

## Healthcare: Necessity of Changing of Paradigm

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### Abstract

The lacks of modern paradigm of healthcare (heavy tolls, insufficient efficiency of and other) are examined. It is suggested to change a paradigm. In basis of new paradigm are laws of thermodynamics. Living organism is open thermodynamics system stability of that depends on her energypotential. Thus, essence of new paradigm not fight against pathology, and counteraction of entropy. It removes the lacks of modern paradigm of health protection

**Key words:** *Paradigm of healthcare; Entropy; Health level; Maximal consumption of oxygen*

### Introduction

A paradigm of healthcare is totality of the knowledge and methodological going accepted by a professional association near the decision of problems of health. For the last 2,5 thousand years the paradigm of healthcare changed repeatedly — from the «gumoral theory» of Hippocrates to evidential medicine. These changes were caused by different reasons — from changing of prevailing pathology to the newest achievements of science. Remains unchanging only one: a main bar of any paradigm of healthcare is aimed at a fight against illness.

To the present tense the dominating paradigm of healthcare is allopathic medicine, using conception in obedience to that the symptoms of illness must be removed, a patient will get better and then. For the achievement of this aim pharmaceutical preparations and surgical methods of treatment are used. The standards (protocols) of inspection and treatment are thus worked out, legitimacy of the use of that is set by evidential medicine. The prophylaxis of diseases comes true by realization of complex of hygienical and epidemic measures.

We suppose that it is time changing of paradigm of healthcare. Are there, at least, three good reasons for this purpose. The first consists in that an evolutionary catastrophe approaches on humanity: a problem stands before us, presence and meaningfulness of that while is not realized in a sufficient measure by neither public nor science. The question is about biological degradation of type of Homo sapiens (5). She shows up : by the speed-up rate of aging, decline of stability of representatives of population to influence of different sort of negative factors (hypoxias, loss of blood, intoxications of and other), epidemic of chronic uninfected diseases, weakening of reproductive function, birth of weak posterity, decline of psychological and physical internalss and other (2). All of it is investigation of reduction of stability of the non-equilibrium thermodynamics system (living) by reason of reduction of potential of her energy. And changing a situation, leaning only against existing methodology and technologies of medicine, is impossible. The criteria of public health do not take into account majority from the presented indexes of quality of population, and the process of degradation goes by attention of specialists.

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The second problem consists in financing of healthcare. In most countries acknowledge that the system of healthcare is insatiable in the necessities, and the state is unable to increase budgetary assignments on the aim of healthcare. A situation became so serious, that her the experts of economic forum began to discuss in Davos. From their data already in the nearest decades global expenses on the sector of healthcare will grow three times: from 921 trillions of dollars in 2014 to 2 424 trillions in 2040 at the increase of population from 7 to 9,5 milliards of persons. About the same talked the Secretary General of WHO miss M. Chen on anniversary Assembly of WHO (2012): the «Chronic uninfected diseases can reduce to all conquests of modernisation and development the zero. If we will not change strategy of fight against these diseases, then the world system of health protection is waited by a financial crisis».

If to imagine that possibility to spend on one habitant Earth so much appeared at humanity, how many spends the USA on a 1 citizen of the country (there are about 9000 dollars in a year), then total expenses will make about 80% of all internal gross product of planet (IGP). Clear, that a permanent increase of expenses on a healthcare is a dead-locked way that is unable to provide not a single state. At the same time it is possible to assert that society that is unable to inlay considerable facilities in development of health protection and health of citizens care can not have a healthy population.

Efficiency of healthcare (correlation of results and expenses) as far as the increase of the facilities distinguished on his development, continues to go down. If at the beginning the XX century the increase of charges on a healthcare on 10% was accompanied by the height of indexes of public health on 12%, then later this correlation diminished constantly, and in 80th the increase of expenses on a healthcare on the same 10% led in the developed countries to the improvement of public health only on 1,8% (4). Moreover, increase of amount of the moneys inlaid in a health protection, over 12% IGP in general gives no concrete results on the indexes of health at the level of population.

Chronic uninfected diseases (CUD: cardiovascular, malignant, endocrine, breathing systems) are a leading problem of modern health protection. Exactly they are «illnesses of civilization». Their height and rejuvenation are objective reality. Exactly this group of diseases is principal reason of death in the developed countries (87%), and also invalidization and limitations in social realization of personality. A fight against them while does not suggest optimism. And it the third reason of necessity of changing of paradigm of healthcare

is her insufficient efficiency. Even the correctly appointed preparations do not render the expected therapeutic effect often. So, from data of researches, most medicinal facilities appear effective only for 25-60% patients. For example, according to data of WHO, modern preparations do not provide a curative effect at 75% of patients by a hyperpiesis( 11).

Is there an alternative to the traditional paradigm of healthcare, basis of that is made by treatment of patients? Yes, such alternative exists, and she is constrained with the laws of thermodynamics. Got by us data allow to assert that is present the real possibility to «manage» a health, but not to engage in his «repair».

Among the numerous children of God of medicine of Assklepy, except daughters of Gigei, goddess of Health, and Panacea, Healing goddess, probably, was another. Called her Valeology (from «valeo» - to be healthy). Exactly she now applies on forming of new paradigm of healthcare.

What are reasons of her appearance in? Firstly, a man began to extend the sphere of the activity : he wanted to capture space, by ocean depths and many unusual, what was not in olden times. And salubrity that Gigei was able to save was required for this purpose, but not able to strengthen. Why? And because not able to measure him. That is wrote about it prominent Doll: there «Were many attempts to create the scale of positive health, but until now measuring of health remains the same illusion, as measuring of happiness, beauty and love» (9).

Secondly, Panacea left off effectively to get along at leading pathology - so-called «illnesses civilizations» that was brought down on humanity in the second half of XX-ro of century. And Valeology that is able to measure and manage a health came.

#### **Essence of somatic health and possibility of his «measuring».**

A living organism is the open thermodynamics system that exists due to sunny energy. Without energy there is not life. Surprisingly, as until now medicine did not take advantage of this absolute conformity to law for the decision of problems of healthcare! Sunny energy passes the row of the stages of transformation and saved in mitochondries as macroergs. Exactly macroergs are basis of mechanisms of selforganization of the living system and provide her viability (homoestasis, adaptation, reactivity, regeneration, indemnification and other). In fact to it processes of selforganization of the living system are the mechanisms of health, that support the

low level of entropy in the system. In existent strategy of healthcare affecting them practically is not envisaged, because a primary objective of this strategy is influence on the processes of pathogeny, i.e. consequences of increase of entropy. At the same time, as well as in any other mechanism, potential of energy determines the degree of his perfection : than more energy (taking into account mass), the the system works more perfect. Thus, essence of health is energypotential of the biosystem.

Defining energypotential of the living system is possible, if to take into account that her basic part is made by the aerobic mechanisms of energypotential. Determining maximal possibilities of consumption of oxygen (MPC, ml/of kg/of mines), we get information about power potential of the biosystem. From the physiological point of view this index integrally characterizes the state respiratory, sanguiferous and metabolic functions, with biological is a degree of stability (to viability) of the non-equilibrium system (living organism). Direct determination of MPC with a loading test difficult enough and dangerous for a modern population procedure. On this account for greater availability and safety we created the simple and cheap system express estimations of MPC, in other words are «measuring» of health [1].

#### Management problem by a health and his phenomena

Any management is a process consisting of a few stages : description of the guided object, forming of complex of manage actions, their realization, control of efficiency (feed-back). Management essence abuts a health against a management by energypotential, i.e. entering of energy organism with food, by her expense in the process of vital functions and renewal in mitochondries of cage due to physical activity. It means that two main factors are, subject to control and management is a feed and specially organized physical activity.

Small labour intensiveness and cheapness of the use of the diagnostic system worked out by us, availability of her for qualification of middle medical staff allowed to undertake studies of many thousands practically of healthy and sick people 80 from 6 to that gave an opportunity to educe and describe the new phenomena of individual health [1]:

- what higher health level, the less probability of development of endogenous risk and demonstrated forms of ischemic heart (IHD) and other diseases trouble factors;

- there is a «safe» health level, neither endogenous risk factors nor demonstrated forms of diseases are practically determined higher than that; him quantitative description (12 MET for men and 10 MET for women) is given to;
- on leaving of individual from the «safe zone» of health the phenomenon of «selfdevelopment» of pathological process is marked;
- there is reverse development of endogenous risk of IHD factors at the increase of possibilities of aerobic energy;
- having quantitative indexes, it is possible to manage (to form, save, restore) a health;
- return in the «safe zone» of health practically healthy people is the most effective way of primary prophylaxis of chronic uninfected diseases («preventive rehabilitation») :
- for the last 25 stake of the Ukrainian population being in the «safe zone» of health of diminished from 8 to 1%.

Thus, a healthcare can work out the most actual problems, not using «management technology» illness.

#### Discussion

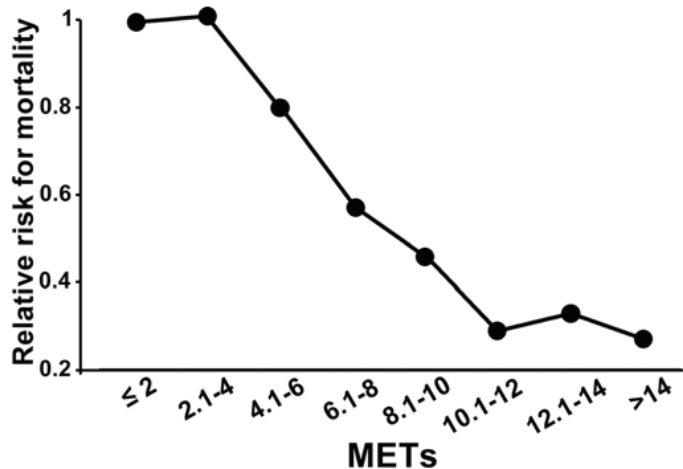
Position about sources and character of energy, providing functioning living systems, about applicability to them the second beginning of thermodynamics. Is outspoken by E. Bauer as early as 1935 He is set forth principle of “Steady non-equilibrium”; exactly continuous non-equilibrium is a cardinal difference living from lifeless. Coming from this parcel, E. Bauer set forth the basic law of biology : “All and only the living systems never are in an equilibrium and carry out due to the free energy constantly work against the equilibrium required by the laws of physics and chemistry”. [3]. About applicability of the second beginning of thermodynamics to the living systems a prominent physicist Schrodinger Erwin talked in the lectures read in 1943 in the Dublin University [10].

Researches of many authors confirm our using of aerobic possibilities given about possibility as an index of stability of organism to pathogenic influences. We will be stopped only for the most fundamental researches.

Group of the Norwegian researchers [6], inspecting more than 4600 practically healthy men and women, marked that for women of mines below 35 mls in 5 times, and for men below 44 mls/of kg/of minutes in 8 times more often meet risk of development of cardiovascular diseases factors. Thus every decline of specific MPC on

5 mls is accompanied by the increase of expressed and prevalence of risk of cardiovascular morbidity factors on 56%.

Yet more convincing are results of researches of the American scientists-employees of Center of veterans of army of the USA (Washington), showing dependence of risk of death rate on maximal aerobic possibilities of individual (figure). On leaving of individual outside MPC 10-12 MET sharply increases death rate [7].



**Figure 1:** Risk of death of veterans of war of the USA depending on MPC (7)

1 MET = 3,5 mls/mines/kg of mass of body.

Last years all anymore appears researches convincingly proving the informative value of results of testing of physical readiness (speed of walking, amount of quetching in support lying, force of and other raceme) in prognostication of probability of development of diseases and premature death. And researchers cannot decide a problem, as force of handshake (force of brush) can influence on the state of myocardial blood stream (8). All is explained very simply: all these tests are the reflection of energypotential of the biosystem.

## Conclusions

The modern paradigm of medicine does not take into account fundamental position of biology that a human organism is the open thermodynamics system that submits to all laws of thermodynamics. Thus, energypotential of the biosystem is essence of physical health and his foundation, and people fall ill and prematurely die from the loss of health (energypotential). Thus, CUD is result of exit of energypotential of the biosystem for the limits conditioned by an evolution, and his renewal (decline of entropy) is able to recover the health of man and warn development of fallouts of increase of entropy in the system.

The problem of forming of new paradigm of healthcare becomes actual taking into account the outspoken positions. Essence of her consists in a primary transition from an expensive, but effective not enough fight against pathology to monitoring, reproduction, maintenance and strengthening of health of population. Id est all efforts of healthcare must be directed, foremost, on counteraction of entropy. Thus making (support of energypotential within the limits of safe zone of health) healthy must come true constantly, and treatment if necessary. For making healthy of population it is necessary in addition to «Industry of illness» (curative establishments) forming of «Industry of health». «Industry of health» supposes development of whole series of measures assisting optimization of motive activity of population (satiation of informative space, preparation of medical personnel in area of «management» a health, creation of fitness- infrastructure, corresponding materials, etc.). As a criterion of necessity of involving of individual in the sphere of «Industry of health», and also efficiency of the indicated measures is the health level determined on our methodology.

Thus, a healthcare can work out the most actual problems, not using «management technology» illness.

Forming of new paradigm of healthcare requires a political decision, because not a single health minister, having Orthodox medical education and thinking, and also corresponding psychology, is unable to perceive a new paradigm, in basis of that curative measures are not her main content.

At sufficient development of «industry of health» the role of «industry of illness» will gradually diminish in the system of healthcare, but saved, occupying the place in area of providing of medicare to the persons of elderly and senile age, at traumas, infections, genetic diseases, etc. it appears Us, that the new format of the system of healthcare will be more economical, humane and effective. And passing to this paradigm is inevitable. Because her alternative is biological degradation of humanity (2).

It is necessary to confess that the new paradigm of healthcare is not deprived defects. The question is about the role of human factor. Parting with conception of paternalizmus, at that a doctor manages the process of achievement of health, an individual, being the owner of the health, makes decision about sufficientness of the efforts to be healthy. And it not always simply. Therefore inlightening and forming of motivation is major part of decision of problem.

As far as are the prospects of realization of new paradigm of health-care real? Humanity studies on the errors. Displacing on the road of allopathic medicine, humanity lost management possibility the health and entered on the road of biological degradation. But beginning of changes in consciousness of humanity is already fixed: fitness-industry becomes the way of life of modern man confidently. And it is a way to the rescue.

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