WATER QUALITY AND SANITARY CONDITIONS – DETERMINANTS OF RURAL PUBLIC HEALTH

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water = biological life synonym
Human body contains about 70 % water.

Water in our body is the medium for carrying physiological processes (eg blood circulation, digestion, elimination of toxins) and to maintain physiological constants (eg body temperature).

- In addition to role in human body physiology, water is basic element for individual and home hygiene, food preparation.

- The amount of water needed for household needs is estimated between 40-280 l/person/day (more in industrialized urban areas, which is consumed about 400-500 l/capita/day).

- Water is indispensable for locality sanitation, but also for agriculture and economics.

Individual needs of hot cold water

- Maintaining corporal hygiene
- Increasing health and resistance against diseases
- Household needs
- Washing fruits and vegetables, cooking
- Cleaning and maintenance of clothing and footwear

Water needs of human communities

- Urban needs – for public sanitation,watering green spaces etc.
- Industrial needs
- Agriculture needs – breeding, vegetable crops

Alteration of natural water properties (organoleptic, physical, chemical, biological, bacteriological), through which water becomes harmful for human population, vegetation, animals = WATER POLLUTION

Natural pollution

- Consequence of natural phenomena
- Causes a temporar alteration of water properties: contamination with organic waste decomposed by microorganisms, plant debris, sand, animal corpses brought by water (floodings)

Artificial pollution

- Due to wate waters
- It may be:
  - Chemical (chemical substances results of industrial processes)
  - Physic (mineral suspensions)
  - Biological (with living organisms, human and animal dejection)
  - Radiological (radioactive substances)

- Given the growing demand for water, **maintaining water quality is mandatory**!

- Direct link between water and health is visible in case of illness due to insufficient qualitative and quantitative drinking water, as in absence/poor monitoring and wastewater treatment systems (frequent situation in rural areas).

Emerging risks in rural areas

- Lower level of civilization
- Lack of water treatment systems
- Precarious sanitary annexes, absence of collection and treatment systems for wastewater and household residue
- Contamination of surface waters, but in smaller measure also groundwater with pesticides (herbicides, insecticides, fungicides etc.), chemical fertilizers

Careful! some intermediate compounds resulting from decomposition can be even more toxic than initially applied compounds!

- Although entrance in organism of these toxic is prior respiratory and cutaneous, diseases may also occur by digestive contamination, when water sources in rural areas are contaminated through the use of these substances in agriculture.

(eg contaminated water tables through “washing” pesticides by forecast precipitations shortly after application).

- In human body, these substances determine liver, kidney, digestive toxicity but also neurological effects.

Hydric pathology = diseases through water

pathogens in drinking water
have primordial epidemiological
significance

↓

waterborne infectious diseases

acute and global effects on
exposed population = epidemics

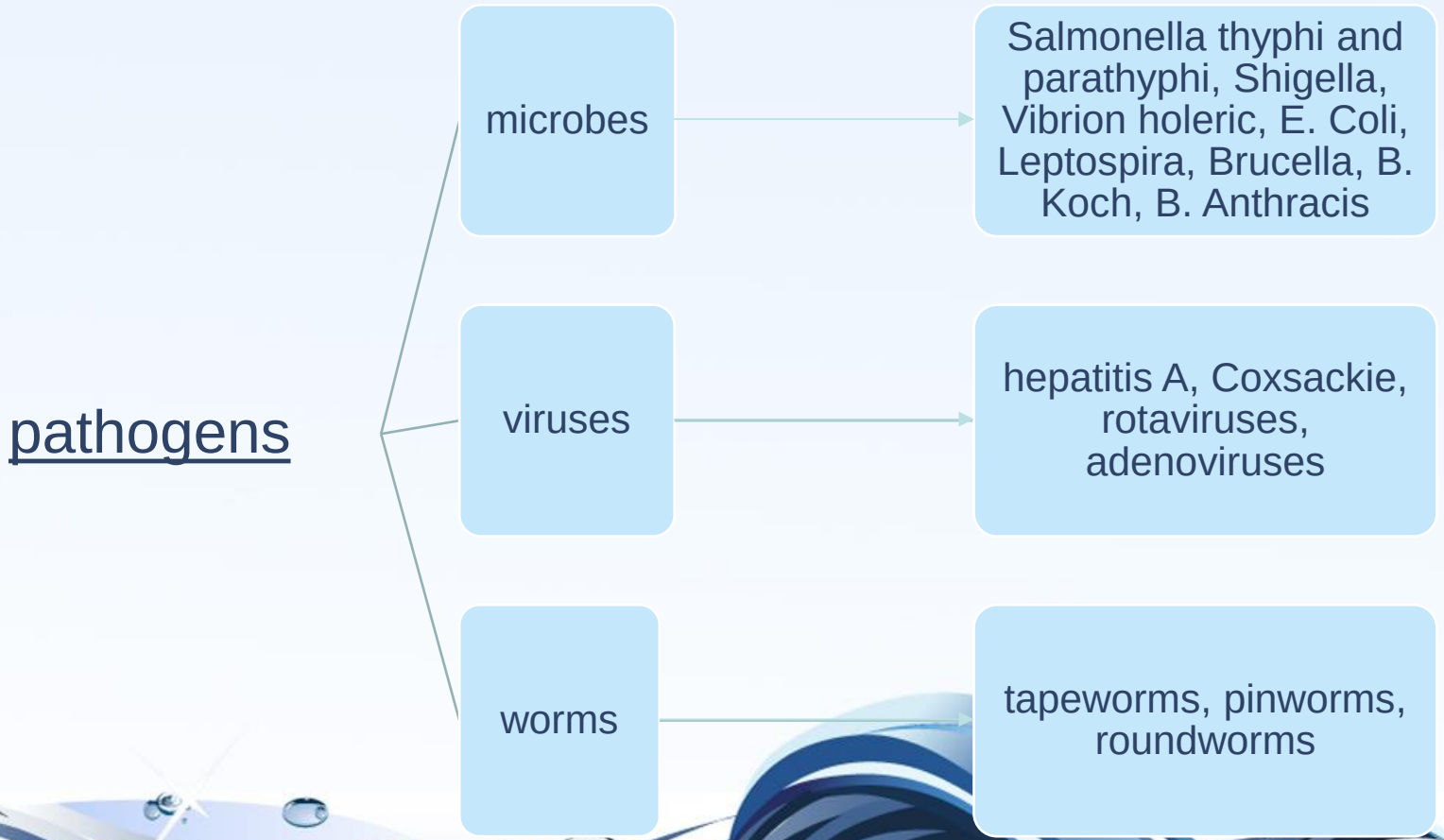
↓

vulnerable population groups
in rural areas:

children, old people, chronically ill people

conditions, actions and professions exercised in rural areas with increased risk of disease, which can become source of infection:

Source of infection = sick people or healthy carriers for pathogens; animals



Infection with pathogens leads to:

- Gastroenteritis, enterocolitis, hepatitis;
- Respiratory, conjunctival infections, meningo-encephalitis;
- Parasitosis, mycosis.

Prevention in infectious hydric pathology

- Protection of drinking water sources against biological pollution by:

  - proper collection and removal of toilet and agro-livestock waste;

  - detection and treatment for human and animal source infection.

- If possible – filtering and disinfection drinking water;
- Sanogene attitude – promoting health population by keeping informed upon transmission possibilities of hydric epidemics but also preventive measures.

Tips for population

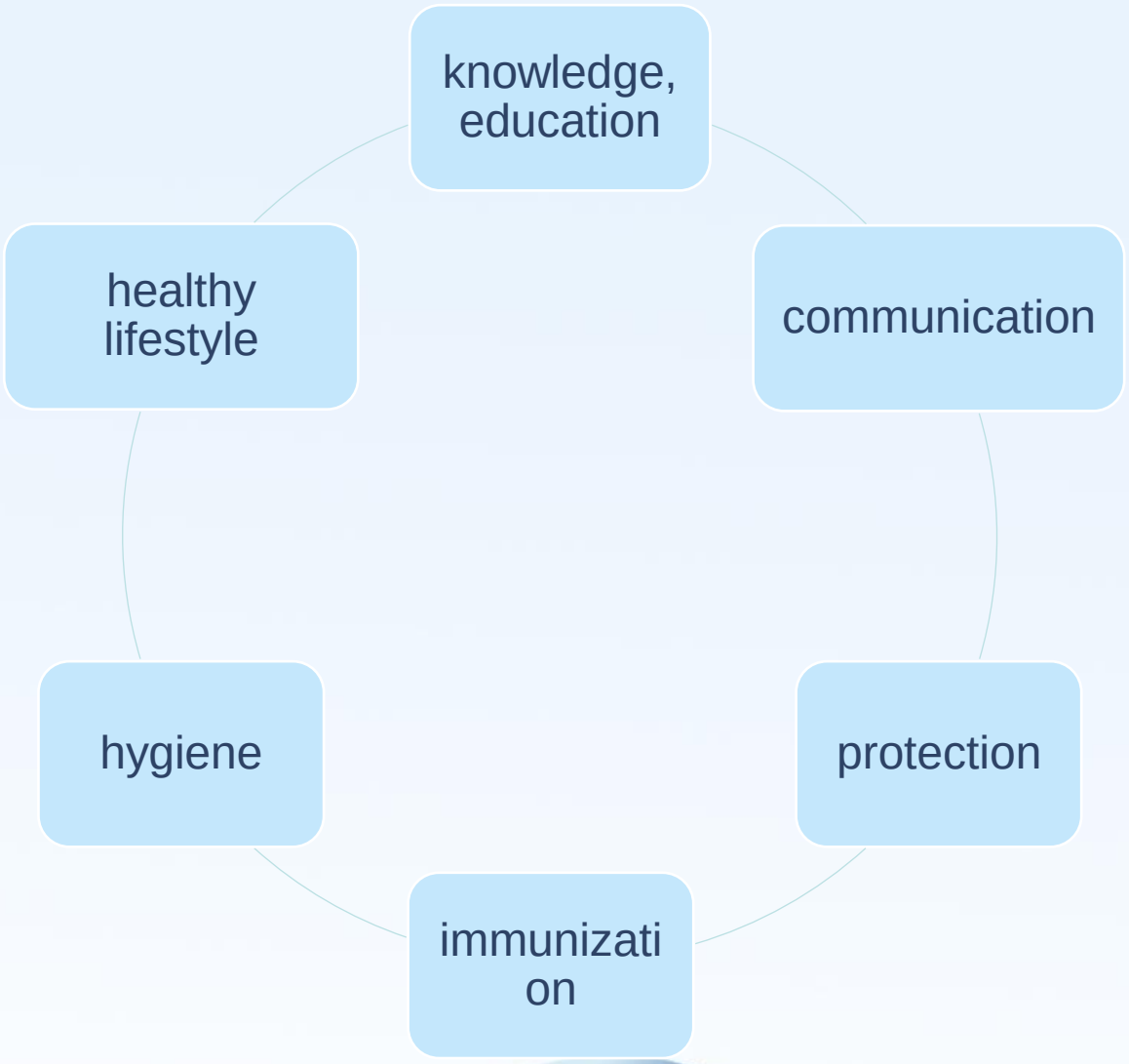
- Considering imminent natural disasters is necessary storage in household of bottled rezerve water;
- Boiling and cooling drinking water before consumption;
- Avoiding uncertain origin food and beverage;
- Body hygiene rules, cleaning fruits and vegetables before consumption;
- Avoiding bathing in places which are not specially prepared and monitorized;
- Immunoprophilaxis – vaccination for people who travel or live in areas at increased risk of disease.

Noninfectious hydric pathology

- Deficiency or excess of minerals in water composition may disturb human organism functionality, this can even become a public health issue!

- Own water sources (boreholes, wells) have great amount of limescale. In addition, depending on the area, water saddle may contain nitrates, nitritis, iron, manganese, ammonia etc.

Safety in water use and disposal converge in several aspects:



It outlines the need to involve local authorities, politicians, health and educational institutions as reguarding implementation of safety plans and measures for water and sanitation systems.

Objectives:

- ✓ Integration of sanitation systems in rural areas;
- ✓ Increasing knowledge and information level in population;
- ✓ Hydric disease prevention (decreasing epidemics number and extent, but also other diseases caused by water quality alteration);
- ✓ Improving population health.

Let’s keep **WATER** CLEAN, IT IS THE MIRACLE OF LIFE!

THANK YOU.