

A hand holding a magnifying glass over a blue background with the title 'Public Health Frameworks'.

Public Health Frameworks

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Lecture outline

- What is public health?
- Public health frameworks
 - Public Health Approach
 - Socio-Ecological model (SE model)

What is Public Health?



Public Health is the “science and art of preventing disease, prolonging life, and promoting health through the organized efforts” and informed choices of society, organizations, public and private communities, and individuals.

Prof C.E.A. Winslow (1920), SPH, Yale University

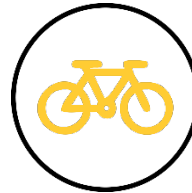
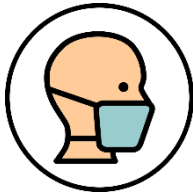
Public health in Singapore: some examples

Reduce tobacco use



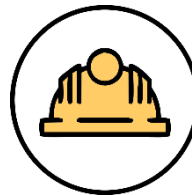
Provide women with cancer screenings

Protect people from communicable diseases



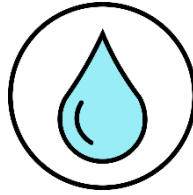
Encourage healthy lifestyles to reduce risk of non-communicable diseases

Provide healthier food options



Promote on-the-job health and safety

Ensure access to safe drinking water



Advocate mental wellness

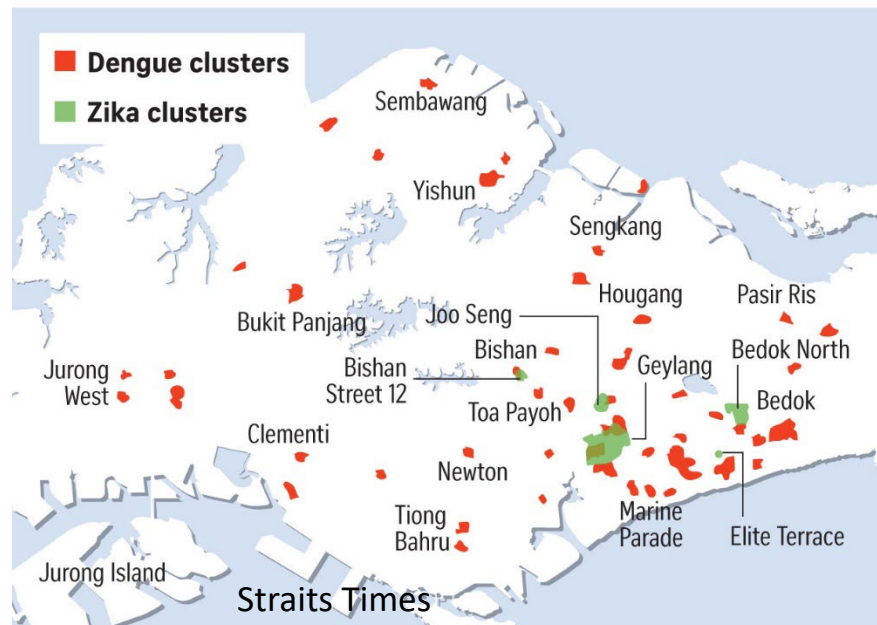
Public health in Singapore: some examples

Commentary: In Singapore, battling the COVID-19 threat outside and the dengue peril at home

07 Aug 2020 06:08AM | (Updated: 04 Feb 2021 01:56AM)



Where the mozzies are



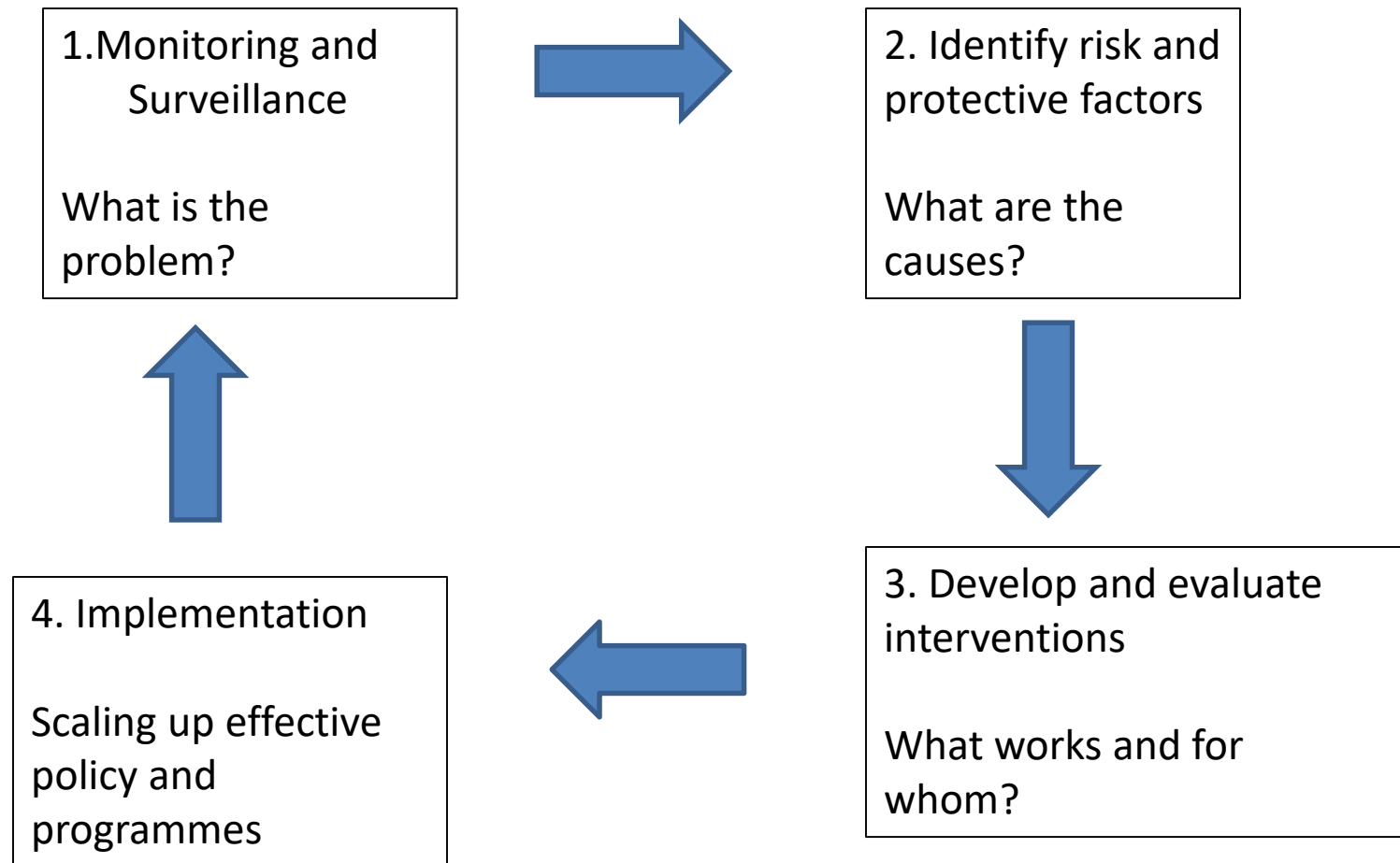
What is Public Health?

“Development of the social machinery which will ensure for every individual in the community a standard of living adequate for the maintenance of health.”

Prof C.E.A. Winslow (1920), SPH, Yale University

The Public Health Approach

The Public Health Approach



The Public Health Approach

1. What is the **problem**?

Monitoring and Surveillance

Requires the collection, analysis, and interpretation of data to detect and define the problem and outline:

- **W**ho
- **W**ho
- **W**here
- **W**hen
- **H**ow

The Public Health Approach

2. What are the **causes**?

Identify risk and protective factors

- **W**hy is there this problem?
- Requires a determination of:
 - Preventable or not preventable
 - Controllable or not controllable
 - Priority

The Public Health Approach

3. How do we mitigate or prevent the problem?

Develop and evaluate **interventions**

The potential for prevention or control frequently requires:

- A strategy/method
- A champion
- Funding

The Public Health Approach

4. Has our solution worked?

Implementation

After implementation the cycle begins again, to evaluate the program results.

- Did the strategy work as intended?
- Were the results as expected?
- If yes, can you expand or replicate the program?
- If no, do you abandon or revise and try again?

The Public Health Approach: A case study

What was the leading cause of death in Arizona children 0-4 years of age from 1986-1996?

Case study by:

Glyn G. Caldwell, MD

University of Kentucky College of Public Health

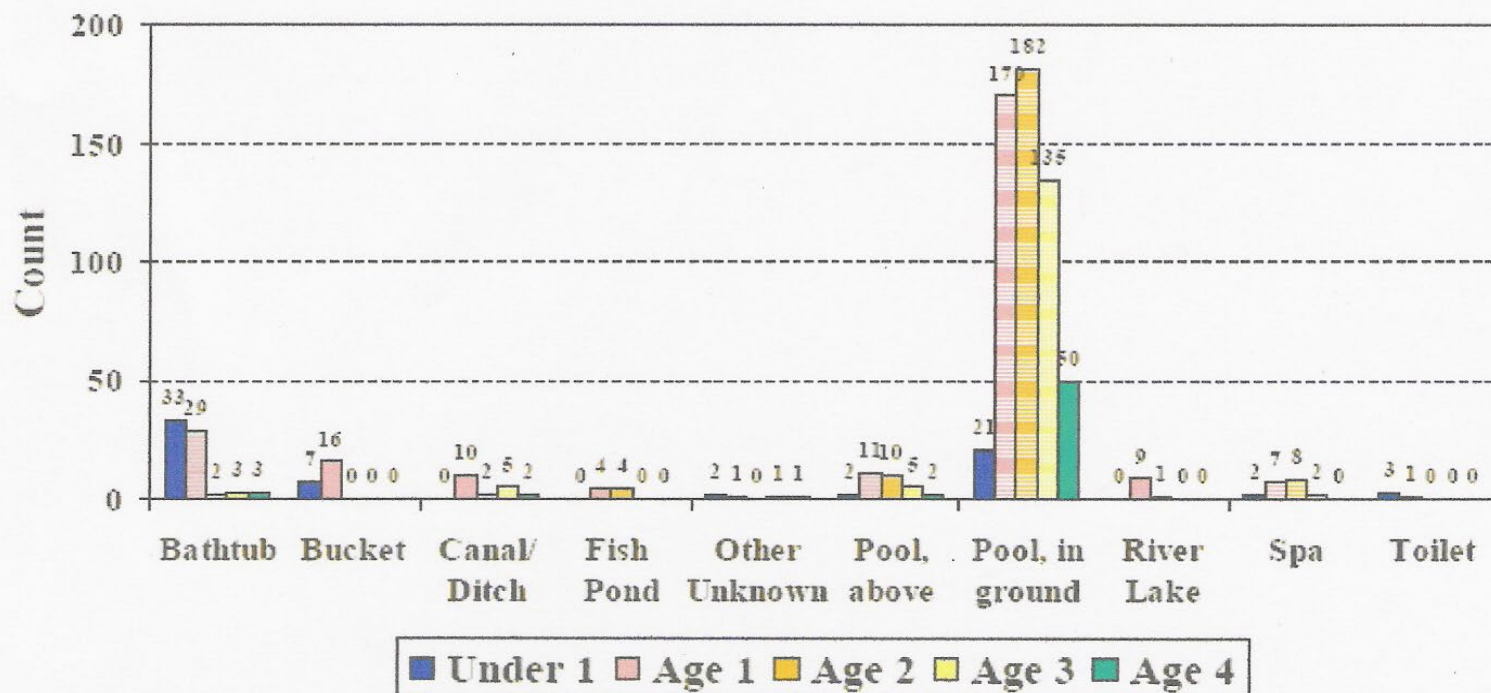
**DROWNING DEATHS BY PLACE AND/OR CIRCUMSTANCES OF IMMERSION
(CHILDREN 0-4 YEARS) BY YEAR, ARIZONA, 1986-1996**

	YEAR										
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Home swimming pool	27	19	21	29	14	17	12	13	16	20	20
Not at home swimming pool	2	0	1	1	0	0	0	0	0	0	0
Bathtub	1	7	3	0	2	2	5	5	4	3	1
Accident to or on watercraft causing submersion	1	0	0	0	0	0	0	0	0	0	0
Submersion or drowning while engaged in sport or recreational activity in place other than a swimming pool	0	0	1	1	1	2	0	1	1	1	0
Other and/or no otherwise specified circumstances (incl. accidental fall into water)	6	1	4	3	0	5	6	3	5	6	5
Unclassifiable	0	0	0	0	0	0	0	0	0	0	1
TOTAL	37	27	30	34	17	26	23	22	26	30	27

Drowning in Arizona

Body of Water of Incident

Maricopa County, 1990-2000

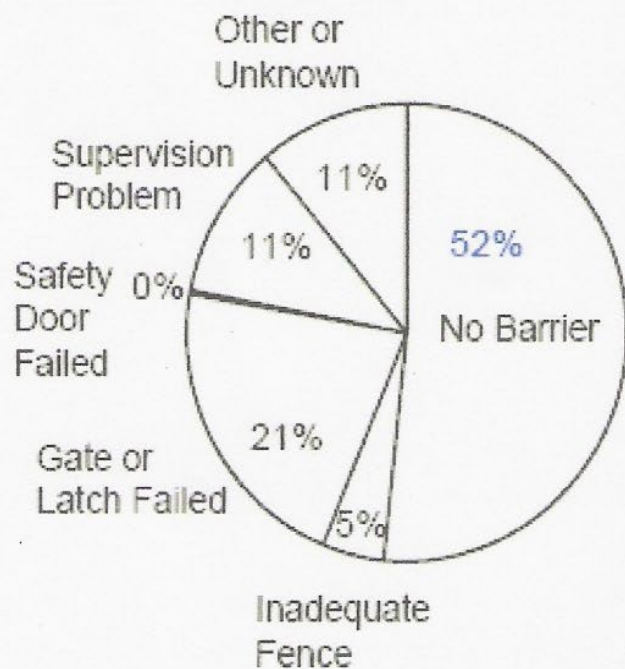


Source: Incidence reports from fire departments

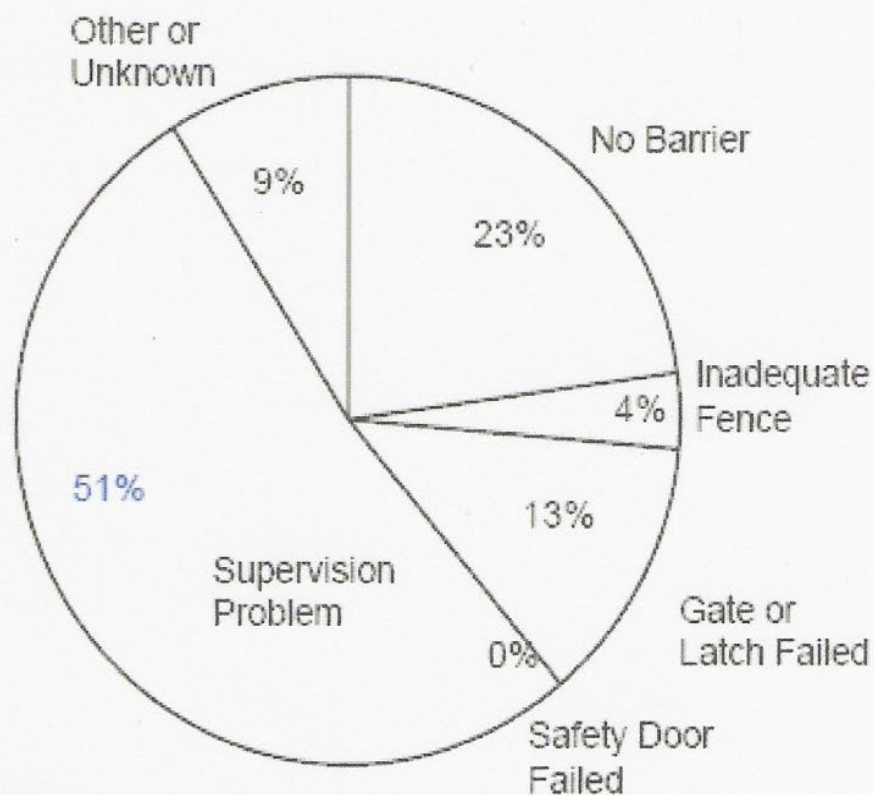
Drowning in Arizona

Attributed Cause, 1988-2000

Cold Months



Warm Months



Source: Incidence reports from fire departments

Drowning in Arizona

The data outlines the problem to be:

- A barrier problem (none, failed or inadequate)
- Supervision failure

Drowning in Arizona

- The Goal!
 - One of the health objectives targeted in Arizona 2000 was to decrease the death rate for drowning to 1.3/100,000.
- The 1996 drowning rate for Arizona residents of all ages exceeded the target rate by 69%.

Note: The highest age specific drowning rate is for children under 5 years of age.
(Ref: Injury Mortality Among Arizona Residents, 1990-2000, Arizona Dept of Health Services)

Drowning in Arizona

The response by the PH organizations:

- Seek legislative action
- Develop community educational program
- Develop an individual pool safety program

Drowning in Arizona

Results:

- The legislature passed a bill in 1991 requiring fencing and buyer notification (A.R.S. §36-1681)
- Education programs were developed and implemented by realtors and volunteer groups

Drowning in Arizona

Arizona Republic Headlines:

- “Child Drownings Down 60% in Phoenix”
- “Maricopa County Child-Drowning Rate Hits 20-year Low”

Drowning in Arizona

Drowning mortality rates dropped:

<u>Year</u>	<u>Rate/100,000</u>
1974	21.3
1981	19.5
1989	11.9
1990	5.8

Drowning in Arizona

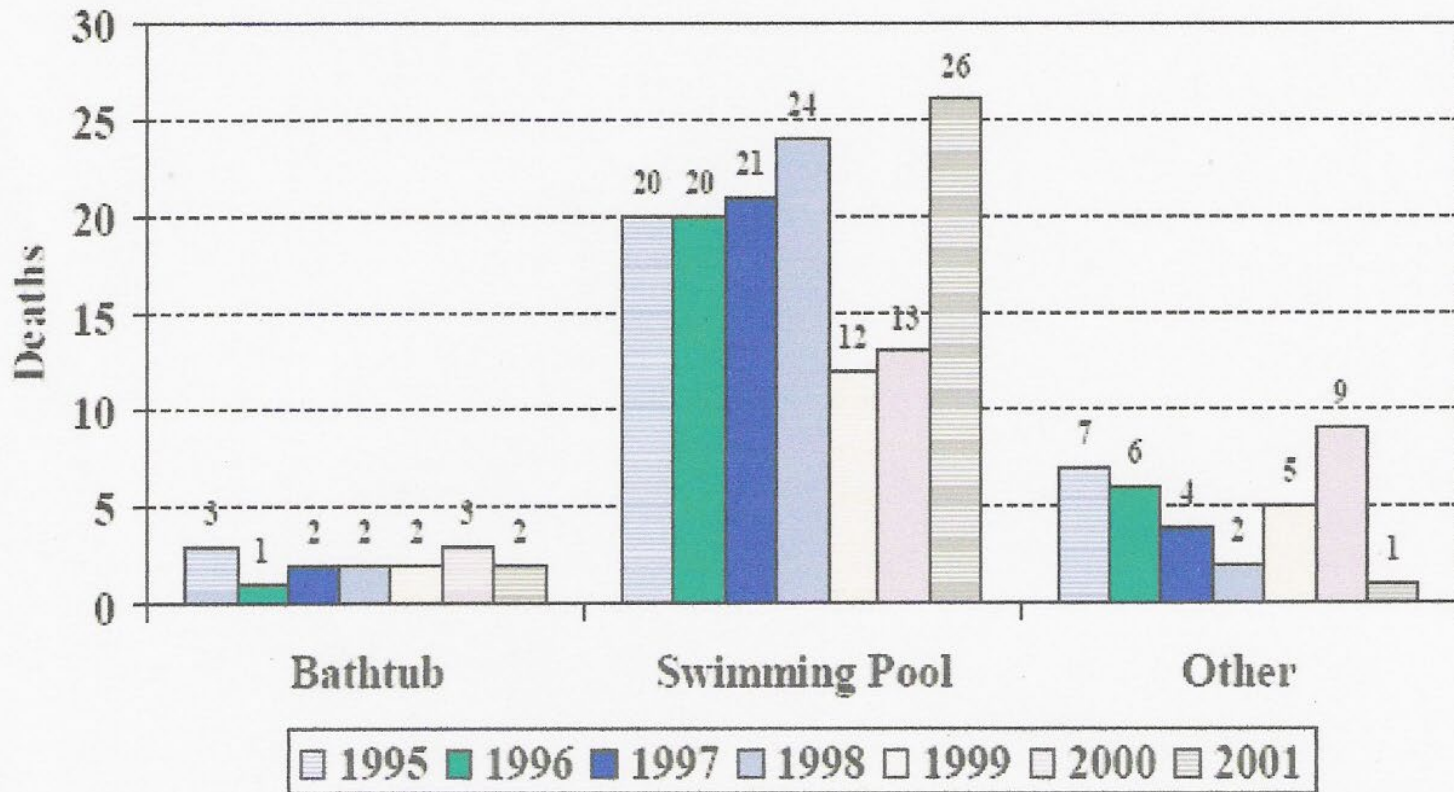
It was better, but it didn't last:

Drowning mortality rates began increasing

<u>Year</u>	<u>Rate/100,000</u>
1991	8.5
1992	7.1
1994	8.0
1995	9.9
1996	8.5

Drowning in Arizona

Location of Drowning Death, Arizona Children 0-4 years of age



Source: Arizona Vital Statistics

Drowning in Arizona

- What happened?
- We have to return to data collection and analysis to seek the answers

Drowning in Arizona

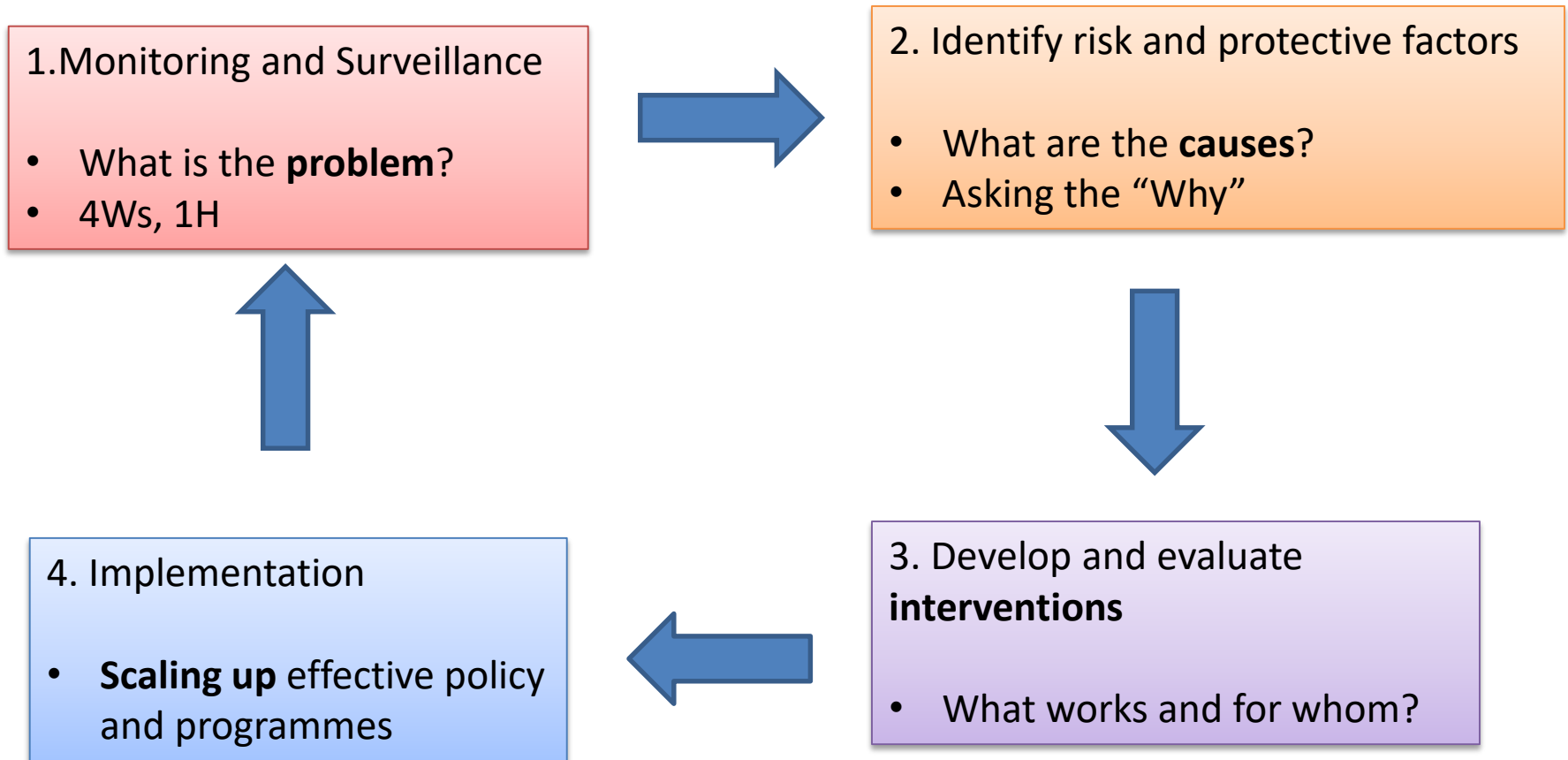
The findings show:

- Failure to use or maintain barriers
- Failure to supervise; parental inattention
- No requirement for interior pools
- Not all drowning occur in swimming pools

Drowning in Arizona

And so, the cycle begins again until we accomplish our goal.

The Public Health Approach



Your Health and the Socio-Ecological Model

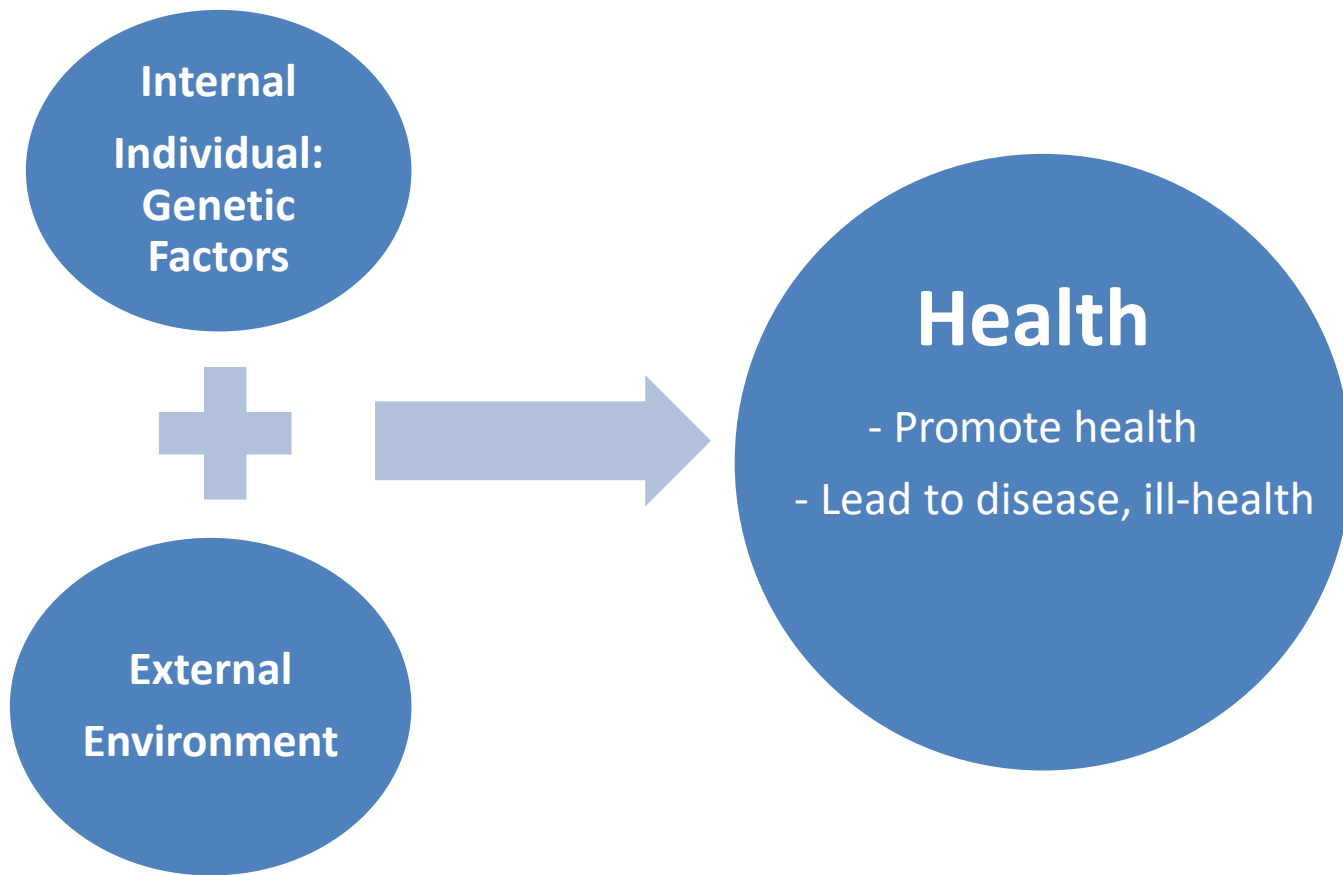
Outline

- What is health?
- Determinants of health
- The socio-ecological (SE) model
- How do SE model components influence health?

What is health?

"State of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity."

- World Health Organization (WHO)



BIRTH

DEATH



Social determinants of health

“Circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness.”

These circumstances are in turn shaped by a wider set of forces

- **E.g. economics, social policies, politics**

Social Determinants of Health...

- Income
- Housing
- Education
- Socioeconomic status/position
- Unemployment and job security
- Employment and working conditions
- Transportation
- Access to services
- Physical environment
- Ethnicity/Race
- Gender
- Social or environmental stressors
- Food insecurity

... Have a Significant Impact Upon:

- Predisposition of individuals and groups to illness
- The way they experience and recover from illness

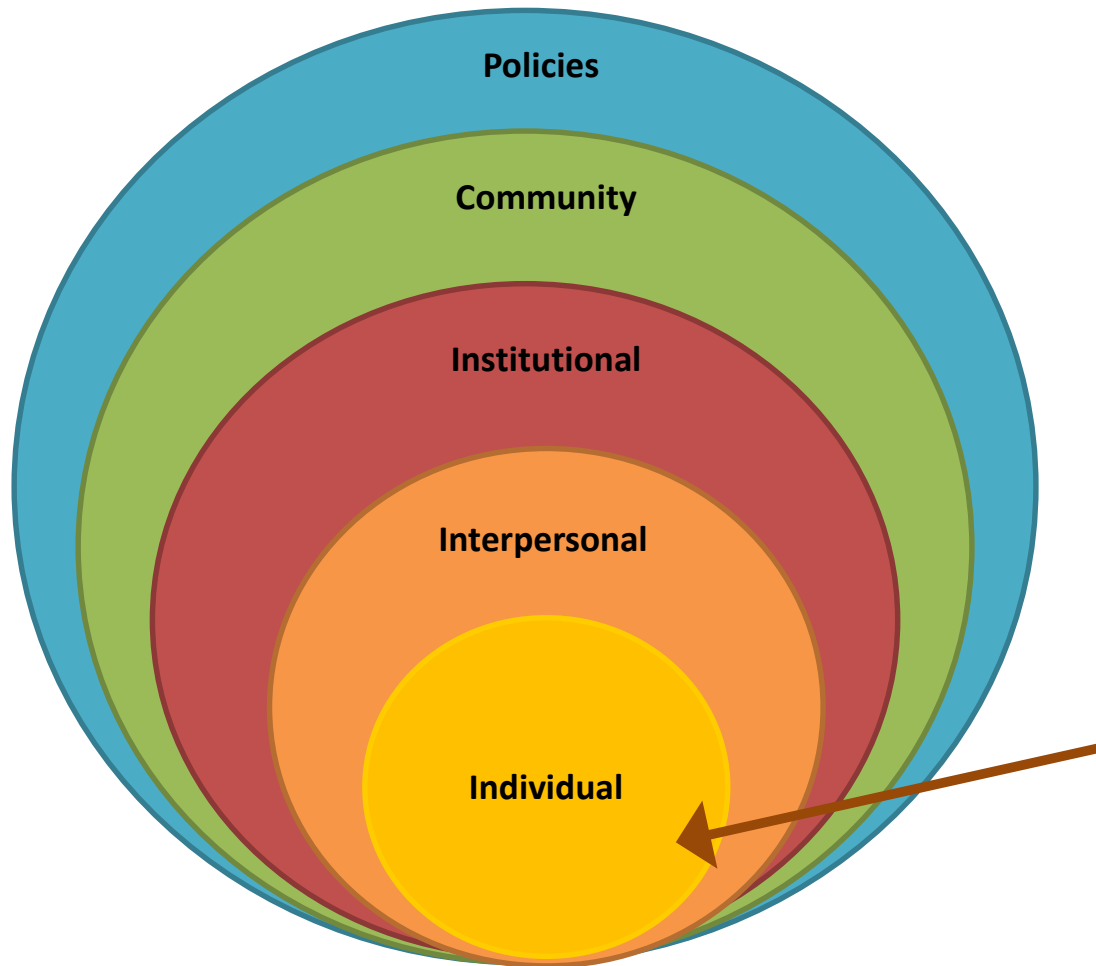
The Socio-Ecological Model of health

“Health is affected by the interaction between the characteristics of the individual, the community, and the environment that includes physical, social and political components.”

Kilanowski JF. Breadth of the socio-ecological model. *Journal of Agromedicine*. 2017;22(4):295-297.

Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2008). *Health behavior and health education: Theory, research, and practice* (4th ed.). John Wiley and Sons.

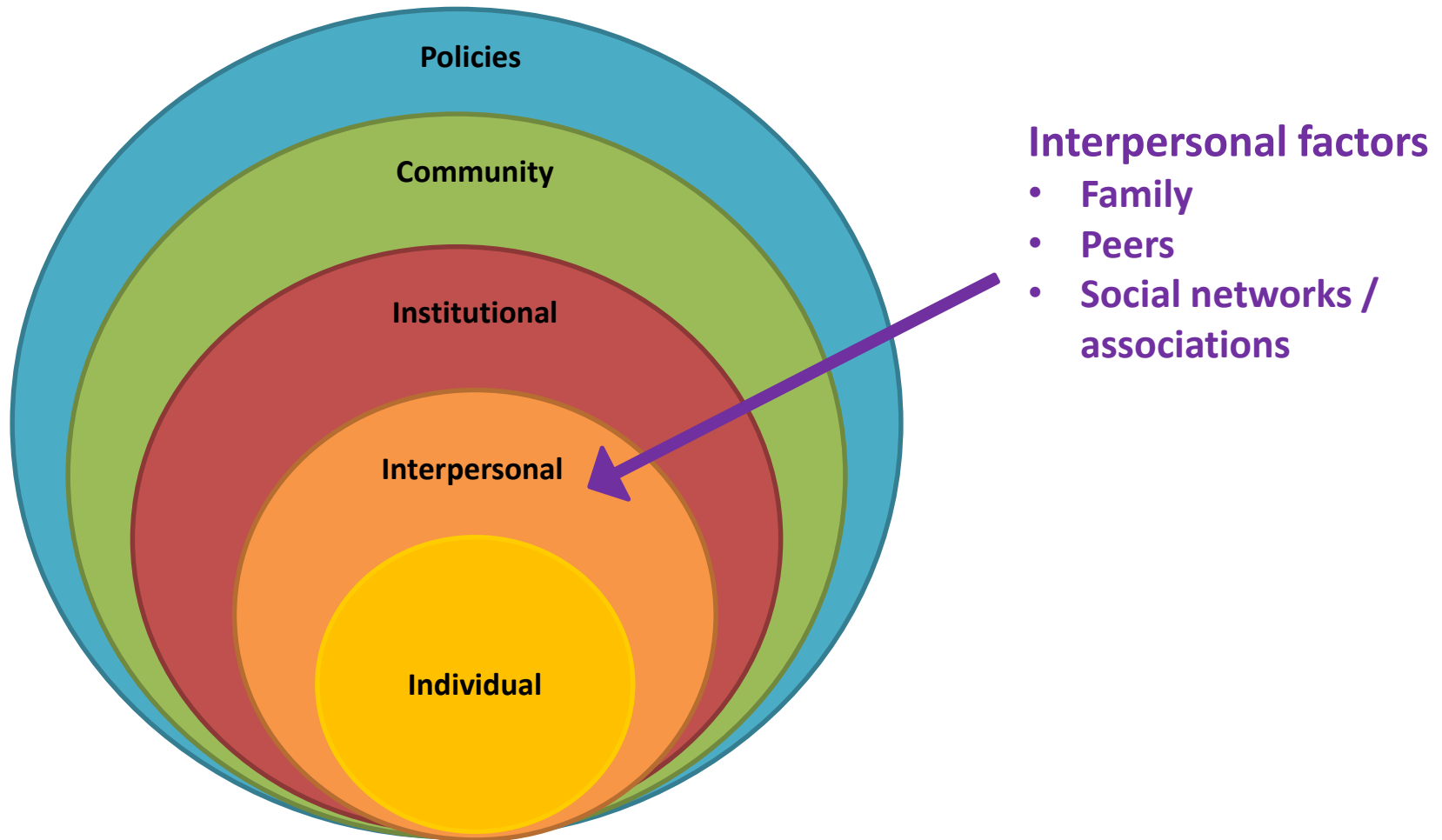
The Socio-Ecological Model (McLeroy)



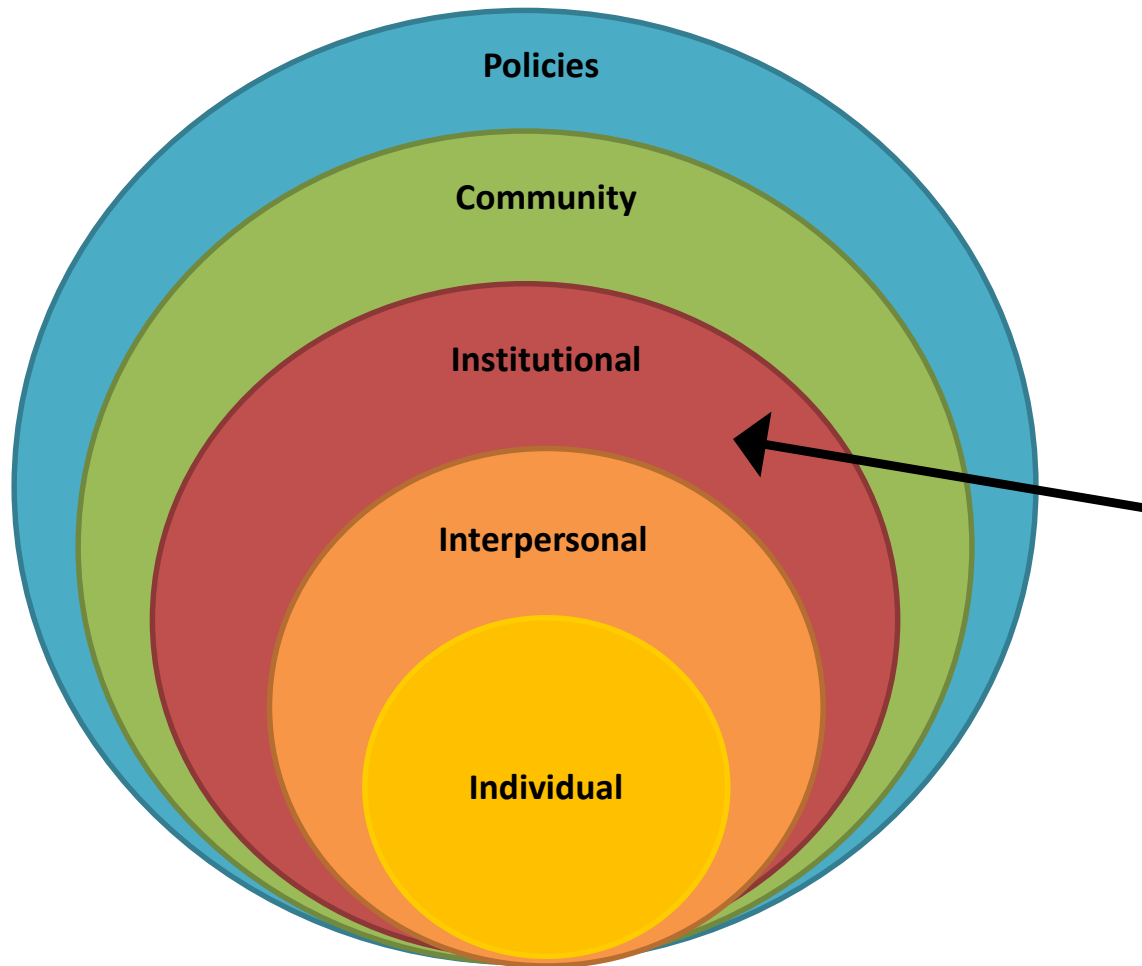
Individual factors

- *Age, sex, genes*
- *Ethnicity*
- *Socioeconomic status (SES)*
- *Individual knowledge, attitudes, beliefs*

The Socio-Ecological Model (McLeroy)



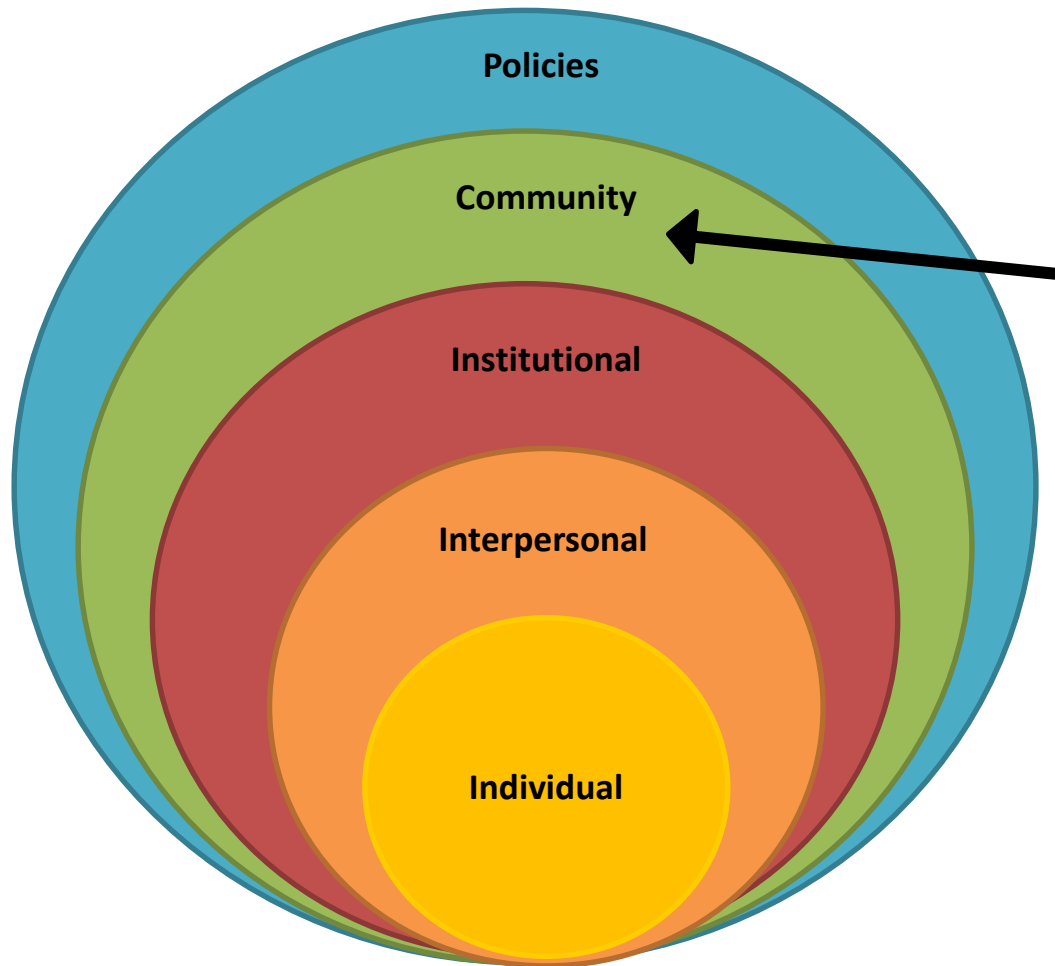
The Socio-Ecological Model (McLeroy)



Institutional factors:

- Access to facilities, goods and services within the institution
- Living / working conditions
- Structural factors
- Institutional regulations / policies

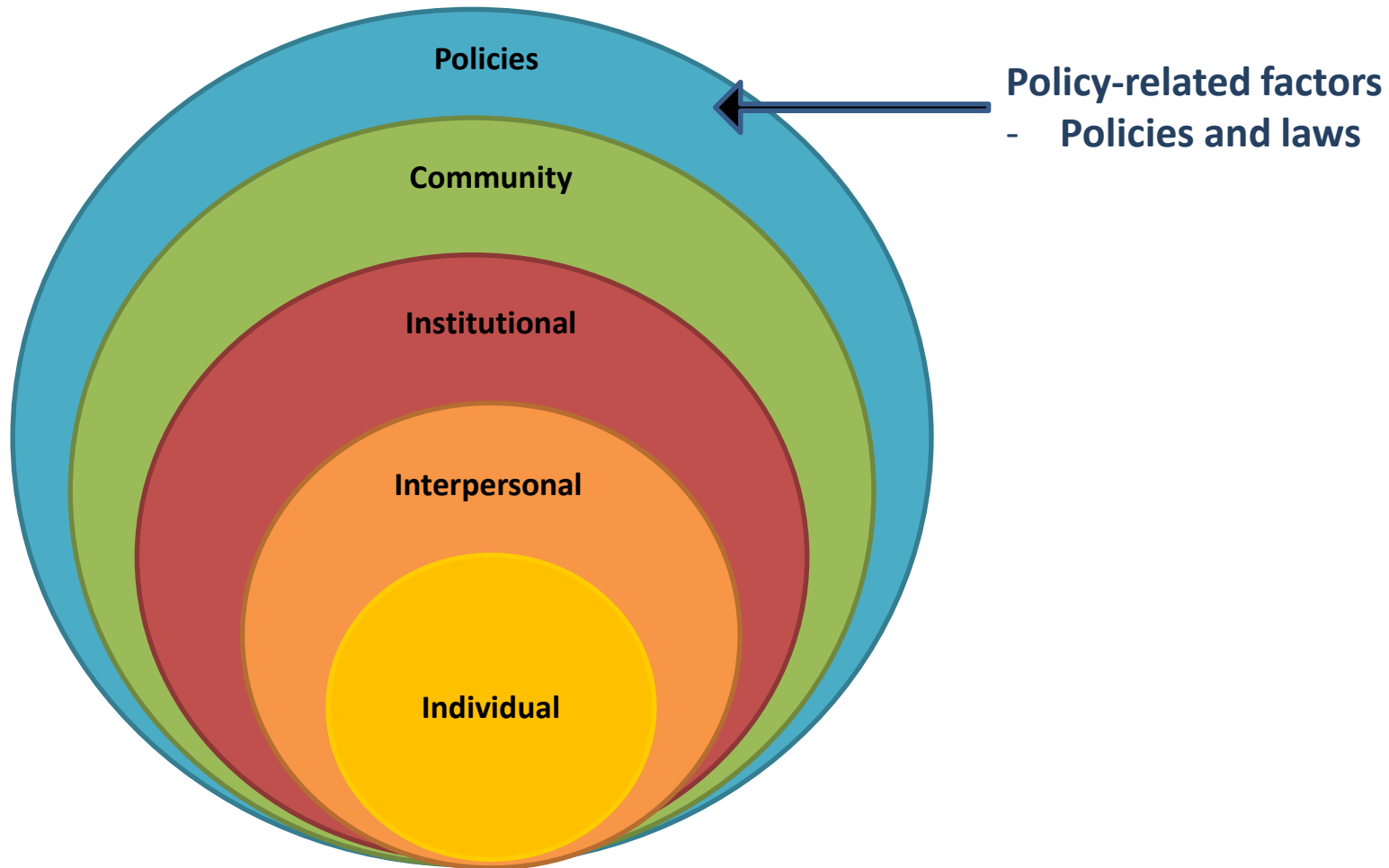
The Socio-Ecological Model (McLeroy)



Community factors:

- Access to facilities, goods and services within a larger social environment
- Healthcare
- Community education
- Safety
- Sanitation
- Spaces
- Sociocultural norms, values
- Economic, political influences
- etc...

The Socio-Ecological Model (McLeroy)



The Socio-Ecological Model

The SE model helps us look at the determinants of health at different levels of human interaction with the environment.

The SE model may be used for:

- Understanding environmental influences on behaviour
- Targeting/modifying these influences for public health interventions

Determinants of Health: A Framework for Reaching Healthy People

<https://www.youtube.com/watch?v=5Yb3B75eqbo>