidents = 2.0x
    - Mother received prenatal care during 1st trimester = 0.8x
    - Mother received late or no prenatal care = 2.1x
    - Mother smoked during pregnancy = 0.5x

Eras of Public Health

- Health Protection (Pre-1830s)
    - Regulation of human behavior
- Hygiene movement (1840s-1870)
    - Addressing unsanitary environmental conditions
- Contagion Control (1880-1930s)
    - Germ Theory
- Preventative Medicine (1940s-1960s)
    - Prevention and cure within high-risk groups
- Primary Health Care (1970s-1980s)
    - Effective Health Care for all
- Health Promotion (1990s-2000)
    - Advocacy for health; enabling the attainment of optimal health
- Population Health (21st Century)

Population Health

- Healthcare systems, Traditional Public Health, Social Policy
- The full spectrum of Population Health

Sept 1, 2022 –

Population Health

- Health issues
    - Historical: Physical
    - Current: Physical & Mental
    - Emerging: Cosmetic, genetic, social functioning
- Population(s)
    - Historical: Geographically limited
    - Current: Local, state, national, global, governmentally defined
    - Emerging: Defined by local, national, and global communications
- Society's shared heath concerns
    - Historical: Communicable diseases
    - Current: Toxic substances, safety, communicable diseases, costs of healthcare
    - Emerging: Disasters, climate change, technology hazards, emerging infectious disease
- Society's vulnerable groups
    - Historical: High risk maternal and child, high risk occupations
    - Current: Disabled, frail elderly, uninsured
    - Emerging: Immune-suppressed, genetic vulnerability

Public Health Intervention Approaches

- The Bell-Curve Shift in Populations
    - Shifting the whole population into a lower risk category benefits more individuals that shifting high risk individuals into a lower risk category
- Population Approach: encourage everyone to change, shifting the entire distribution
- Risk reduction approach: Move high risk individuals into normal range

Levels of Prevention

- Primary Prevention is the forestalling of the onset of illness or injury during the pre-pathogenesis period (before the disease process begins)
- Secondary Prevention: is the early diagnosis and prompt treatment of diseases before the disease becomes advanced and disability becomes severe
- Tertiary Prevention is to retrain, reeducate, and rehabilitate the patient who has already incurred disability

Levels of Prevention

- Primary Prevention: Public Health via Community Action & screening programs
- Secondary/Tertiary: Family physicians via patient counseling & risk factor change
- Tertiary: All clinicians via counseling, follow-up, rehabilitation

Examples of Prevention:

- Cancer
- Covid-19
- Heart Disease
- Diabetes (Type II)

Sources of Standardized Data

- U.S. Census
    - Conducted every 10 years, enumeration of population
- Statistical Abstract of the US
    - Statistics on social, political, and economic organization
- Vital Statistics
    - Statistical summaries of records of major life events

Sources of Standardized Data

- Morbidity & Mortality Weekly Reports (MMWR)
    - Lists of notifiable diseases in the US
- National Health Surveys
    - NHIS | NHANES | BRFSS | YBRS | NHCS
    - Health interviews of people
    - Clinical tests, measurement, and physical examinations

Sept 6 - Law, Government, and Public Health

The 3 broad categories of Public Health Services
- Assessment
- Policy Development
- Assurance

The 10 Essential Public Health Services
- To protect and promote the health of all people in all communities

Organizations that help shape public health
- International
- Governmental
- Quasi-governmental
- Non-governmental

World Health Organization
- International Health Agency
- Purpose
    - "Attainment by all peoples of the best possible level of health"
- Function
    - Give worldwide guidance in the field of health
    - Set global standard for health
    - Cooperate with governments in strengthening national health programs
    - Develop and transfer health information

UNICEF (United Children's Fund)
- Vision: Build a world where every child can grow up healthy, protected from harm and educated, so they can reach their full potential
- Gender equality
- Social inclusion
- Disability

World Food Programme
- Deliver food assistance in emergencies
- Work with communities to improve nutrition and build resilience
- 2/3 of work is in conflict-affected countries

OXFAM
- Based in the UK
- Programming focused on reducing poverty
- Disaster areas
- Clean water
- Education
- Gender equality

Governmental Health Agencies

- Funded primarily by tax dollars
- Levels:
    - National
    - State
    - Local

Operating Divisions within HHS

- Administrations for Children & Families (ACF)
- Administration for Community Living (ACL) – supports elderly to remain independent for as long as possible
- Agency for Healthcare Research & Quality (AHRQ) – collect data for the healthcare system, reducing cost but improving patient safety, program and policy to reduce medical errors, less prominent than other agencies
- Agency for Toxic Substances and Disease Registry (ATSDR) – environmental health, reducing and preventing exposure to toxic substances
- Centers for Disease Control (CDC) – pipeline for the state and local agencies
- Centers for Medicare and Medicaid Services (CMS)
- Food and Drug Administration (FDA)
- Health Resources and Services Administration (HRSA) – works to build the healthcare workforce
- Indian Health Service (IHS)
- National Institutes of Health (NIH) – funneling millions of dollars to research projects, fund new projects that leads to better health for everyone
- Substance Abuse and Mental Health Services Administration (SAMHSA)

State Health Agencies

- Purpose
    - To promote, protect, and maintain the health and welfare of their citizens.
- Core Functions
    - Assessment
    - Policy Development
    - Assurance
- Structure
    - Centralized
    - Decentralized

South Carolina DHEC

- Department of Health and Environmental Control
- Vision: Healthy people living in healthy communities
- Mission: To improve the quality of life for all South Carolinians by protecting and promoting the health of the public and the environment
- Strategies: Education and Engagement, Science in Action, Leadership and Collaboration, Service and Accessibility, Operational Excellence

South Carolina DHEC
Covid-19

- Quarantine Guidance, Testing locations, Data, Masks, Vaccines/Boosters, Free at-home tests
- Radon Testing
- Tobacco Quit Line
- Avian Flu
- Interactive Maps and Geospatial Data

Local Health Agencies

- Funding
    - Major portion comes from local property taxes
    - Some state and federal dollars
    - Some programs “fee-for-service” basis
- National Association of County and City Health Officials (NACCHO)

Quai-governmental Organizations

- Some responsibilities assigned by government but operate more like voluntary agencies
- Funded by tax dollars and private sources
- Operate independently of government supervision
    - American Red Cross
    - National Science Foundation
    - National academy of sciences

Sept 8 – cont.

Non-governmental Health Agencies

- Funded by private donations
- Voluntary agencies
    - American Cancer Society
- Professional health organizations/associations
    - American Public Health Association
    - American Medical Association
- NGO's (Non-governmental organizations)
    - Independent of government
    - Private funding source
    - Habitat for Humanity
    - Save the Children
- FBO's (Faith based organizations)
    - Specific type of NGO
        - Catholic Relief Services
- Philanthropic Foundations
    - Provide funding for research and programming
        - Robert Wood Johnson Foundation
        - Henry J. Kaiser Family Foundation
- Corporate Involvement
    - Worksite programs
    - Sponsorship of health-enhancing activities in the community
- Service, Social, and Religious Organizations
    - Exist to service their communities and provide social interaction for individuals with similar interests
        - Jaycees
        - Kiwanis Club
        - Rotary Club

Tragedy of the Commons

- Collective actions v. Self Interest
- Gain (+) to the individual
- Loss (-) communized to population
- How to avoid the 'tragedy'
    - Incentives
    - Privatization
    - Communication
    - Education

California Heat Wave (Sept 6, 2022)

- Between 5:50-5:55, demand decreased 1.2 gigawatts and would continue to drop.
- 1 gigawatt = powers about 750,000 homes

Using policy to moderate risk behaviors

- 1964 – first Surgeon General's Report of adverse health effects of smoking
- 1986 – Surgeon General's Report on health consequences of 'involuntary smoking' (second-hand smoke)
- Smoking restrictions in public places
- Limits on advertising
- Inclusion of warning labels on packaging
- Legal age for purchase

Tobacco twenty-one

- Federal legislation: minimum age for sale of tobacco was raised from 18-21 on 12/20/2019
- Tobacco Prevention v. Marketing (spending comparison)
    - SC: 1:37
    - CA: 1:2
    - CO 1:5
    - WV 1:223
    - KY 1:123
    - NE 1:22

Master Tobacco Settlement

- 1998 – Attorneys General of 46 states signed the Master Settlement Agreement (MSA) with the four largest tobacco companies
- Total payout to date (1999-2021): $145.5B
- Total payout to SC to date: $1.75 Billion ($70-$90M/yr)
    - 2021 funding Medicaid program

The Diethylstilbestrol (DES) Story

- Proactive v. Reactive policy development
- Balance speed & effectiveness
- Marketing and "off label" use
- Common good v. financial incentives for manufacturers
    - How do we control/optimize
    - Who wins?
- Ongoing litigation – Opioid crises

Sept 13 – Epidemiology

Epidemiology
- The study of the distribution and determinants of health conditions or events among populations
- Application of that study to control health problems
- Population medicine
- Basic Science of Public Health
    - Evidence-based approach
- Surveillance
    - Active v. Passive

PERIE Process
- P-problem
- E-etiology
- R-recommendations
- I-implementation
- E-evaluation

PERIE – Problem (What, Who, Where)
- What
    - Burden of disease
    - Morbidity & Mortality
- Who
    - Description and distribution within population
- Where
    - Distribution within population

Numbers and Rates
- Case Definition or "What"
    - A set criteria for deciding whether a person has a particular disease or other health related condition
- Rates
    - The number of events that occur in a given population in a given period of time
- Importance of Rates
    - Allow for a comparison of outbreaks that occur at different times or in different places (per 1000 or per 100,000)

Important Types of Rates
- Natality (birth) rate = # of live births / estimated med-year population
- Morbidity (disease) rate = # of cases / estimated mid-year population
- Mortality (fatality) rate = # of deaths / estimated mid-year population

Crude & Specific Rates
- Crude death rate = Number of deaths (all causes) / estimated midyear population
- Age-specific death rate = Number of deaths (35-44) / Estimated midyear population (35-44)
- Cause-specific death rate = number of deaths (specific cause) / estimated midyear population

Important Types of Rates

- Incidence rate = # of new cases of a disease in a certain time period / population at risk in same time period
- Prevalence rate = # of new and old cases (total cases) of a disease in a certain time period / population at risk in same time period
- Attack rate = @ of new cases in a narrowly defined population during a specific time period / population at risk in same time period

Definitions

- Epidemic
    - An unexpectedly large number of cases of disease in a particular population
- Pandemic
    - An outbreak of a disease over a wide geographical area such as a continent
- Endemic
    - A disease that can occur regularly in a population
- Acute
    - Disease whose peak severity of symptoms occur and subside within days or weeks
- Chronic
    - Diseases that last 3 months or longer
- Notifiable diseases
    - Infectious diseases that can become epidemic

Reporting Births, Deaths, & Diseases
Doctors, Clinics, Hospitals Local Health Department State Health Department Centers for Disease Control and Prevention (CDC)

PERIE – Etiology (Why & What)

- Why is the event/disease happening
- What are the contributory causes?
- Determinants
    - Underlying factors

Determinants

- Risk or Protective factors
- Multiple levels
    - Environmental
    - Social
    - Cultural
    - Behaviors
    - Access to services
- Modifiable v. non-modifiable
- Volitional control

Micro v. Macro Level Determinants

- Micro: Age, sex, and hereditary, individual lifestyle factors
- Macro: Social and community networks, Agriculture and food production, education, work environment, living and working conditions, unemployment, water and sanitation, health care services, housing, general socio-economic, cultural and environmental conditions

Sept 15. 2022

PERIE – Etiology (Why/What)

- Why is the event/disease happening
- What are the contributory causes?
- Establishing an association
- Determining causality

Hill's Casual Criteria

- Strength of association
- Consistency of data
- Specificity
- Temporality
- Dose-response / Biological Gradient
- Biological plausibility
- Coherence
- Analogy
- Experimental evidence

Epidemiological Study Measures

- Probability statements or testing the differences in groups
    - Cohort Study
        - Perspective
    - Case/Control Study
        - Retrospective
    - Experimental

Classic Epidemiological Studies

- Framingham Heart Study
    - 1948 original cohort of 5209 aged 30-62
    - No overt symptoms of CVD
    - Additional cohorts
        - 1971 – Offspring cohort
        - 1994 & 2003 Omni Cohorts – new cohorts representing the diversity of the population
        - 2002 – Third Generation Cohort
    - Determinants of CVD
- Whitehall Studies (UK)
    - Relationship between employment grade and mortality
    - Smoking
    - Job control and job support

PERIE – Recommendations (How)

- Reducing/Eliminating the PH Problem
- Interventions
    - Evaluation of effectiveness
    - Dissemination

PERIE – Implementation

- When
    - Primary, Secondary. Tertiary
- Who
    - Individual Population
    - At-risk group
- How
    - Information – education
    - Motivation – incentives
    - Obligation – requirement

Research Synthesis Case Study

- Systematic Review v. Meta-analysis

Epi Memo Assignment – 2 Parts

Part I (40 points)

- Scope of the Problem
- 20 questions – start with the worksheet and then enter you answers in Blackboard

Part II (60 points)

- Memo – 4 Paragraphs, follow the outline in the instructions
- Review the grading rubric posted to Blackboard

Sept 20, 2022 – Social Determinants of Health

What are the social determinants of health?

- Who they are
    - Age
    - Sex
    - Genetic factors (race, ethnicity, etc.)
- What they do
    - Behaviors like smoking, physical activity, alcohol consumption, and diet
- Conditions in which people are born, grow, like, work, and age
    - Social networks
    - Socio-economic standing
    - Cultural
    - Environmental
    - Health systems
- Social determinants of health drive money, power, and resources which lead to health inequities
- VISUAL WITH COLORED BOXES AND WORDS

Excess death

- Unnatural causes documentary – is inequality making us sick?
    - Generational trauma
    - The stark differences in health numbers
    - Health-wealth gradient
        - Health and income are directly related almost linearly
        - Low socio-economic standing and low formal education causes
            - Higher likelihood of developing chronic diseases
            - Greater disease severity
            - Income inequality
    - Gini Index (higher numbers means more income inequality)
        - Top 10 countries are 0.53-0.63
            - 9 of them are African & Brazil
        - Bottom 10 are 0.24-0.27
            - European mostly
        - Average is 0.38
        - USA is .41
            - Top 1% = 20% of income
            - Bottom 50% = 10% of income
        - Magnitude changes over time based on:
            - Universal healthcare
            - Workers compensation (benefits)
            - Social differences
            - More likely to walk
            - Paid maternal and paternal leave
            - Mental health days
            - Free college
            - Better childcare systems
            - Limiting the impact of income inequality

    - Childhood poverty graphics

- Stress Response
    - Fight or Flight
    - Our stress response is evolutionarily conserved
        - Regardless of the source of stress, we receive the same physical responses
    - Accumulation of stress over time is part of the issue
        - Constant little stress can break us down and make us susceptible to disease
        - Cortisol levels increased
    - Belief that you have control over your stress is key
    - Sheldon Cohen's stress research
        - Personal agency in your day-to-day life is important to physical and mental health & wellness
        - If we consider the gradient a ladder, we seek to squish the rungs together in order to make healthcare more equitable
    - Excess deaths are any deaths over the expected death rate in a community
    -

Sept 22, 2022 Progress?

Adverse Childhood Experiences (ACES)

- Highly stressful, traumatic event experienced before the age of 18
- Abuse, neglect, or household challenges
    - Abuse
        - Physical
        - Emotional
        - Sexual
    - Neglect
        - Physical
        - Emotional
    - Household challenges
        - Domestic violence
        - Mental illness
        - Divorce
        - Relative in jail
        - Substance abuse

Adverse Childhood Experiences

- Injury (Traumatic Brain Injury, Fractures, Burns)
- Mental Health (Depression, Anxiety, Suicide)
- Maternal Health (Unintended pregnancy, pregnancy complications, fetal death)
- Infectious disease (HIV, STDs)
- Chronic Disease (Cancer, Diabetes)
- Risk Behaviors (Alcohol & Drug Abuse, Unsafe sex, Opioid misuse)
- Opportunity (Education, Occupation, Income)

Adverse Childhood Experiences

- ACE score >_ 4 increased likelihood of:
    - Binge drinking, heavy drinking
    - Diabetes, Coronary Heart Disease, Stroke
    - Disability do to health
    - Smoking
    - Risky HIV behavior
    - Depression

Mechanism by which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

- Concept Death
- Generational Embodiment/Historical Trauma Social Conditions/Local Context Adverse Childhood experiences Disrupted Neurodevelopment Social, Emotional & Cognitive Impairment Adoption of Health risk behavior Disease, disability, & social problems Early death

Strategies for Preventing ACES

- Strengthen economic supports for families
- Promote social norms that protect against violence and adversity
- Ensure a strong start for children
- Enhance skills to help parents and youths hands stress, manage emotions, and tackle everyday challenges

- Connect youths to caring adults and activities
- Intervene to lessen immediate and long-term harms

PACES – Protective and Compensatory Experience or Positive Children Experiences

- The Ten Paces include:
    - Parent/caregiver unconditional love
    - Spending time with a best friend
    - Volunteering or helping others
    - Being active in a social group
    - Having a mentor outside of the family
    - Living in a clean, safe home with enough food
    - Having opportunities to learn
    - Having a hobby
    - Being active or playing sports
    - Having routines and fair rules at home