



Institutul Național pentru Sănătatea
Mamei și Copilului
"Alessandrescu-Rusescu" București



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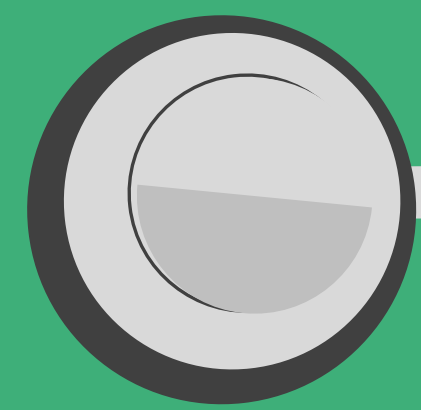
The Romanian experience in Health Examination Surveys (adults)

Dr. Silvia Teodorescu
Dr. Lăcrămioara Brandușe
Dr. Alexandra Cucu
Dr. Constantina Cristea

INSP

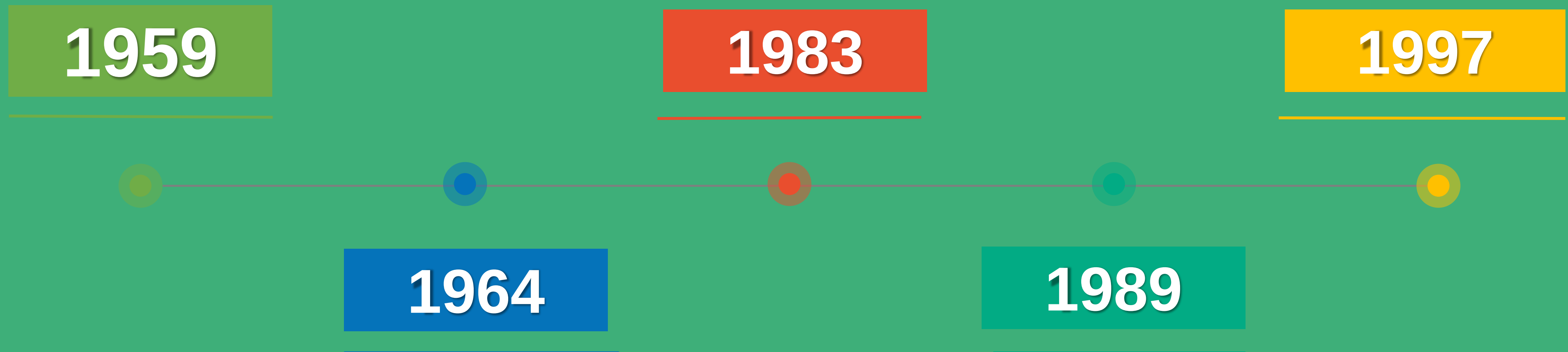


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- So far, 5 national surveys have been carried out in Romania to examine the health status of the population
- All these surveys complied with legislative regulations and were conducted based on the methodology developed by the Center for Computing, Health Statistics and Medical Documentation and based on diagnostic criteria developed by medical research institutes under the guidance of the Academy of Medical Sciences.
- The sample was representative
- The results obtained are perfectly compatible and at the same time representative for the health of the entire population of Romania

During 1958-1997, 5 periodic medical surveys were carried out on the most common and severe chronic diseases.



These surveys were conducted with samples of increasingly small, as the improvement of statistical methods, according to the WHO methodology.



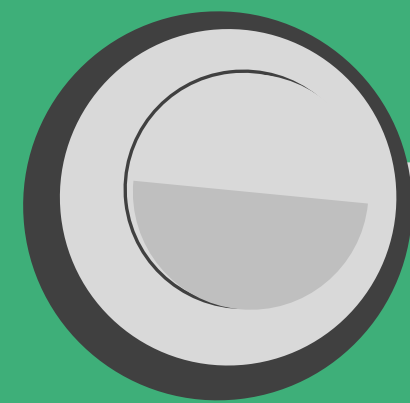
PURPOSE AND OBJECT OF THE MEDICAL INVESTIGATION

The purpose of the last survey is to know the dynamics of prevalence indices in a number of chronic diseases and disabilities compared to previous surveys.

In order to evaluate the health programs, the Ministry of Health organizes in 1997 the 5th Survey on the examination of the health status of the population.

The number of nosological entities to be detected is 99, and the number of disabilities is 61 according to the NOMENCLATOR OF PHYSICAL, PSYCHOLOGICAL AND SENSORY DISEASES AND DEFICIENCIES. Their diagnosis is specified on the basis of clinical and laboratory investigations, contained in the MANDATORY CRITERIA FOR DIAGNOSIS, which are identical to those of the surveys of 1983 and 1989.





METHODOLOGY OF NATIONAL SURVEYS OF POPULATION HEALTH

the methodology of the last three survey is identical in order to be able to correctly assess the dynamics of morbidity during this period:

The same in the last survey:

- clinical and laboratory diagnostic criteria
- the localities where it took place
- specialization of doctors from county and local commissions (internist, gynecologist, pediatrician, dentist, surgeon, neurologist, psychiatrist, ophthalmologist)
- gender (male / female),
- age groups
- 7 survey areas.

The survey covers:

99 chronic diseases,

61 physical, mental and sensory disabilities,

- diseases such as tuberculosis and tumors have been eliminated, for which the incidence and prevalence data are organized throughout the country, by mandatory declaration and their keeping in records in county and central registers.



HEALTH SURVEY METHODOLOGY

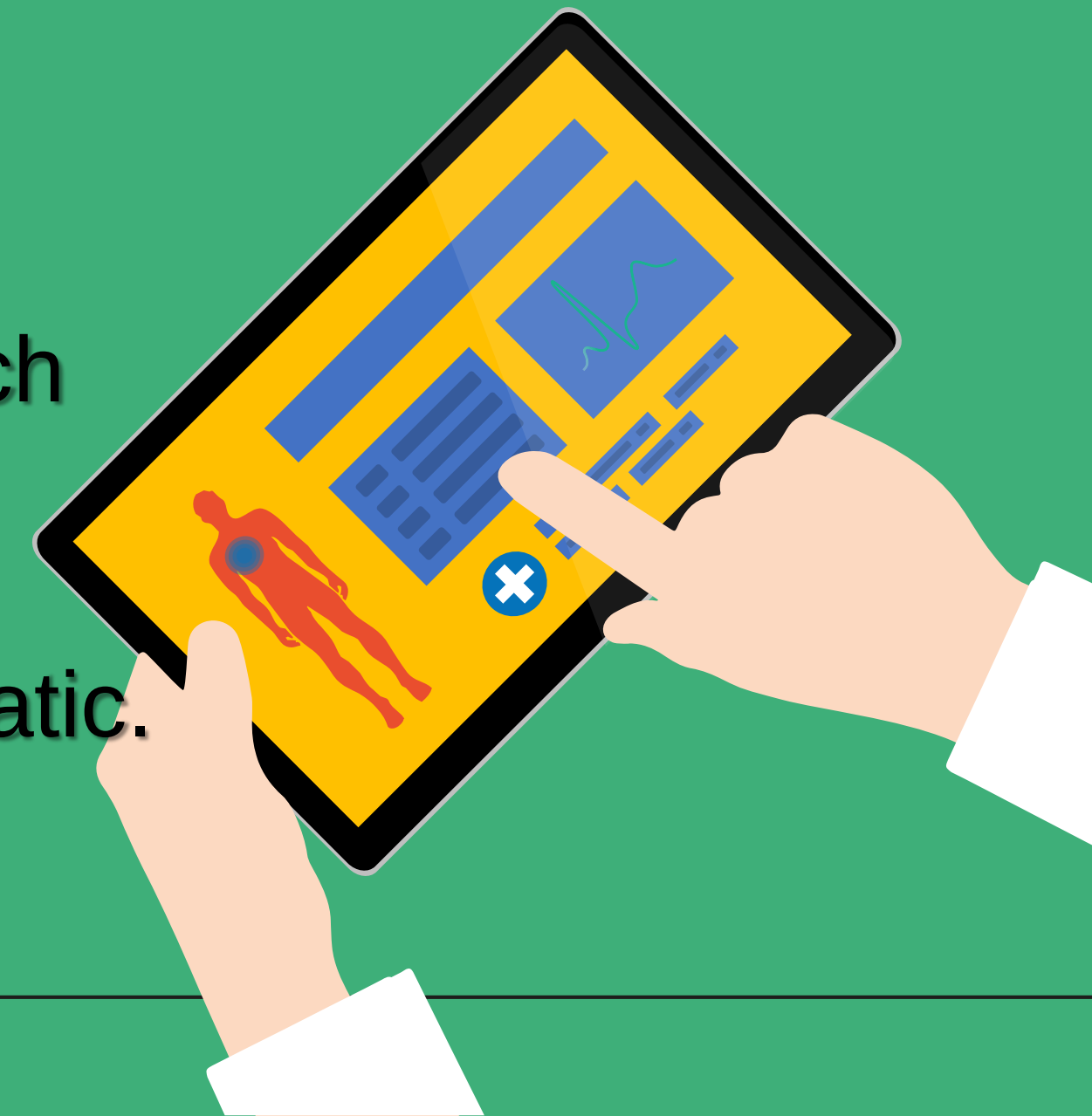
SELECTION OF THE REPRESENTATIVE SAMPLE

The selection is similar to the 4 previous surveys.

The selection of the sample is typical-stratified, of the third degree (in three stages), established since 1958, together with the Romanian Academy:

- Stage 1 - territorialization of the country in 6 areas plus the city of Bucharest
- Stage 2 - separation by environment (urban / rural) of each area;
- Stage 3 - selection of a number of 166 localities (urban and rural) which include the sectors in Bucharest.

The selection criteria were demographic (birth rate, infant mortality) and geo-climatic.



SIZE OF THE REPRESENTATIVE SAMPLE

The sample was 14,000 people to be examined.

WHO recommendation is over 10000 people

DISTRIBUTION OF THE SAMPLE BY AREAS AND LOCATIONS

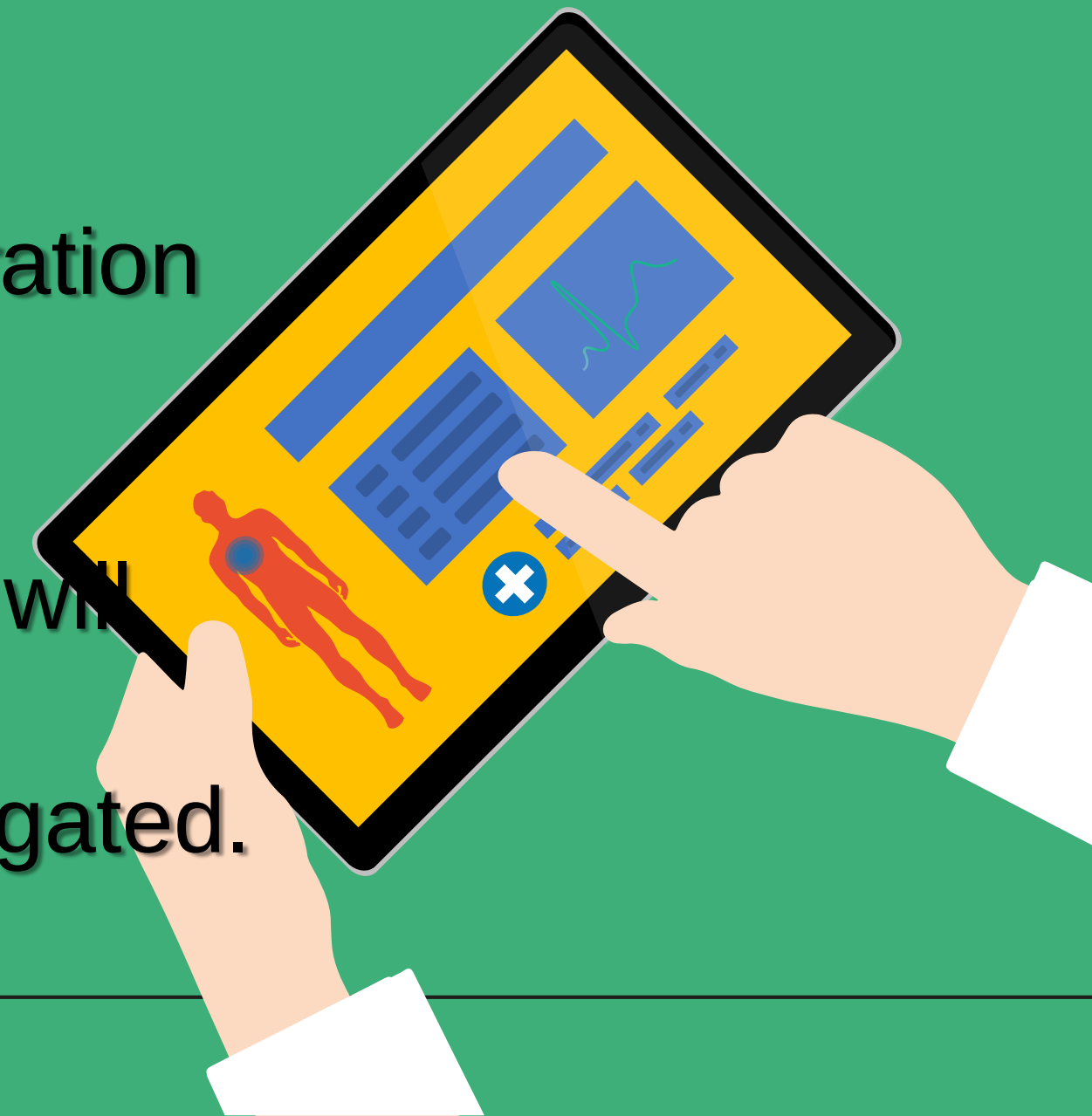
The distribution of the sample was made proportionally to the number of inhabitants of each area, within them urban and rural, and to the selected localities (2 municipalities or cities and 2 communes in each county, and in Bucharest in all sectors).

REGISTRATION OF ELIGIBLE PERSONS

The entire selected population was categorized by households and within the household by each member of the household.

The registration is made on streets, numbers streets, apartments, the registration unit being the household, not the family.

A catagraphy table will be drawn up for the Population Health Survey, which will contain no. current, name, date of birth, domicile, no. of the household, no. members, rank. This table will constitute the final list of persons to be investigated.



ORGANIZATION OF THE SURVEY



CENTRAL COMMISSION OF HEALTH SURVEY

COUNTY COMMISSION OF HEALTH SURVEY

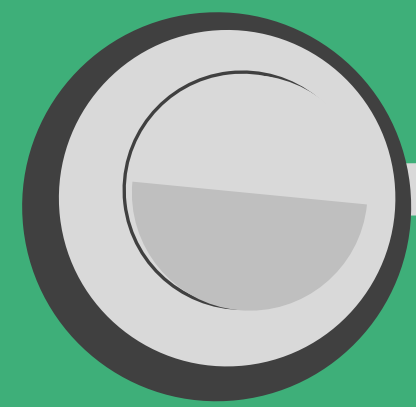
LOCAL COMMISSION OF HEALTH SURVEY

CENTRAL COMMISSION

The tasks of the Central Commission were:

- elaboration and multiplication of the paper on the survey methodology;
- defining and multiplying the “Nomenclature of diseases and deficiencies” that will be used;
- multiplying the “Diagnostic Criteria” elaborated by the institutions of the Academy of Medical Sciences;
- determining the sample size;
- fixing the localities where the investigation will take place;
- elaboration of the “Nomenclature of investigations”;
- elaboration and multiplication of the form “HEALTHCARE SURVEY SHEET” (precoded sheet) and of the specifications for completing and coding the survey sheet;
- elaboration of “Indications for central level verification” of the Health Survey Forms;
- elaboration of the methodology of statistical data processing;
- elaboration of programs for statistical computer processing of data;
- presentation of data on morbidity and deficiency prevalence indices;
- guiding the county commissions.





COUNTY COMMISSION

The county commission (including the Bucharest municipality) consists of 7 people:

- President: the director of the Sanitary Directorate;
- Secretary: the doctor in charge of the health assessment laboratory;
- Members:
 - a primary care physician of internal medicine,
 - a primary obstetrician-gynecologist,
 - a primary care pediatrician,
 - the chief doctor from the Medical Analysis Laboratory of the county hospital,
 - a person from the Health Assessment Laboratory.



COUNTY COMMISSION

Tasks of the county commission:

- organizing commissions of health survey by localities where their investigation, training and guidance are carried out;
- organizing the place of investigations and consultations;
- organization of mandatory laboratory investigations (including EKGs), which must be carried out until the arrival of the local commission of health survey;
- equipping the sanitary units at the level of which the investigation is carried out, with the necessary equipment and instruments, in accordance with the investigations to be carried out;
- taking measures regarding the hospitalization or the specialized consultation in order to diagnose the investigated persons at whom the local commission could not establish a precise diagnosis;
- quantitative and qualitative verification of the investigation files, their general and medical coding and transmission of the files to the central commission;
- organizing the resolution of medical treatment problems in the detected cases, when necessary;
- guiding and controlling the local commissions of health survey throughout its implementation.



LOCAL COMMISSION

The local commission that will carry out the investigation will function for the entire period of the investigation and consists of:

- an internal medicine doctor who is the head of the commission of health survey;
- a gynecologist;
- a pediatrician or general practitioner children;
- a dentist;
- a sanitary staff at each profile office

In order to elucidate some diseases or deficiencies in which the presence of another specialist is required, the county commission will nominate the specialists who will carry out the consultation in the respective locality.

The commission of health survey may issue, if necessary, a referral note or a hospitalization ticket to the polyclinic or territorial hospital in order to complete the explorations, with the mention “Health survey” for efficiency, and the results will be noted on the referral notes.

At the end of the investigation, it will hand over to the county commission all its files and observations, included in a report on the conduct of the investigation.



LOCAL COMMISSION

Duties of doctors from the local commission:

a. the internal medicine doctor

- It will examine the entire population aged 17 and over, the examination consisting of performing the anamnesis, clinical examination, interpretation of the results of laboratory investigations..
- Being the head of the commission, he will be responsible for the good development of the investigation and will submit to the county commission all the completed investigation forms.

b. the obstetrician-gynecologist

- will examine all married, widowed or divorced women, and unmarried women, who have in the past gynecological conditions.
- The obligatory examination consists in performing the anamnesis, gynecological examination (using valves), interpretation of the results of laboratory investigations.
- If necessary, he can direct the patients to the polyclinic or the territorial hospital.

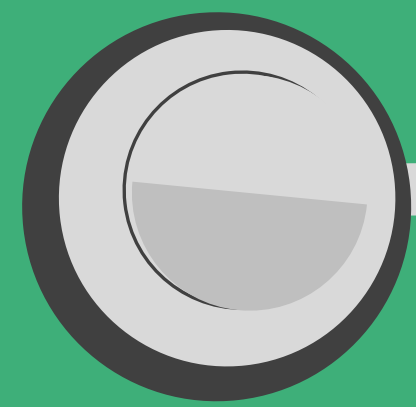
c. pediatrician or general practitioner children

- will examine all children up to the age of 16 (inclusive).
- The obligatory examination consists in performing the anamnesis, the clinical examination, the interpretation of the results of the laboratory analyzes.
- If necessary, he can direct the patients to the polyclinic or to the territorial hospital.

d. the dentist

- will examine the entire population aged 10 and over.





STAGES OF HEALTH SURVEY

1. Training of the county commissions of health survey
2. The catagraphy of the households from the localities where the survey is made and the selection of the households that will be examined.
3. Organizing local commissions of health survey.
4. First mobilization of the population to complete general data, somatometry, laboratory sampling (urine collection, blood, EKG)
5. The second mobilization (after the laboratory results have arrived at the dispensary) - a clinical medical examination is performed with specialists.
6. Verification and transmission of investigation sheets.
7. Central check of records.
8. Development of validation programs, data entry and presentation of tables.
9. Presentation of the analysis with the operative data of the investigation.
10. Presentation of volumes with final, standardized data.



RESULTS OF THE SURVEY

STRUCTURE OF THE SURVEY POPULATION - all the files are centralized, the processing and validation stage follows and finally we have the number of files finally processed

After the survey, all files (14000) were centralized, from which, following the standardization by gender, large age groups (0-14, 15-59, 60 and over) and to get closer to the structure of the country's population, were removed approximately 1800 files, leaving for processing 12,230 files, structured as a percentage by environments, gender, age groups and by areas

HOUSEHOLD MORBIDITY

It has defined the concept of:

- family,
- family nucleus,
- extended family,
- household.

There were 4,475 households with 12,230 people. The structure of the surveyed households was established according to the number of its members.

We analyzed the morbidity by contingents within the households, by environments, age groups according to the number of patients existing in each one. We also analyzed the morbidity on the main diseases or groups of diseases per household in total or on average.



CONTINGENCY MORBIDITY AND ESTIMATION OF THE NUMBER OF SICK PEOPLE

If we refer to the proportion of sick or healthy people and not to the number of diseases detected, we obtain the indicator of morbidity by contingents, which means healthy or sick people with one, two or more diseases.

It was analyzed:

- contingent morbidity in respondents aged under 15 years and estimated sick people in the 2 national surveys;
- morbidity by gender, environments, in the population over 15 years of age and the number of sick people was estimated in the two national surveys;
- contingent morbidity by areas, environments, age groups.

PREVALENCE OF MORBIDITY ON MAIN DISEASES

For each class of disease or disease analyzed, the disease code was mentioned according to the International Classification of Diseases - 9th Revision - list of 999 codes.

It was also possible to estimate the number of existing (not sick) diseases throughout the country. Diagnostic criteria for each disease were mentioned and prevalence indices were calculated by gender, environments, age groups, areas, as well as standard deviations, mean errors, and confidence intervals.



PREVALENCE OF MORBIDITY BY CLASSES AND GROUPS OF DISEASES

In addition to the analysis of contingency morbidity in households by various characteristics, the diseases and classes of diseases with higher prevalence were analyzed, as well as the estimation of the number of diseases (so not people with diseases) by country, gender, environment, in respondents in age 15 and over, because chronic diseases are rarer in children under 15 years.

The prevalence of morbidity by areas was analyzed, analyzing the areas with the highest prevalence indices on some diseases or groups of diseases.

OCCUPATION AND EDUCATIONAL LEVEL

Because the current occupation was recorded in the health survey and this often does not correspond to the one had in the entire period of activity, the epidemiological relations between the occurrence of the disease and the occupation are not very edifying. However, it is of great importance to know the proportion of each occupation, or rather group of occupations, by disease at the time of the July 1997 survey.

It has been reported education level of respondents (preschool, elementary school unfinished, finished elementary school, middle schools, high schools, post-secondary, higher education completed) by groups of diseases per 100 sick people



PREVALENCE OF DISABILITIES

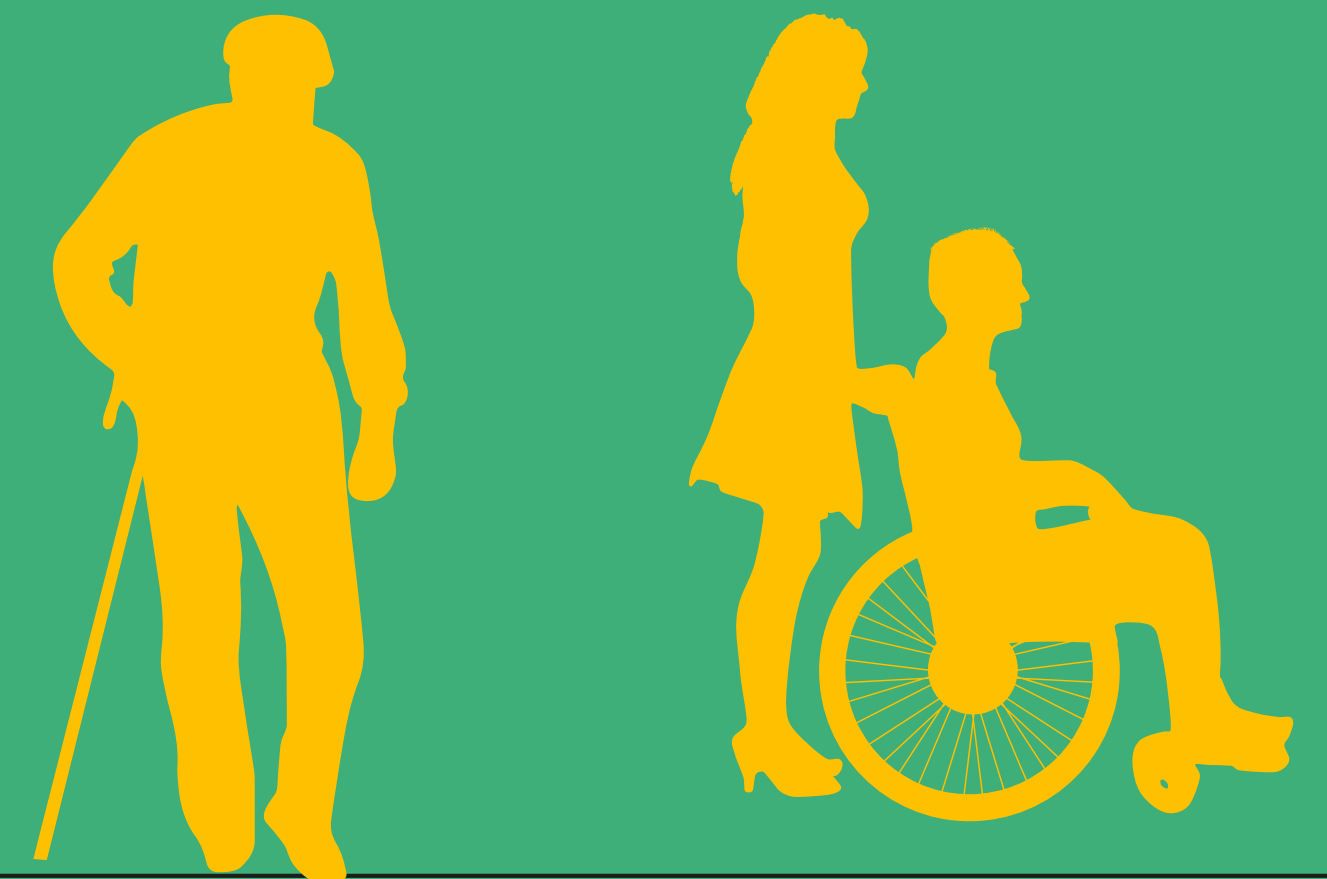
The population health survey, in addition to knowing the prevalence of morbidity due to chronic diseases, in 1989 and 1997, also aimed to estimate the prevalence of physical, mental, visual and hearing and speech disabilities, in order to develop long-term socio –sanitary programmes.

The definition of the three groups of disabled people was given:

a -deficient (impairment)

b -disability

c -disadvantage (handicap)



The classification of the World Health Organization, on the three disability groups is the following:

Deficiencies	Incapacity	Disability
• intellectual disabilities • other psychological deficiencies • speech impairment • hearing impaired • speech impairment • visceral deficiency • deficiencies of the osteo-articular system • deformities • generalized sensory deficiencies and others	• inability to behave • inability to communicate • inability to self-care • loco-motor disability • inability to attitude of the body • inability to dexterity • situational disability • special incompetence • other activity restrictions	• orientation disability • disability of physical independence • mobility disability • occupational disability • social integration disability • economic handicap • other disabilities



PREVALENCE OF DISABILITIES

The problem was studied, similar to that of morbidity in the household in order to see the share in these basic units of society, the frequency of those disadvantaged by the presence of disabilities.

The commissions of health survey had the task of detecting and registering the disabilities included in the nomenclature (in fact the internist and pediatrician).

- For those with physical disabilities, if necessary, the person was examined by an orthopedist and neurologist.
- For the nervous system disabilities, the person in question had to be examined by a neurologist and possibly by a psychiatrist, if there were also mental disorders.
- The visually impaired were determined only by the ophthalmologist, and the hearing impaired by the doctor O.R.L. and if necessary a neurologist and psychiatrist.



PREVALENCE OF DISABILITIES

The four classes of disability were highlighted:

- physical,
- psychic,
- sight and hearing,
- speaking.

Differentiation was made by age groups, gender, environment, households, areas, level of education, occupations, as well as people with disabilities (with one or more categories of disability)

The four classes of disabilities did not include those due to disabling diseases or serious sequelae, such as chronic diseases of the circulatory, respiratory, digestive, renal, etc., using a much more synthetic classification than that of the WHO.

The data processing was done for each of the 61 types of disabilities according to the nomenclature regarding the classification of disabilities, but taking into account the relatively small number of detected cases, they were grouped on the four classes of disability.



SOMATOMETRY

The somatometric survey was performed simultaneously with the health of the population (1989 and 1997) with an identical methodology, so at an interval of 8 years.

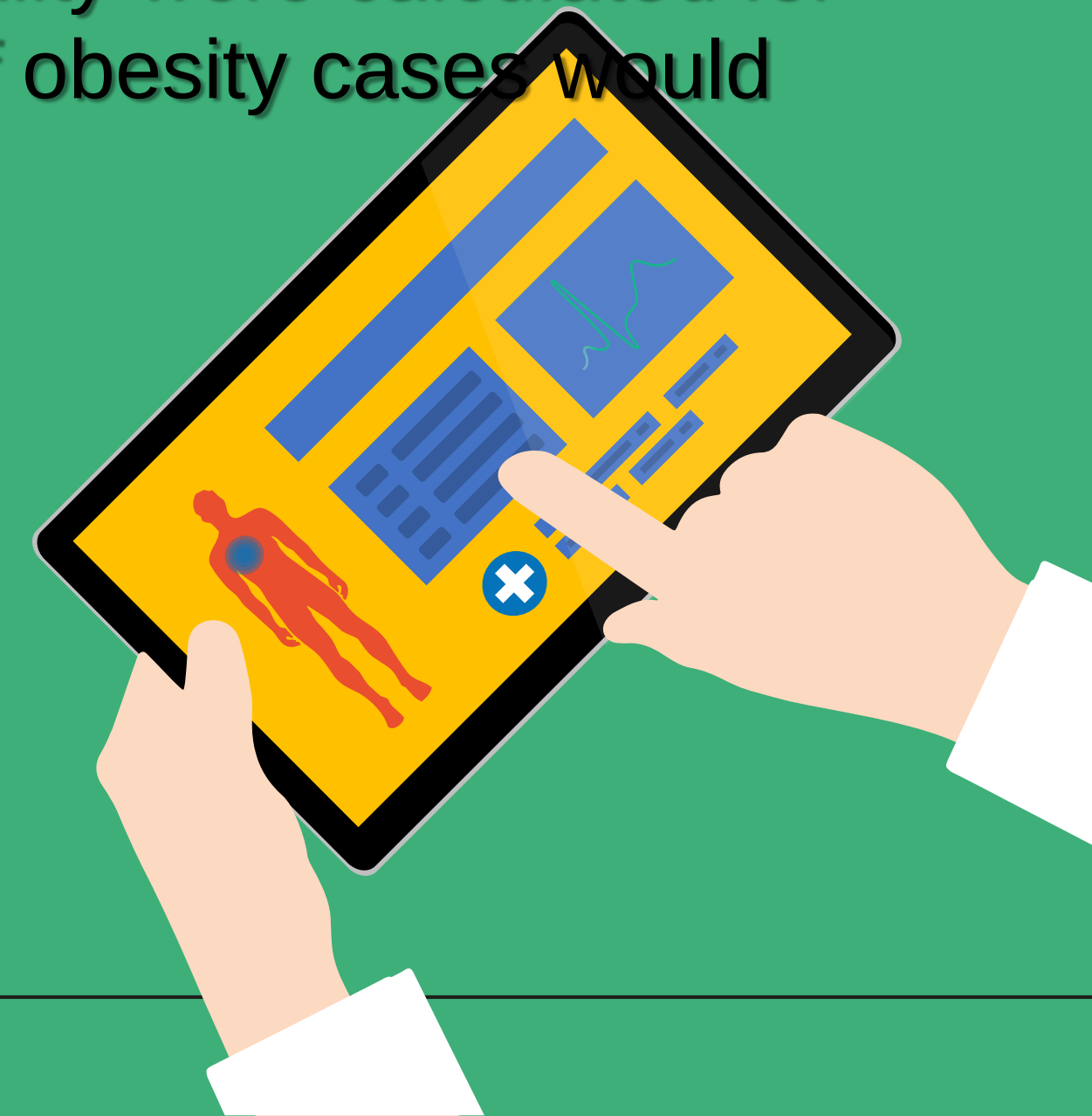
The data obtained from the measurements were grouped into five-year age groups, starting with 20 years, up to 85 years.

- Somatometric data under the age of 20 were not developed considering the fact that INSP periodically performs much more complex measurements in children and adolescents.
- Over 85 years, due to too small a sample, these data were also not processed.

In the two investigations they were eliminated obesity cases, because the limits of normality were calculated for the specifics of our country (by gender, environment, age) and maintaining the sample of obesity cases would have distorted the "range" of normality

The most frequent somatometric indicators studied are:

- **weight,**
- **height**
- **thoracic perimeter,**
- **body mass index**



WEIGHT

Average weight values include weight values in kilograms, by age groups (5-year intervals, between 20-85 years), by gender and by environments.

Sample of 8236 people (4219 from urban and 4017 from rural).

The mean values and dispersions were presented, as well as those of the median and the 10/90 and 5/95 percentiles, all these dispersions compared to the mean values being considered as normal.

So in the interpretation of individual or collective cases, by sex and age groups, these tables of mean or median values and 10/90 percentiles were taken into account.

The average values were studied on:

- areas,
- environments,
- gender,
- age groups.

Compared to the average weight values resulting from the 1989 Health Survey, those from 1997 are generally lower, in both sexes and most age groups in urban areas, and in rural areas, especially in males.



HEIGHT

Mean and median height values include height values in centimeters, by age groups, (5-year intervals, 20 to 85 years), gender, environments.

Sample: 8939 people

The mean values and dispersions were presented, as well as those of the median and the 10/90 and 5/95 percentiles, all these dispersions compared to the mean values being considered as normal

So in the interpretation of individual or collective cases, by sex and age groups, these tables of mean or median values and 10/90 percentiles were taken into account.

The average values were studied on:

- areas,
- environments,
- gender
- age groups.

Compared to the 1989 Survey, the average height in males is lower in 1997, especially in urban areas, but with the exception of some age groups, and in females the values also except for some age groups, - are older, especially in rural areas.



THORACIC PERIMETER

The average and median values of the thoracic perimeter include the values of the thoracic perimeter in centimeters, by age groups (at intervals of 5 years, between 20-85 years), gender, environments

Sample: 8521 persons examined

The mean values and dispersions were presented, as well as those of the median and the 10/90 and 5/95 percentiles, all these dispersions compared to the mean values being considered as normal.

So in the interpretation of individual or collective cases, by sex and age groups, these tables of mean or median values and 10/90 percentiles were taken into account.

The average values were studied on:

- areas,
- environments,
- gender
- age groups.

Compared to the 1989 survey, there are large variations in some age groups, indices. since 1997 being sometimes bigger, sometimes smaller.



BODY MASS INDEX (I.M C.)

Indicator that synthetically **takes into account weight, height and chest circumference**. At the 1989 Survey, such an indicator was developed, of course separately by gender and environment, given the large differences in these characteristics and especially when taking into account age groups.

Individual or group data are compared with these indices, the differences in plus or minus weight being considered disharmonious with respect to the ideal weight of the respective group, taking into account the environment and gender.

WHO - Regional Office for Europe, recommends an I.M.C. by **dividing the weight on the body surface** (in m^2).

- <18 -severe underweight
- 18 - <20 –subponderali
- 20- <25 –normal
- 26- <27 - moderately overweight
- 27- <30 large overweight
- ≥ 30 severe or obese overweight

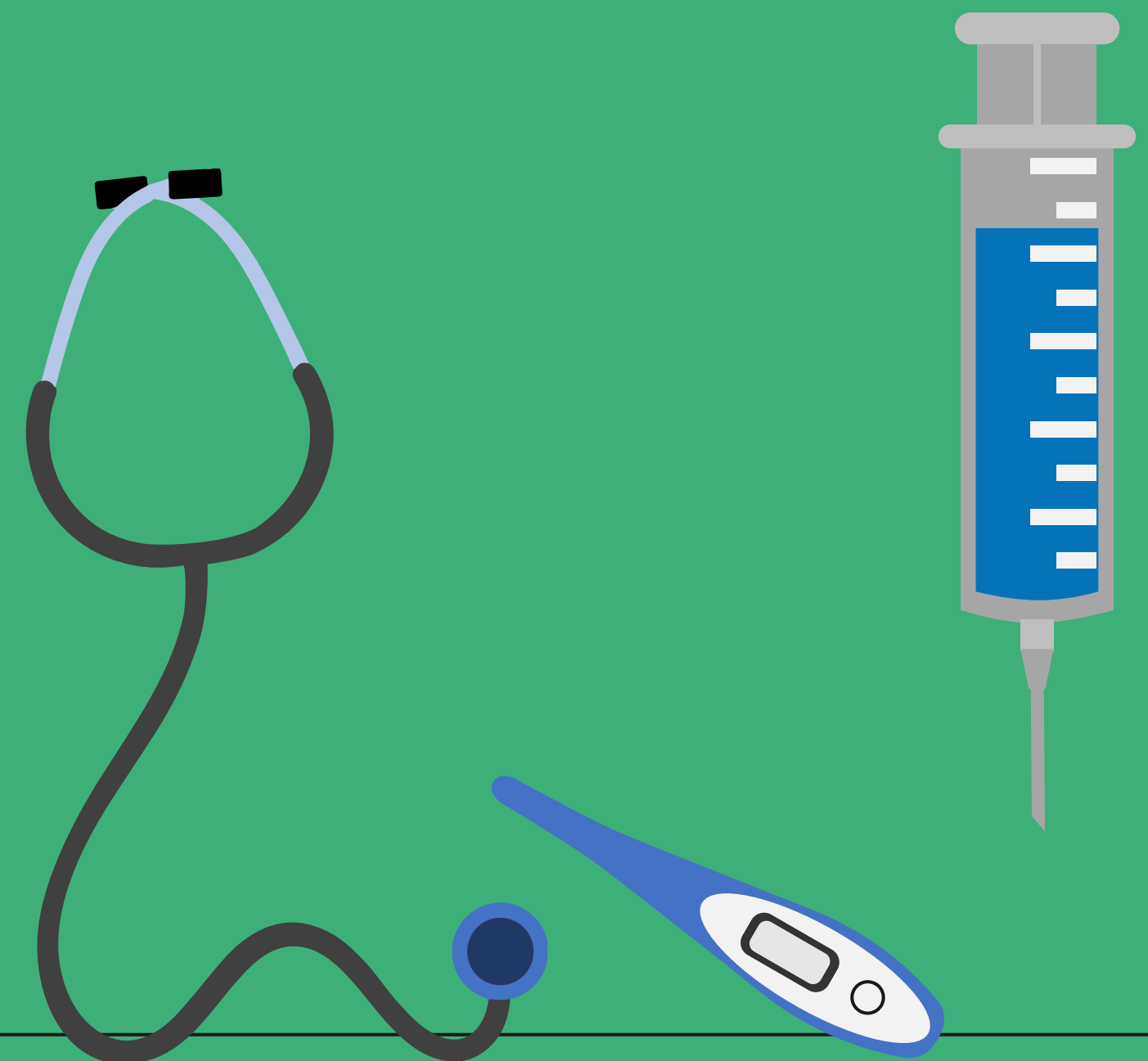


AVERAGE VALUES AND LIMITATIONS OF NORMALITY OF SOME BIOLOGICAL CONSTANTS

The study of the average values and of the limits of some biological constants, is based on the medical laboratory investigations, carried out on the occasion of the survey of the health condition of the population from 1997 on a sample of 10,000 people.

This study is perfectly compatible with the one carried out following the 1989 investigation, with the same investigations:

- blood pressure
- glycemia
- cholesterolemia
- triglycerides
- gluteo-pyruvate transaminases
- zinc sulphate
- hemoglobin
- hematocrit
- leukocytes
- platelets



Criteria for establishing normal in this study is "statistically"

In this case "statistically normal" can be considered as having a value of "diagnostic threshold".

In determining the mean values and normality limits were removed from the sample individuals suffering from certain diseases, such as:

- for blood sugar = diabetes mellitus
- for cholesterolemia, zinc sulphate, triglycerides, t.g.p., = diabetes, obesity, hypertension, ischemic myocardopathy, hepatitis and liver cirrhosis.
- for hemoglobin, erythrocytes, leukocytes, platelets = anemia
- for hypertension = hypertensive patients.

In this way the average values, but especially the limits of normality, the respective constants, can be considered as a standard.

In the case of the limits of normality, however, the values of the "median" with its percentiles 10% and 90% were taken into account, as a standard of the "normality range".





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Thank you!

