Public Health Frameworks

Cecilia Teng

PhD, BSc(Pharm)(Hons)

Saw Swee Hock School of Public Health

National University of Singapore

https://poolsbybradley.com/

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.

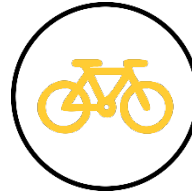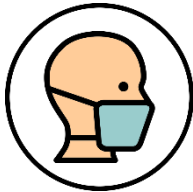Prof C.E.A. Winslow (1920), SPH, Yale University

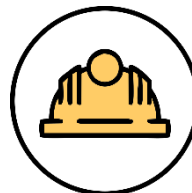# Public health in Singapore: some examples

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
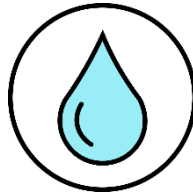
Advocate mental wellness

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)

cna

Where the mozzies are

- Dengue clusters
- Zika clusters

Straits Times
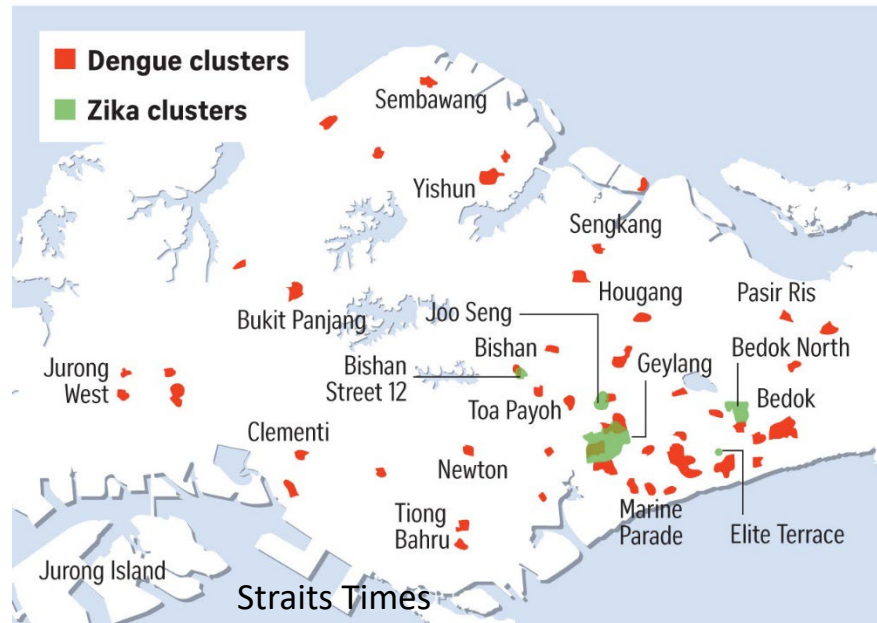
What is Public Health?

"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

1.Monitoring and Surveillance

What is the problem?

2. Identify risk and protective factors

What are the causes?

4. Implementation

Scaling up effective policy and programmes

3. Develop and evaluate interventions

What works and for whom?
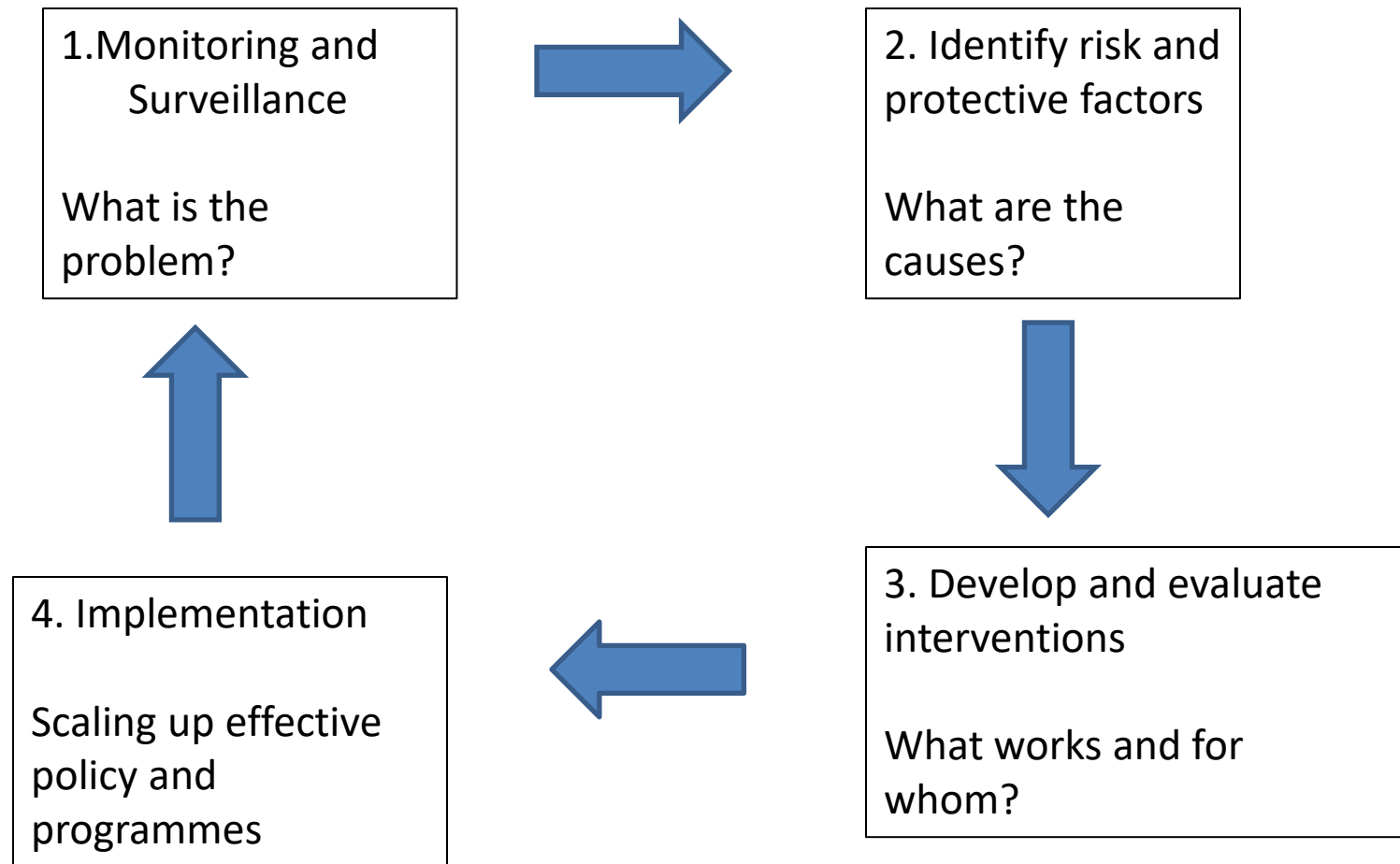
The Public Health Approach

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____
- W____
- W____
- W____
- H___

The Public Health Approach

2. What are the causes?

Identify risk and protective factors

- Why 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
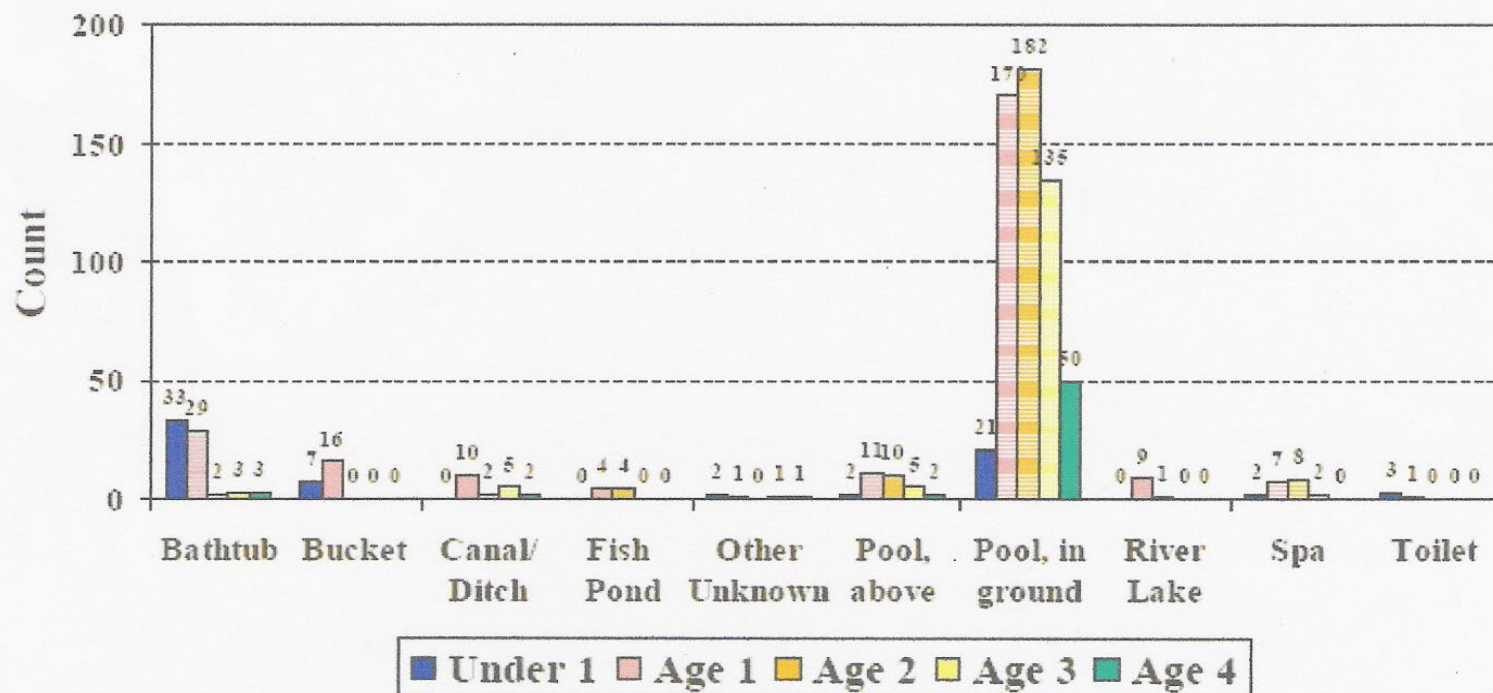
Source: Incidence reports from fire departments

Drowning in Arizona

Attributed Cause, 1988-2000

Cold Months

Other or Unknown — 11%

Supervision Problem — 11%

Safety Door Failed — 0%

No Barrier — 52%

Gate or Latch Failed — 21%

Inadequate Fence — 5%

Warm Months

Other or Unknown — 9%

No Barrier — 23%

Inadequate Fence — 4%

Supervision Problem — 51%

Gate or Latch Failed — 13%

Safety Door Failed — 0%
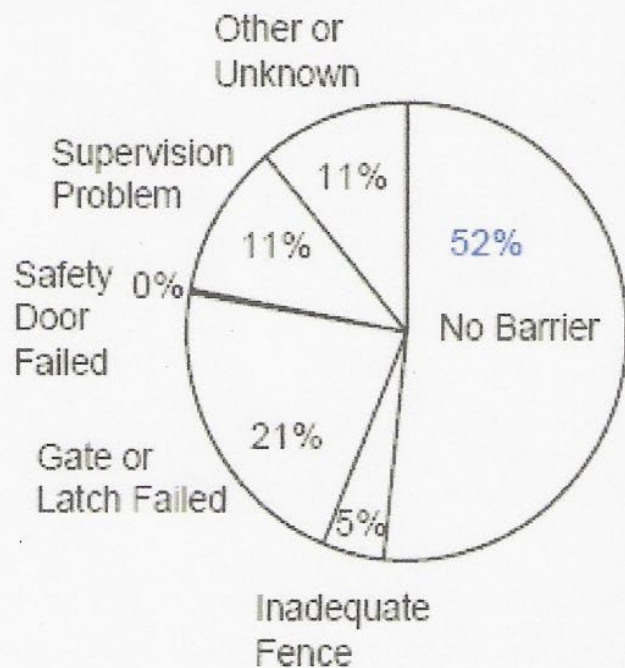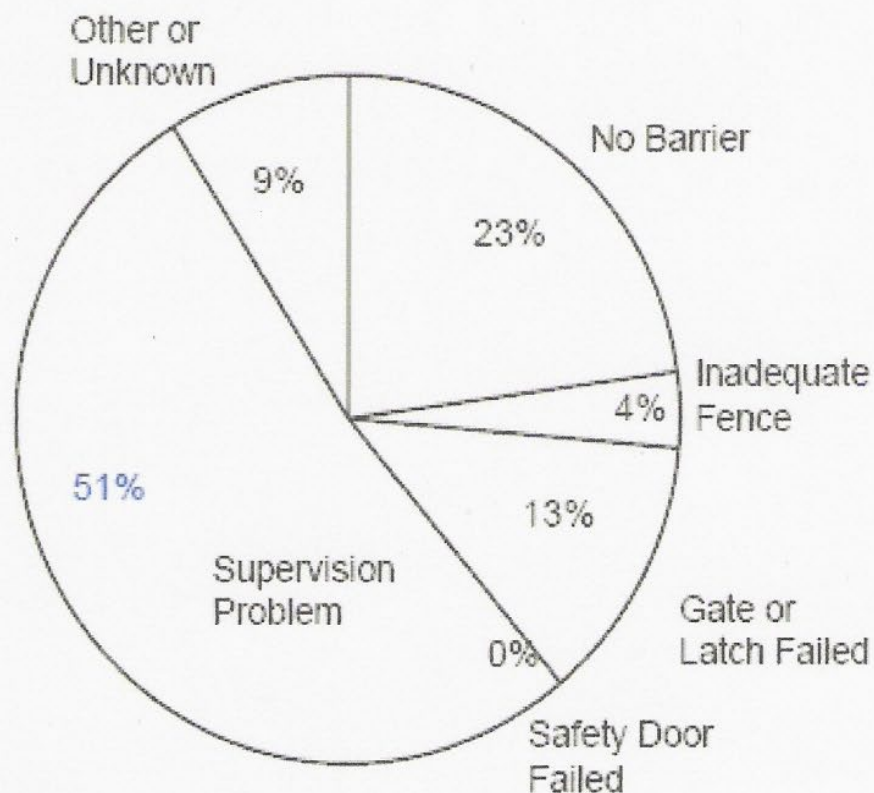
Source: Incidence reports from fire departments

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 _____ action
- Develop _____ educational program
- Develop an _____ 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:

Year	Rate/100,000
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

Year	Rate/100,000
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
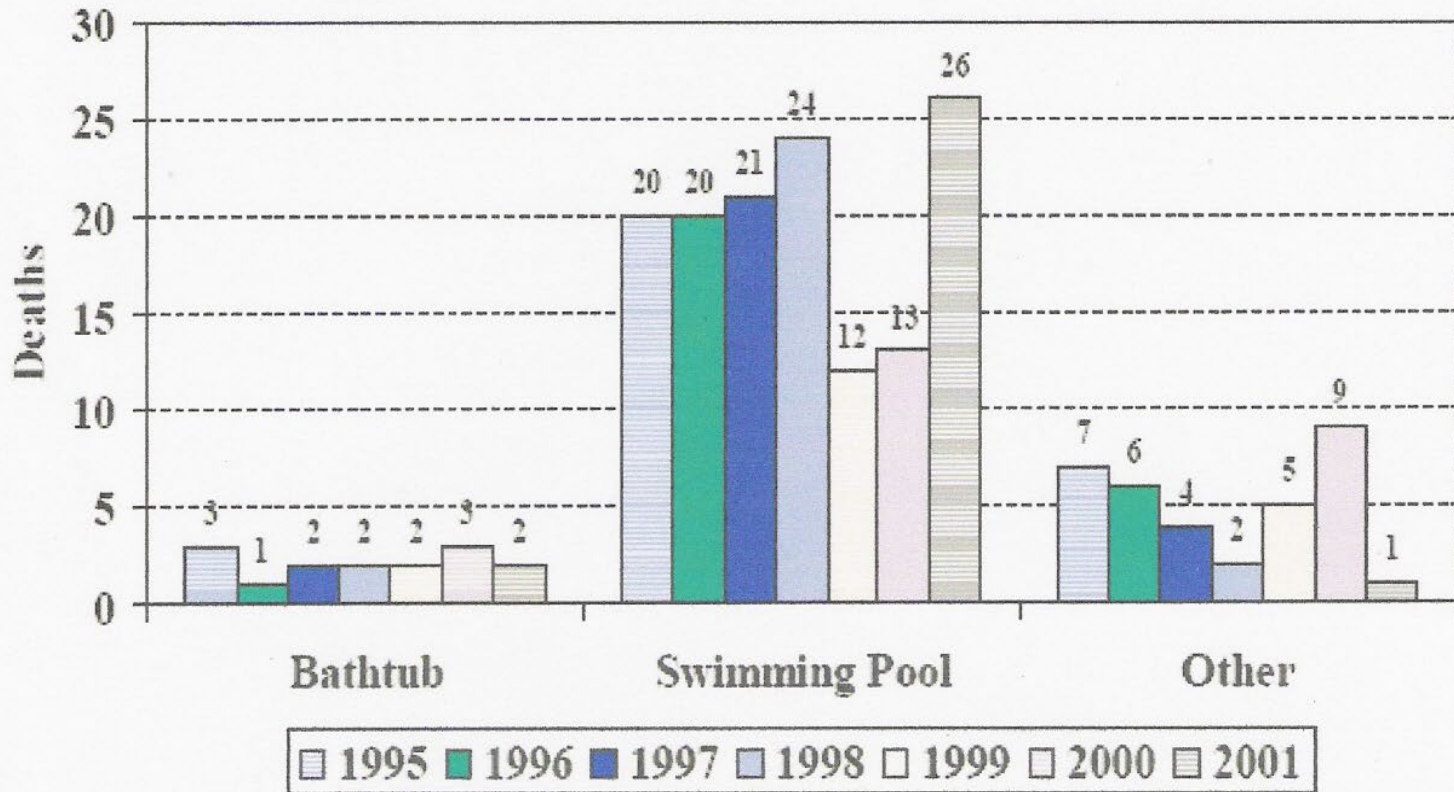
Source: Arizona Vital Statistics

Drowning in Arizona

- What happened?

- We have to return to data collection and analysis to seek the answers
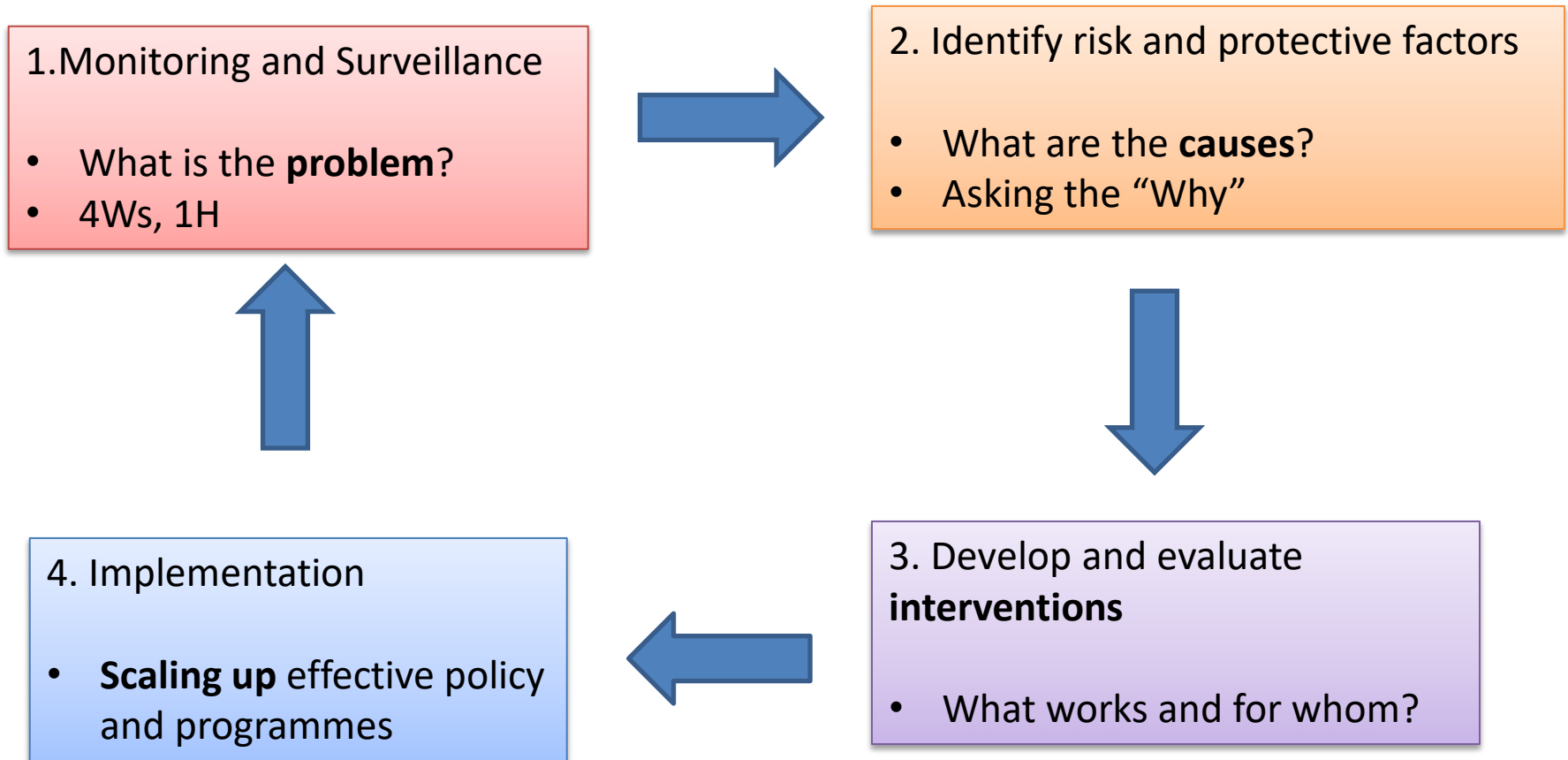
Drowning in Arizona

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

1. Monitoring and Surveillance

- What is the **problem**?
- 4Ws, 1H

2. Identify risk and protective factors

- What are the **causes**?
- Asking the "Why"

4. Implementation

- **Scaling up** effective policy and programmes

3. Develop and evaluate interventions

- What works and for whom?
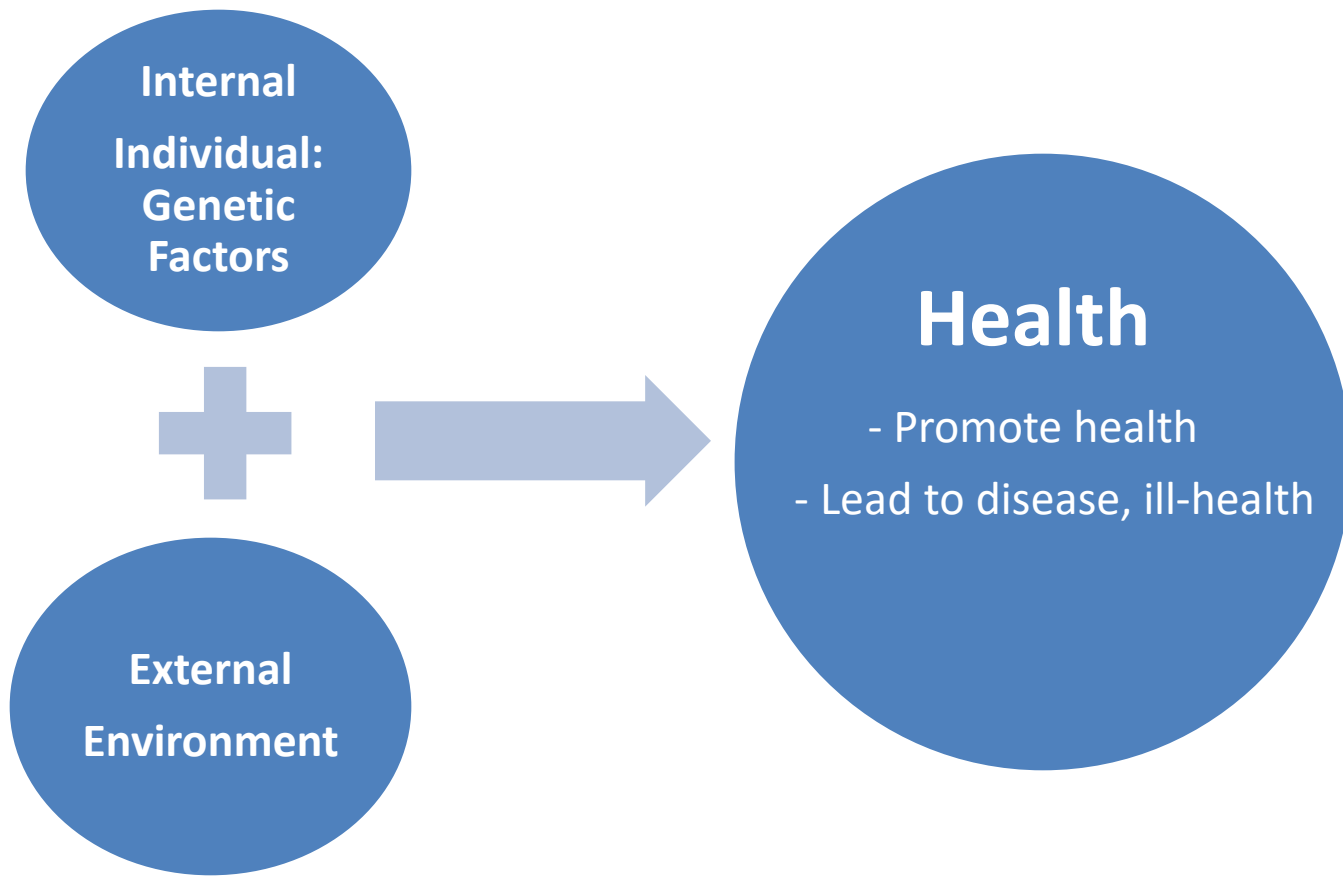
Your Health and the Socio-Ecological Model

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 _____, _____, and _____ well-being, and not merely the absence of disease or infirmity."

- World Health Organization (WHO)

Internal

Individual: Genetic Factors

External Environment

Health

- Promote health

- Lead to disease, ill-health

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**

World Health Organization

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

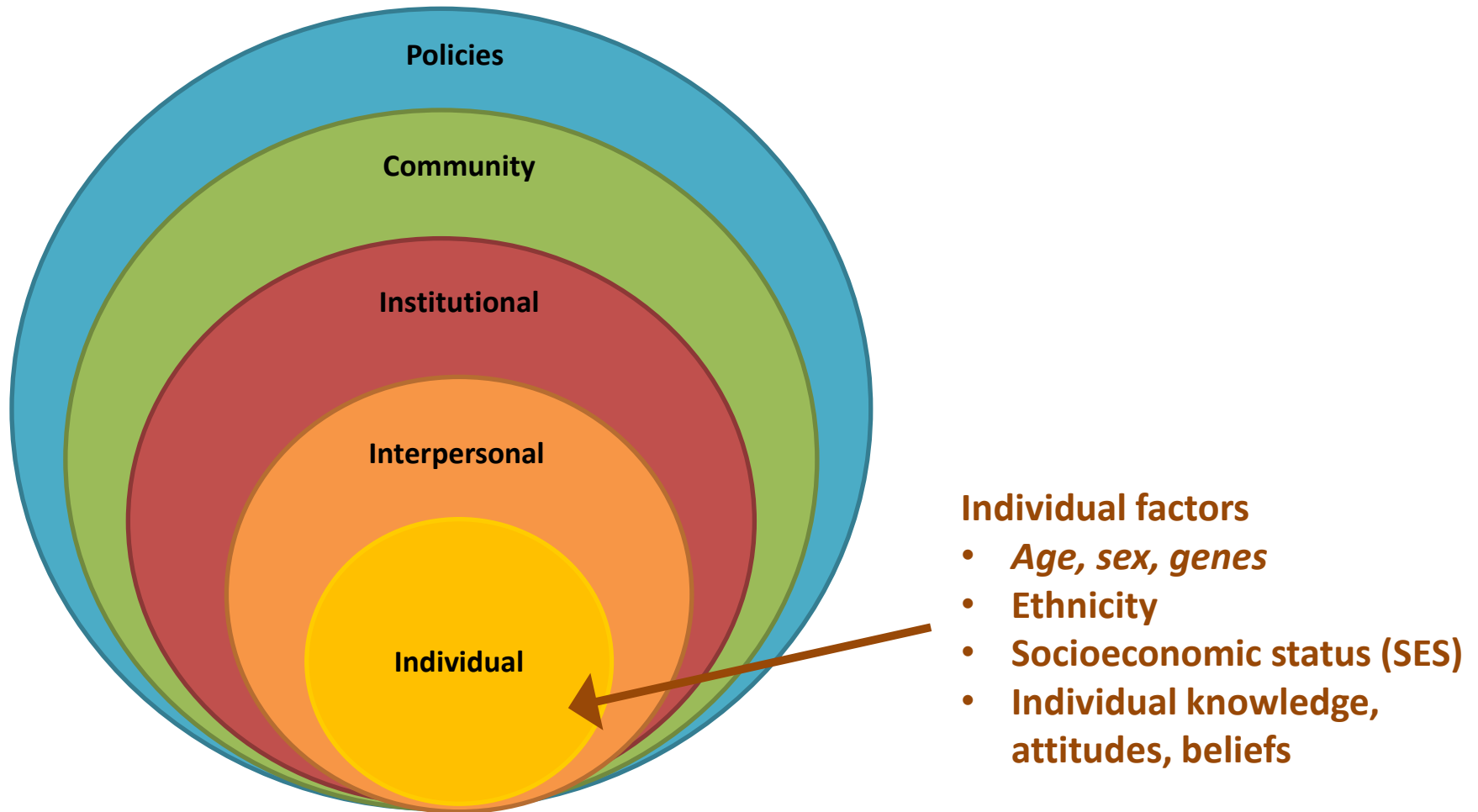– The way they experience and recover from illness

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."
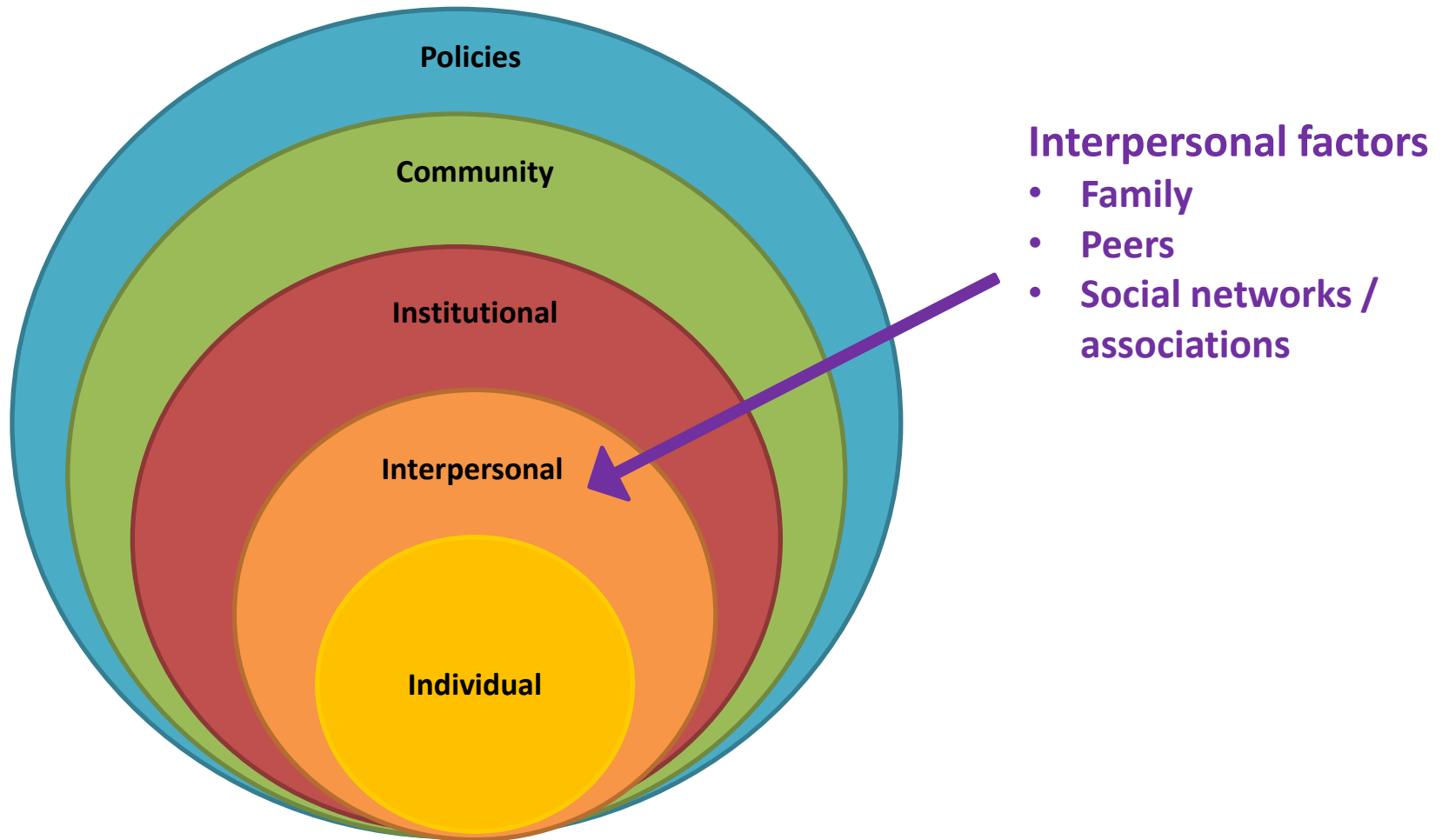
Kilanowski JF. Breadth of the socio-ecological model. Journal of Agromedicine. 2017;22(4):295-297.
Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2008). Health behavior and health education: Theory, research, and practice (4th ed.). John Wiley and Sons.
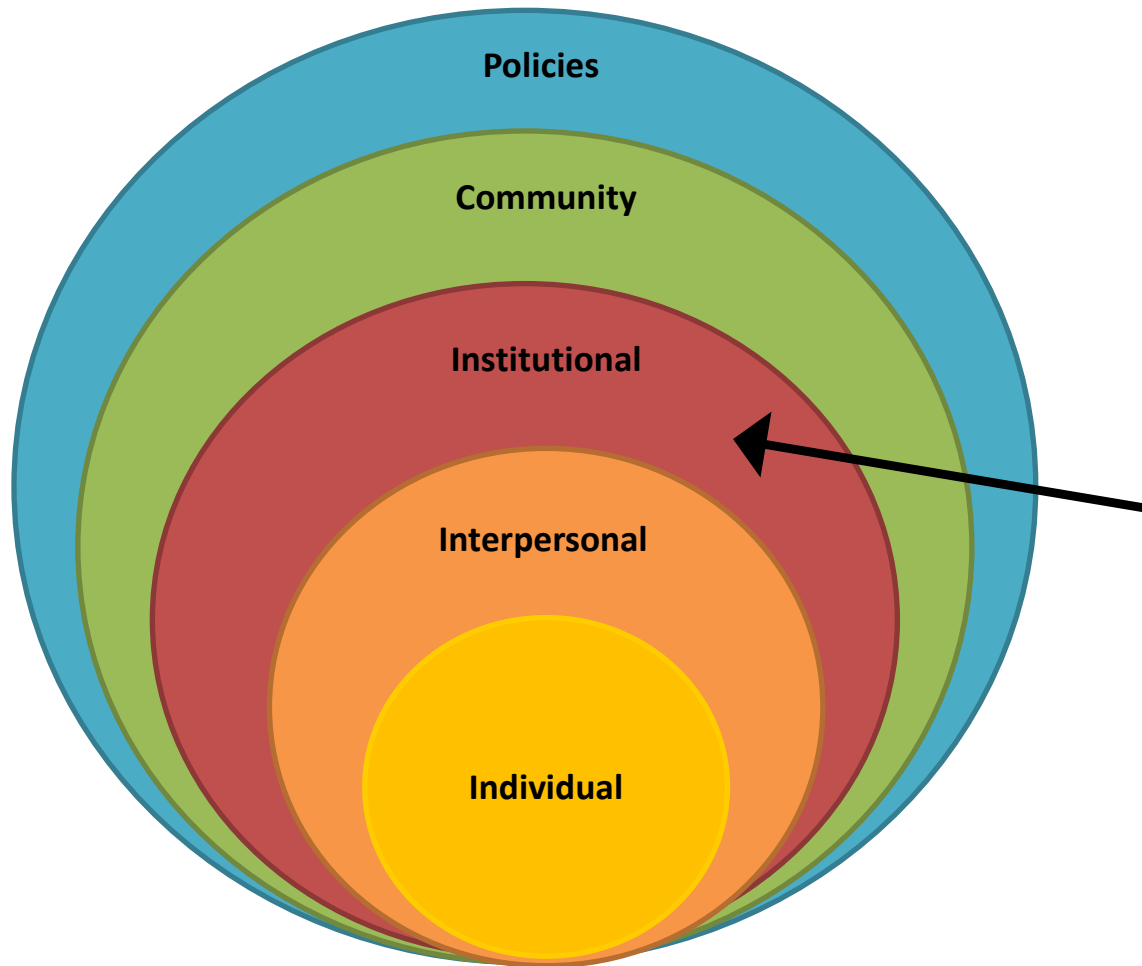
The Socio-Ecological Model (McLeroy)

McLeroy KR, Bibeau D, Steckler A, Glanz K. *An ecological perspective on health promotion programs*. Health Educ Q. 1988;15(4):351-377.

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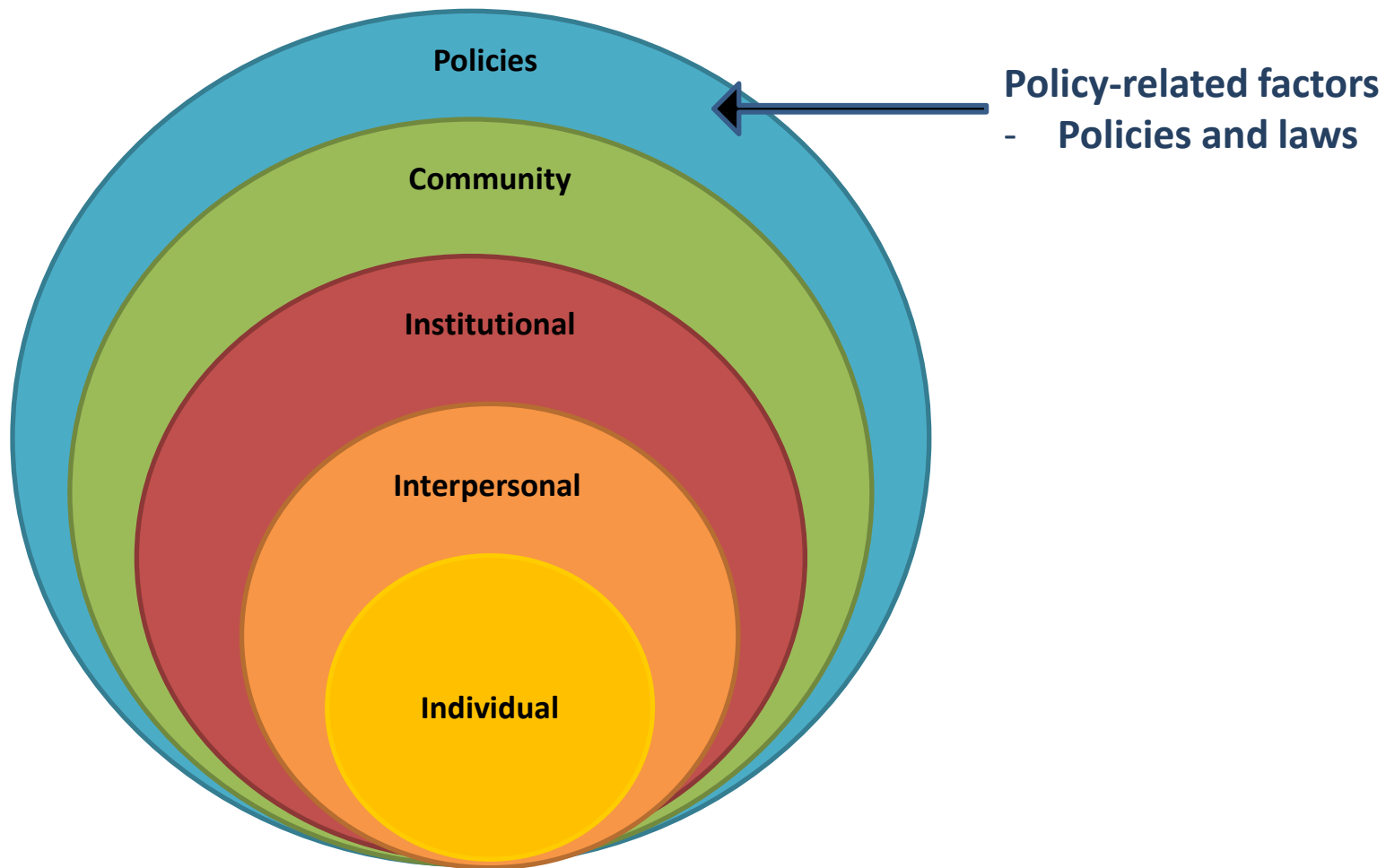
The Socio-Ecological Model (McLeroy)

Community factors:
- **Access to facilities, goods and services** _____
_____
- **Healthcare**
- **Community education**
- **Safety**
- **Sanitation**
- **Spaces**
- **Sociocultural norms, values**
- **Economic, political influences**
- **etc…**

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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

McLeroy KR, Bibeau D, Steckler A, Glanz K. *An ecological perspective on health promotion programs*. Health Educ Q. 1988;15(4):351-377.

Determinants of Health: A Framework for Reaching Healthy People

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