

SYSTEMATIZATION OF THE DATABASE OF PATIENTS IN THE STATE.

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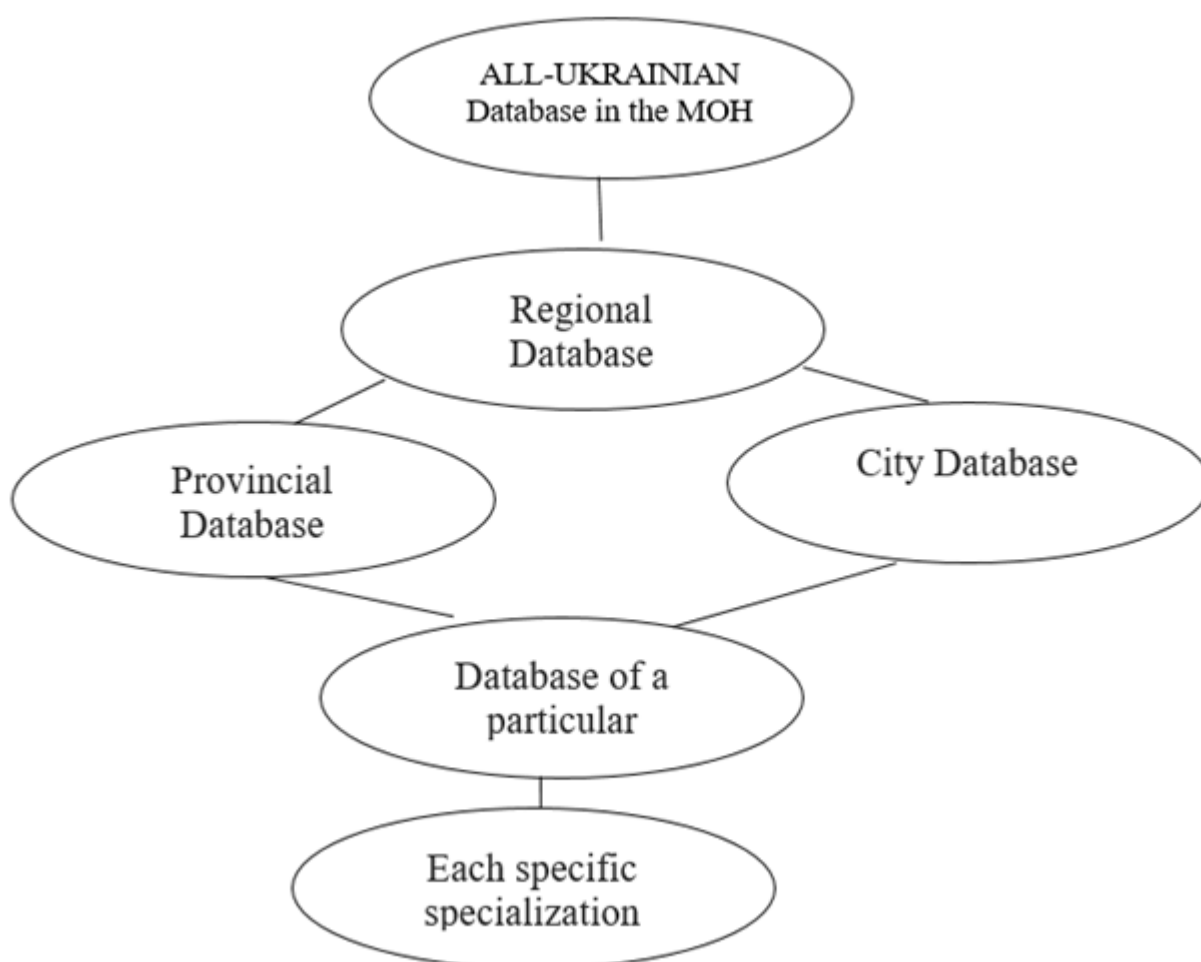
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Introduction. At present, in our state, patients are registered at the local level, and patients very often may not receive their medicine because of a shortage of hospitals. Systematization of patient database in the state.

The relevance and practical importance. We want to present you with a concept that can eliminate shortages and make the process of issuing medicines for them absolutely transparent, fair and honest (meaning people who require medicine from the state). Thus, we will be able to eliminate the back sale of medicines by physicians who are not taxed, to conduct general computerization in the Ministry of Health and enter a new technological level.

Aim. Creation of a systematized database in the Health Ministry.

Materials and methods. In the course of our research, we found the optimal concept, which is able to satisfy all parameters. We present you the systematization of data, as well as a visual example.



Each patient will be obliged to be included in the database if he receives state medicines. So the MOH can easily reduce external waste, and the SBU with ease will be able to disclose the loss and plunder of state property.

Also an approximate view of the database:

Ф.И.О. пациента	Диагноз	Ф.И.О. врача	Заведение МОЗ	Медикаменты	Дата выдачи:
Иванов И.И.	Диабет	Эрнесто Иоанн Васильевич	3-я гор. Больница	Не выдано	-
Васильев И.И.	Рак мозга	Эрнесто Иоанн Васильевич	3-я гор. Больница	Выдано	21.04.1999
Кушнарёв А.В.	Диабет	Эрнесто Иоанн Васильевич	3-я гор. Больница	Не выдано	-
Кугор И.И.	Диабет	Эрнесто Иоанн Васильевич	3-я гор. Больница	Выдано	22.04.1999
Кувыкор А.С.	Диабет	Эрнесто Иоанн Васильевич	3-я гор. Больница	Выдано	17.04.1999

Conclusions. Having developed this concept of systematization of data in the Health Ministry, we will be able to eliminate the confusion in the issue of medications and make more precise calculations of the budget for dispensing medicines, and it will be easier to calculate the state budget more accurately. order to pharmaceutical companies.

MOTIVATION AS A FACTOR OF A SUCCESSFUL FUTURE STUDENT. MATHEMATICAL MODEL OF PROGNOSIS BASED ON FUZZY LOGIC

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Introduction. Why do some people reach at success with those spheres of activity, in that other people with the same capabilities and possibilities bear a crash? This question remains relevant during many decades and is the object of the special researches of psychologists, sociologists and educators. An answer is known. The person wins, who possesses stronger motivation as compared to other. But to date there is not a single theory explaining this phenomenon.

Aim. An aim of work is investigation of quantitative relation between motivation, attestation and prognosis a successful future student on the base of mathematical modeling.

Mathematical model of prognosis. For the decision of task the model of prognosis is worked out and realized on the basis of fuzzy logic. Bases of fuzzy logic were founded by the American scientist L. Zade at the end of 60th of the last century. Presently fuzzy logic, as model of human cogitative processes, is built-in in the intelligence systems and in the automated facilities of support of making decision. In a general view fuzzy logic operates linguistic variables by means of rules clear to the man and near on a structure to the ordinary spoken language, and gives wide possibilities for description and treatment of biomedical information, when expert knowledge it is possible to set forth about an object or process, mainly, in a verbal form. To solve such problems expensive specially created software is used. Commercial software (Fuzzy Logic Toolbox, FuzzyTECH, CubiCalc) requires setting and special user training. The uniqueness of our model consists in that it is created in the analogue of spreadsheets of Excel - freeware OpenOffice.org.Calc, well-known to the students.

A model includes three linguistic variables with therms in brackets:

- ATTESTATION (Satisfactorily, Good, Perfectly) is determined as a average student's rating in a range 60 - 100 points and set by the triangular functions of belonging;

- MOTIVATION (Weak, Strong) is understood as a system of incentives, that determines behavior of man, in particular, collected, sequence and good organization of actions, activity; purposefulness and stability of select aims. This variable is estimated in points from 0 to 100 and set by the sigmoid functions of belonging;

- PROGNOSIS (Negative, Neutral, Positive) is estimated in points from 0 to 100 and set by the trapezoidal functions of belonging.

A cognitive basis of rules consists of six expressions, for example:

If ATTESTATION-Good and MOTIVATION-Strong, then PROGNOSIS-Positive.

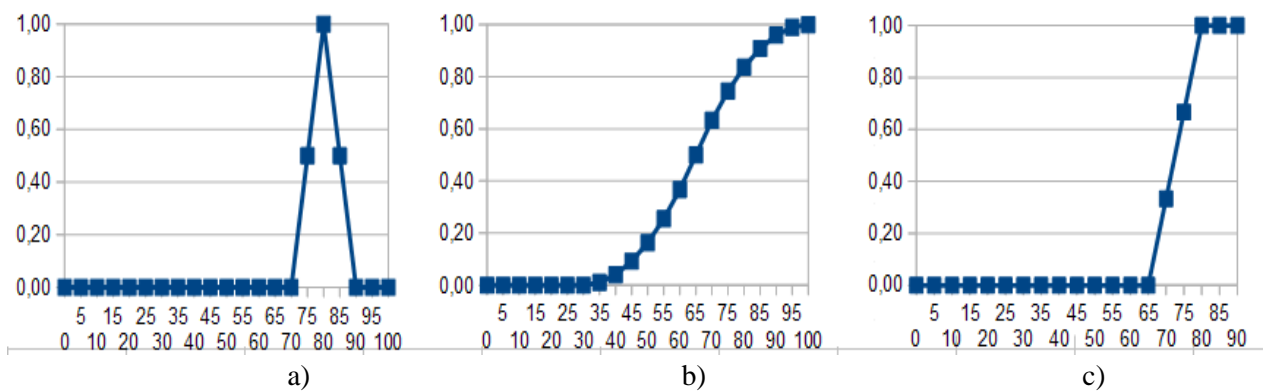


Fig.1.

a) ATTESTATION-Good; b) MOTIVATION-Strong; c) PROGNOSIS-Positive.

Results and discussion. Studies of dependence of the prognosis on motivation for a fixed value of average rating carried out. At average rating 80 and values of motivation 35, 50 and 75 points are got values of prognosis accordingly: 50.53, 65.0 and 86.45 points. The formula for finding the exact value of prognosis by the method of the center of weight has the form:

$$C = \frac{\int_0^{100} u \times \mu_A(u) du}{\int_0^{100} \mu_A(u) du},$$

where u varies from 0 to 100, and μ_A is the value of the functions of belonging on the interval [0,1].

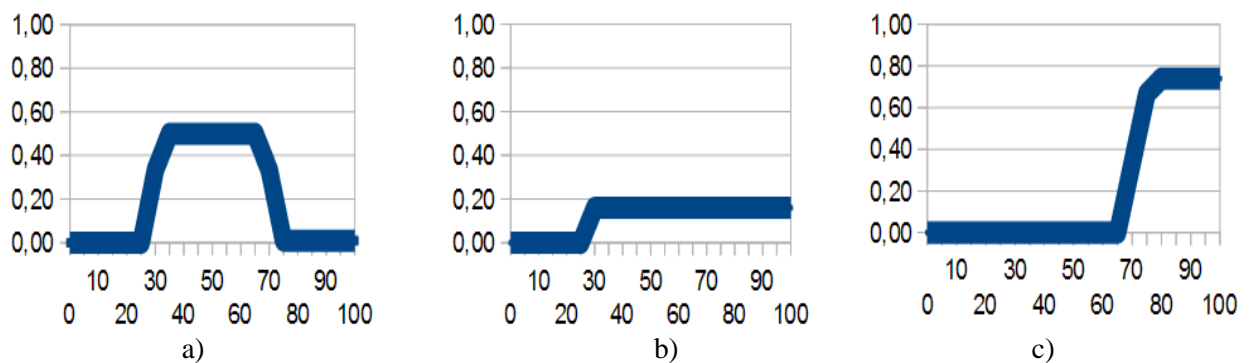


Fig.2. Prognosis values for average rating=80: a) motiv.=35, prog.=50.53; b) motiv.=50, prog.=65.0; c) motiv.=75, prog.=86.45

Conclusions. The got quantitative results allow estimate the role of motivation in the process of achieving the goal. In this connection there is of interest research of motivation of students by conducting interviews of touching domestic traditions, personal desire to attain success, of prestige and highly sought of profession.

MODELING OF THE ACTION OF LASER RADIATION ON BIOLOGICAL TISSUES. APPLICATION IN MEDICINE AND COSMETOLOGY

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Introduction. The unique properties of the laser beam have opened wide possibilities of its application in various fields: surgery, cosmetology, therapy, urology, ophthalmology, stomatology and diagnostics. A laser is a device for generating or amplifying monochromatic light, creating a narrow beam of light that can propagate over long distances without scattering and create an exceptionally high power density of radiation when focusing. The physical basis of the laser is the quantum mechanical phenomenon