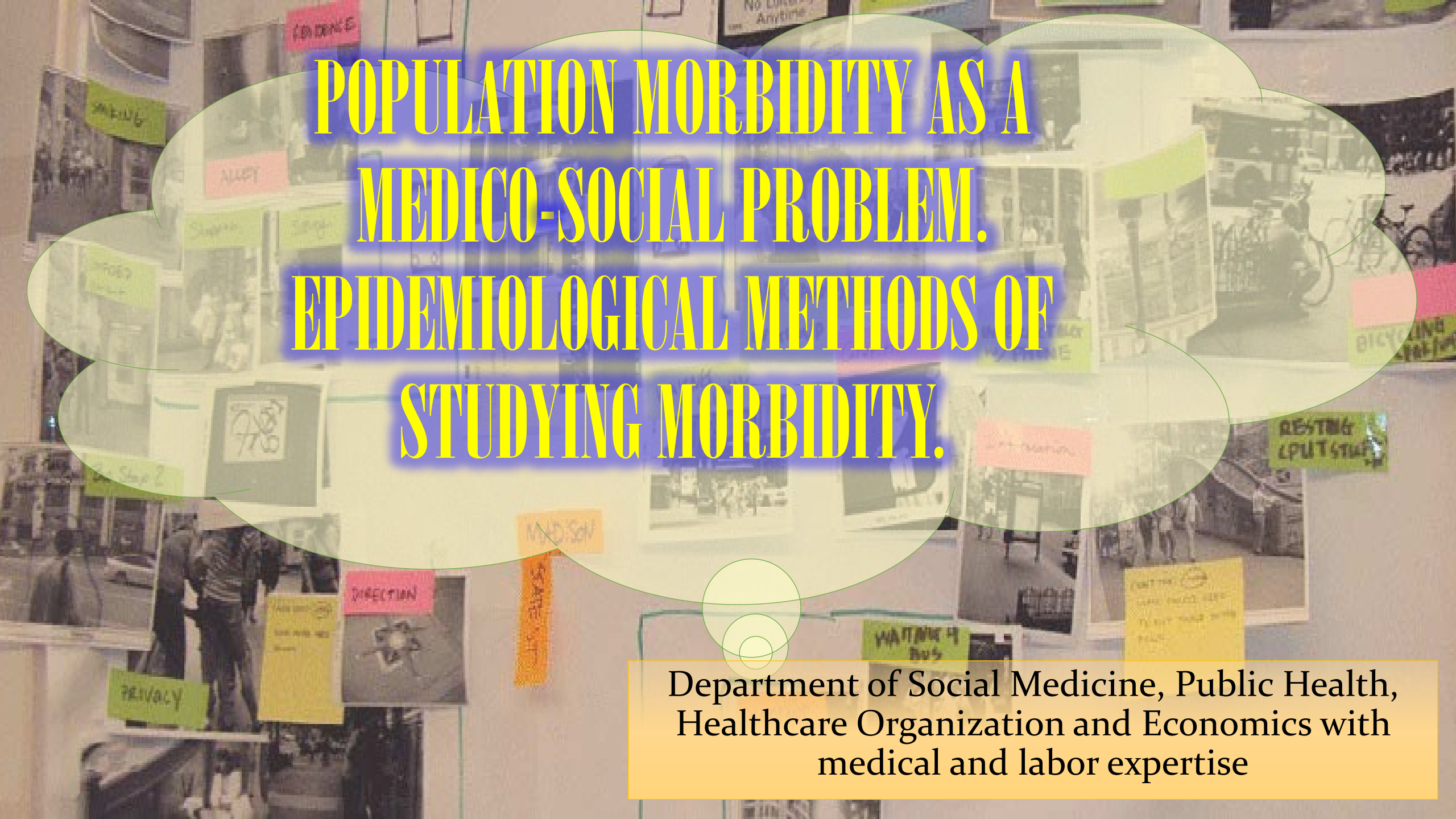

POPULATION MORBIDITY AS A MEDICO-SOCIAL PROBLEM. EPIDEMIOLOGICAL METHODS OF STUDYING MORBIDITY.

Department of Social Medicine, Public Health, Healthcare Organization and Economics with medical and labor expertise

Population health is a conventional statistical concept characterized by:

By demographic indices:

- Birth rate;
- Mortality;
- Population growth
- Life expectancy

By morbidity indices:

- General, primary
- Infectious
- Hospital
- With temporary disability, etc.

By disability indices:

- General
- Primary

According to the indicators of physical development
According to the indicators of pre-existing conditions (the state of the immune system)

SUPERNESS OF THE MODERN WORLD

THE UNPRECEDENTED LEVEL OF RICHES	POORNESS
AVAILABILITY OF SIGNIFICANT RESOURCES	POVERTY
TECHNOLOGICAL EXPERIENCE	isolation
BAGGAGE SCIENTIFIC AND MEDICAL KNOWLEDGE	DISEASE
DEMOCRACY	INDEPENDENCE TO ACCESS TO SOCIAL ADVANTAGES
THE RULE OF LAW	UNEMPLOYMENT

THE VALUE OF ANALYSIS OF THE INCIDENCE AND STRUCTURE OF THE DISEASE

1) preparation and proper distribution of personnel;
2) network planning;
3) rational organization of various types of medical and social assistance;
4) carrying out of preventive and improving measures;
5) quality control of medical care.

Basic methods of studying the morbidity indicators

- applying for medical help to medical institutions (acute diseases are mostly registered)
- medical examinations of certain groups of the population (chronic diseases are mostly recorded);
- by reason of death;
- according to a population survey (questionnaire);
- special sampling studies.

"HEALTH INDEX. UKRAINE" INCLUDES 5 COMPONENTS RELATED TO THE AIMS OF THE HEALTH SYSTEM

SATISFACTION WITH MEDICAL ASSISTANCE

REFERENCE TO A DOCTOR IN CASE OF DISEASE AND PREVENTION OF DISEASE

EXPENDITURE ON HELP AND MEDICINE

HEALTH KNOWLEDGE AND HEALTHY BEHAVIOR

HEALTH STATUS

An example of a specially organized study

STEPS is a WHO-recommended approach for the epidemiological surveillance of NCD risk factors.

The STEPS study assesses participants' overall health by several indicators and determines what adverse health effects are involved.

The STEPS study in Ukraine was conducted as part of the implementation of the National Plan of Action for Noncommunicable Diseases to achieve the 2030 Global Sustainable Development Goals.

The study consists of three steps:

STEP 1: Interview participants to identify NCD behavioral and health risk factors:

STEP 2: Measure height and weight, waist and hip circumference, blood pressure and heart rate:

STEP 3: Measuring Biochemical Health Indicators: glucose and lipids in the blood by rapid tests: sodium, creatinine, potassium and iodine in the urine.

Burden of Disease is a concept introduced by WHO to serve the economic and social expression of the effects and problems of disease

ВООЗ розраховує показники якості життя:

1. Якість життя з поправкою на рік (англ. Quality-adjusted life year або QALY)

QALY - кількість років життя з поправкою на її якість (добуток кількості прожитих років до її якості)

2. Роки життя, скориговані за непрацездатністю (англ. Disability-adjusted life year або DALY).

Показник тягоря хвороб **DALY** - параметр, який відображає кількість втраченого здоров'я (в роках) від різних причин, що викликають передчасну смерть або інвалідність населення.

Quality of life is the degree to which a person's material, cultural and spiritual needs are met.

WHO defines quality of life as people's perception of their position in life, depending on cultural characteristics and value system and in connection with their goals, expectations, standards, and concerns.

This indicator is estimated by the parameters:

- **physical:** vigor, fatigue, physical discomfort, sleep and rest;
- **psychological:** self-esteem, concentration, positive emotions, negative experiences, thinking;
- **degree of independence:** daily activity, efficiency, dependence on medicines and treatment;
- **life in society:** daily activity, social ties, friendships, social significance, professionalism;
- **environment:** housing and lifestyle, security, leisure, information availability, ecology (climate, pollution, densities);
- **spirituality and personal beliefs.**

According to the Global Burden of Disease, the main causes of deaths for both women and men have been identified. (Top 10 "Killers of Humanity")

1. Increased blood pressure (hypertension). High blood pressure kills the most people.
2. Nicotine dependence. Smoking kills about five million people each year. Scientists have come to the conclusion that by 2035 this figure will double.
3. Obesity.
4. Hunger and malnutrition.
5. Diabetes mellitus. The development of diabetes can be caused by the already mentioned obesity, and an important role in its occurrence is played by hereditary factors.
6. Excessive salt intake.
7. Insufficient consumption of vegetables and fruits
8. Environmental factor.
9. Increased cholesterol.
10. Alcohol addiction causes not only serious illnesses directly related to alcohol abuse (such as liver cirrhosis) but also significantly increases the incidence of death from external causes (injuries, poisoning, car accidents) and risky behavior, including suicides.

In the countries of the European Region, the DALY analysis of disease burden shows that nearly 60% of the overall disease burden in the WHO region is accounted for by seven leading risk factors:

- high blood pressure (12.8%),
- tobacco (12.3%),
- alcohol (10.1%),
- elevated blood cholesterol (8.7%),
- overweight (7.8%),
- insufficient consumption of fruits and vegetables (4.4%),
- sedentary lifestyle (3.5%).

Each of the leading risk factors listed is associated with at least two leading diseases.





Morbidity Frequency Measures

To describe the presence of disease in a population, or the probability (risk) of its occurrence, we use one of the morbidity frequency measures. In public health terms, disease includes illness, injury, or disability.

Disease Incidence Rate

- An **incidence rate** : rate is the number of new cases per population at risk in a given time period., such as a new case of illness, occurs in a population over a period of time.

Incidence Rate

Incidence rate =

$$\frac{\text{New cases occurring during a given time period}}{\textit{population at risk during the same time period}} \times 10n$$

Disease Attack Rate

In epidemiology, **the attack rate** is the biostatistical measure of frequency of morbidity, or **speed of spread, in an at risk population**. It is used in hypothetical predictions and during actual outbreaks of disease.

Disease Prevalence Rate

- **Prevalence:** The number or proportion of cases or events or conditions in a given population.
- **Prevalence Rate:** The proportion of persons in a population who have a particular disease or attribute at a specified point in time or over a specified period of time.

Prevalence Rate= new + old case

Mortality Statistics

- **Mortality Rate**: A measure of the frequency of occurrence of death in a defined population during a specified interval of time.

1. **Mortality Rate, Infant**
2. **Mortality Rate, Neonatal**
3. **Mortality Rate, Postneonatal**

Mortality Rate, Infant:

the number of deaths among children under one year of age reported during a given time period the number of births reported during the same time period.

The infant mortality rate is usually expressed per 1,000 live births.

Mortality Rate, Neonatal

the number of deaths among children from birth up to but not including 28 days of age

the number of live births reported during the same time period.

The neonatal mortality rate is usually expressed per 1,000 live births.

Mortality Rate, Postneonatal

the number of deaths among children from 28 days up to but not including 1 year of age during a given time period

the number of lives births reported during the same time period.

The postneonatal mortality rate is usually expressed per 1,000 live births.

In the study of morbidity according to the requests for medical help distinguish the following types:

1. General incidence (Prevalence) - accounting for all diseases (acute and chronic, registered in the population of a certain territory for a certain period;
2. Infectious disease - a special account of acute diseases associated with the need for prompt anti-epidemic measures;
3. The incidence of major non-epidemic diseases causes special consideration due to their epidemiological and social significance (malignancies, tuberculosis, sexually transmitted diseases, mental illness, etc.):
4. Hospital or "hospitalized" morbidity makes it possible to study the composition of patients treated at the hospital;
5. The incidence of temporary disability of workers and employees is distinguished by its social and economic importance.

In the study of morbidity according to preventive examinations separately distinguish

PATHOLOGICAL LESIONS

Pathological lesions - the set of all diseases and pathological conditions revealed in complex medical examinations. This indicator gives an idea of the contingent of patients registered at a certain date. Chronic pathology is mainly distinguished and in most cases diseases that have not been addressed by the population to treatment and prevention facilities.

INCIDENCE OF MAJOR SOCIALLY SIGNIFICANT DISEASES

Diseases caused mainly by socio-economic conditions that are damaging to society and require social protection.

Some diseases are subject to special accounting:
malignancies (f. №090 / 0)
mental illness,
sexually transmitted diseases,
tuberculosis,
severe mycoses and the like. — (№089 / 0)
And also myocardial infarctions, strokes with hypertension, diabetes mellitus (f. 025/3-0)

HOSPITALIZED MORBIDITY

keeping records of patients treated at the hospital during the year, ie severe cases or those requiring special medical examination and treatment.

$$\frac{\text{THE NUMBER OF HOSPITALIZED}}{\text{AVERAGE ANNUAL POPULATION}} \times 1000$$

Unit of account: The case of hospitalization of the patient in hospital

Source of information: Card of the patient who left the hospital (f.066 / o)

The incidence of hospitalized patients is studied by the following indicators:

Frequency of hospitalization (ratio of the number of hospitalized for a particular disease or all hospitalized based on the population living in the territory);

Level of hospitalization by age, gender, place of residence (ratio of number of hospitalized patients of this group based on population of this group);

Hospitalization structure (the proportion of each disease among the total number of hospitalized patients; it is possible to calculate the structure of the hospitalized by age, sex, place of residence);

Average duration of treatment (ratio of number of bed-days spent by patients in the hospital to the number of out-patients): it is advisable to relate this indicator to the patients' age, diagnoses, treatment results and analyze separately for the patients discharged from the hospital and the dead.

MORBIDITY WITH TEMPORARY DISABILITY

The morbidity of workers leads to significant economic losses of society, which causes the great socio-economic importance of this problem.

Source of Information: Work incapacity certificate, temporary disability report

The unit of account is the case of disability.

The value of accounting for diseases with temporary disability

- Persons who have been ill frequently and for a long time;
- The proportion of people who have been ill during the year;
- The share of workers who did not fall ill during the calendar year (health index).

Criteria for identifying a group of people who are often and long-term sick:

OFTEN SICK:

4 or more cases of etiologically related diseases for the current year;
6 or more cases in the current year.

DURABLE SICK:

have been ill for more than 40 days due to etiologically related diseases;
have been ill for 60 days or more for the current year.

DISABILITY
(Morbidity with persistent disability)

Disability (as a statistical concept) is a set of indicators characterizing the frequency of persistent (permanent or long-term) disability of the population and the composition of persons with disabilities in the territory by age, groups of reasons, etc.

The main indicators characterizing disability

1. General disability
2. Disability contingent structure (by age, group, type of disability, cause of withdrawal (diagnosis)
3. Primary disability
4. Structure of primary disability
5. Reduction of disability group
6. Disability movement during the year (number at the beginning of the year + first recognized disabled - number of disabled persons = number of disabled persons at the end of the year