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29. Anum E.A. Health disparities in risk for cervical insufficiency / E.A. Anum, H.L. Brown, J.F. Strauss III // Hum. Reprod. – 2010. – Vol.25,№11. – P.2894-2900.

30. Ayers J. Sonographic evaluation of cervical length in pregnancy: diagnosis and management of preterm cervical effacement in patient at risk for preterm delivery / J. Ayers, R. DeGrood, A. Compton et al. // J. Obstet. Gynecol. – 1988. – Vol.71, № 6, Pt.1 – P.939-944.

31. Campioni P. Diagnostic imaging in cervical incompetence / P. Campioni, S. Goletti, M. Vincensoni // Rays. – 1998. – Vol.23, № 4. – P.637–648.

32. Cockwell H.A. Cervical incompetence and the role of emergency cerclage / H.A. Cockwell, G.N. Smith // J. Obstet. Gynecol. Can. – 2005. – Vol.27, № 2. – P.123-129.

33. De Vos M. Preterm premature rupture of membranes in a patient with the hypermobility type of the Ehlers-Danlos syndrome. A case report / M. De Vos, L. Nuytinck, C. Verellen et al. // Fetal Diagn. Ther. – 1999. – Vol.14, №4. – P.244-247.

34. Golan A. Uterine didelphys with pregnancy and cervical incompetence / A. Golan, G. Maiti, P. Tugnait et al. // MJAFI. – 2006. – Vol.62, № 2. – P.200-201.

35. John A.Rock, Lesley L. Breech. Surgery for anomalies of mullerian ducts, in John A Rock, Hawards W. Jones 111. Editors. TeLinde's Operative Gynecology, 9th Ed. Lippincott Williams&Wilkins – 2003. – P.732-736.

36. Leduc L. Successful treatment with the Smith-Hodge pessary of cervical incompetence due to defective connective tissue in Ehlers-Danlos syndrome // L. Leduc, N. Wasserstrum // Am. J. Perinatol. – 1992. – Vol.9, №1. – P.25-27.

37. Lind J. Pregnancy and the Ehlers-Danlos syndrome: a retrospective study in a Dutch population / J. Lind, H.C. Wallenburg // Acta Obstet. Gynecol. Scand. - 2002. – Vol.81, № 4. – P.293-300.

38. Ludmir J. Anatomy and physiology of the uterine cervix / J. Ludmir, H.M. Sehdev // Clin. Obstet. Gynecol. - 2000. – Vol.43, № 3. – P.433-439.

39. Memon S. Role of cervical cerclage in cervical incompetence / S. Memon, F. Shaikh, Pushpa // JLUMHS. – 2009. - Vol.8, №3. – P.234-237.

40. Naseem Saba. Outcomes of cervical cerclage in preventing pregnancy loss/ J. Obstet. Gynecol 2009

41. Oxlund BS. Cervical collagen and biomechanical strength in non-pregnant women with a history of cervical insufficiency / BS Oxlund, G. Ortoft, A. Bruel et al. // Reprod. Biol. Endocrin. – 2010. – Vol.8, №92. – P.1-10.

42. Rahman J. Obstetric and gynecologic complications in women with Marfan syndrome / J. Rahman, FZ Rahman, W. Rahman et al. // J. Reprod. Med. – 2003. – Vol.48, №9. – P. 723-728.

43. Romero R. The preterm labor syndrome / R. Romero, M. Mazor, H. Munoz et al. // Ann. NY. Acad. Sci. – 1994. – Vol.734. – P.414-429.

44. Schlembach D. Cervical ripening and insufficiency: from biochemical and molecular studies to in vivo clinical examination / D. Schlembach, L. MacKay, L. Shi et al. // Eur. J. Obstet. Gynecol. Reprod. Biol. – 2009. – Vol.144 (Suppl.1). – P.70-76.

45. Vidaeff A. From concept to practice: the recent history of preterm delivery prevention. Part I: cervical competence / A. Vidaeff, S. Ramin // Am. J. Perinatol. – 2006. – Vol.23, №1. – P.3-14.

46. Warren J.E. Collagen-α-1 and transforming growth factor-β polymorphisms in women with cervical insufficiency / J.E. Warren, R.M. Silver, J. Dalton, L.T. Nelson et al. // J. Obstet. Gynecol. – 2007. – Vol.110, №3. – P.619-624.

47. Warren J.E. Genetics of the cervix in relation to preterm birth / J.E. Warren, R.M. Silver // Semin. Perinatol. – 2009. – Vol.33, №5. – P.308-311.

REFORMATION OF THE HEALTH SYSTEM IN UKRAINE - BENEFITS AND WEAKNESSES

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Abstract

In this paper the main advantages and disadvantages of reforming the health care system of Ukraine are presented. One of the most important priorities of the state policy of Ukraine is to preserve and strengthen the health of the nation on the basis of the formation of a healthy lifestyle and increase the availability and quality of medical care.

Keywords: reforming, health care system, medical aid, market of medical services, medical services.

The main problem of the current system of health care experts call the low level of population provision of medical services. To solve it, it is planned to create a free market for medical services, in which both state and private players will be represented, and medical institutions will receive full autonomy.

In the past decade, our country experienced complex socio-economic, political and demographic changes. The difficulties that have arisen have had a

significant impact on the entire health care system, regional health authorities, and every health care institution (LPU). A critical evaluation of this system allows us to conclude that all reforms should be based on a scientifically grounded strategy of public sector management. According to statistics, in the last decade in Ukraine, over 1, 500 people account for more than 1.5 thousand diseases.

Despite the diversity of forms of medical care, today there is no country that would be fully satisfied with its own health care.

Currently, a post-Soviet medical system operates in Ukraine, which guarantees people free treatment on paper. In fact, the state is not in a position to fulfill these obligations, because it simply does not have enough money to pay for all the necessary medical services for the population.

As a result, citizens have to solve health problems themselves, often even those who are threatened with life. At the same time, doctors of state institutions work for scanty money and "disorderly" from above, if they are not able to get into a commercial institution. Patients, however, cannot choose their own doctor at their discretion, because they have one conditional free-of-charge precinct, to which they are assigned at their place of residence.

Starting from July 1, 2017, a pilot project was initiated in Ukraine to change the mechanism of financing the provision of medical care in certain research institutions of the National Academy of Medical Sciences of Ukraine (NAMSU).

The proposed medical reform is stipulated in several bills, but the basic principles are contained in the Law № 4456 on the organization of medical care in Ukraine and № 2409 on the basis of state policy on health care.

Much of the Concept of Health Care Reform Financing reform is a fairly adequate and competent description of the shortcomings of the current health care system. The reform involves a number of fundamental changes, which in the first place are the transfer of state care of medical institutions to the foreigner. The main content of this document can be narrowed down to plans for the implementation of 5 events.

1. "Minimal medical kit", which guarantees the patient state.

A leading role in the new health care system will be allocated to primary health care (PHC) or so-called family doctors. It is precisely for them that they will be referred to patients with their illnesses and the family doctor will have the exclusive right to refer them to narrow-profile specialists. This, according to the authors of the strategy, will contribute to a decrease in the level of self-treatment among the population. In this case, private medicine will be introduced in primary medicine.

It is also necessary to define the so-called "guaranteed set of medical care and medical services". It is proposed to include in this package - "the main types of specialized outpatient services in the direction of the primary care physician, as well as the main types of scheduled in-patient care by the direction of the primary care physician or specialist doctor." Therefore, according to logic, all that the primary doctor has written in the direction is to be paid by the state.

It is planned that the list of services will be determined by the Cabinet of Ministers each year, proceeding from the budget. Currently, Ukraine allocates UAH 55 billion to medicine, accounting for 11% of the country's budget, so the government will decide what services the state can pay for.

This means that the state will assume real obligations for basic services that the budget is able to pay and the patient will be able to get in the chosen medical facility. Everything that does not fit into the basic package, the patient must pay for himself. Priority will be given to prescribing primary care physicians and outpatient specialists on the basis of the health sector's priorities, taking into account the incidence rate.

As stated in the concept to the list will surely include: emergency care, childbirth and part of primary services in the clinic, but in general, all services of public institutions in any case will be cheaper. In addition, the budget will also finance orphan (rare) diseases and oncology.

Another circumstance should also be taken into account. The package, in accordance with the adopted laws, should provide for free treatment of privileged categories. Now this category includes ATO participants affected by combat operations, displaced persons, that is, the budget burden for this contingent will significantly increase.

Today, health facilities at the local, regional and central levels overlap with functions that ultimately lead to the provision of unskilled medical services. This problem should also be addressed by the development of PHC. The idea is very simple, for example, in a village where a small number of people live is not profitable to hold a large hospital with attendants. In these settlements, you can leave family doctors private practice. General practitioners will be able to refer the patient to the district center, where he will be assisted in the medical center.

It should be said that the development and justification of the size of the guaranteed package is indeed a very important task in the reform of the medical sector, and now it is worth not knocking on what was conceptually and even legally defined more than 20 years ago, and focus on measures that will ensure filling this package: the completion of the protocol and standardization, the necessary calculations, the study of all possible risks, an assessment of the impact of the full use of modern methods of financing (capitalization on the primary, valuation n DRG-based assistance in the hospital, etc.).

2. The patient chooses a doctor himself: the money "goes" for the patient.

This means that now every Ukrainian will be able to contract with a physician who likes him. Each patient can choose a doctor and sign a contract with him, and the doctor, in turn, will receive money for the number of citizens who signed the contract with him. At the end of the year, summing up the number of patients who have undergone the required examinations and did not apply for a doctor's in-patient care, bonuses will be charged.

A Ukrainian patient will now be able to choose where to go the funds provided by the budget for his treatment. If a local clinic, for example, does not have the necessary specialist, a person will go to where such a specialist is, and this doctor and this institution are legally receiving budget funds for the treatment of this person.

For this, the reform involves the creation of a National Procurement Agency, which will be the mediator between the state, service providers (ie healthcare facilities and doctors) and citizens, which is the next step.

3. Creation of a single National Medical Agency.

It is proposed to create a National Agency, which will become the sole customer of medical services (purchases) in the state. It is this agency that should become the main manager of budget allocations on the basis of concluded contracts on medical care of the population.

From the text of the concept it can be concluded that its authors see the National Agency as a public authority (such as an agency or service financed from the budget and subordinated to the MoH), or it is a state-owned enterprise that is in the management of the Ministry of Health.

If we consider the first option, then a large autonomy of medical institutions is planned, according to which the influence of government structures will be reduced to a minimum.

If we take another option - the creation of a state-owned enterprise, such as the Center of Excellence in education, then the cost of it will go from budget. This option also carries a tangle of other risks. Under the current legislation, an enterprise cannot be under such a dense anticorruption control as an authority. Its managers, not being civil servants, can individually take specific decisions on issues relating to the distribution of funds between institutions, the selection of procurement models, the conclusion of contracts, etc. And here in the hands of this instance will fall not even millions, but billions of grivnya ...

In the case of a state-owned enterprise it is unclear whether the creation of the National Agency's branches will be based on regional health departments. Such departments perform a number of functions, which according to the law can only be performed by the authorities.

At least with the organizational and legal status the question arises about the implementation of the mechanism of procurement of medical services. The concept very briefly states that the National Agency contracts (concludes contracts with health care institutions within each oblast) and continues to pay for services performed by these institutions. Unfortunately, at the level of the concept there is at least an indicative characteristic of all the mechanisms for the purchase of medical goods, medicines and services.

So, in order to conclude a contract with a doctor, the medical institution in which it operates must become autonomous, and this is the next event.

4. "Decentralization" of health facilities.

To date, the state holds medical facilities regardless of the number of patients. Also, the state is not interested in the end result of treatment of the patient (healthy, practically healthy or sick). Each hospital receives funds for bed-holding, respectively, reporting that they are all occupied at 100%, even if their employment is three times less, because it will mean three times less money.

The package of draft laws №. 2309a-d on amending some legislative acts of Ukraine on improving legislation on health care has been written down as follows: "State and municipal health care establishments established and existing in the form of budgetary institutions may be reorganized into state-owned enterprises and communal non-profit enterprises ". Medical institutions will be able to independently use their budget.

So, in the first place, it is proposed to refuse the financing of hospitals by the number of beds and go to the payment system for the result (to wit for each patient treated and services provided). In addition, experts suggest refusing to provide itemized funding, which will enable hospitals to independently redistribute financial flows based on their own needs. "How can the state know how many bulbs, beds or homographs of a hospital located in another area know about it, only the employees of the medical institution themselves know it? The hospital itself should spend its money. They want to buy lamps, they want equipment."

That is why it is planned to deprive local self-government bodies and local authorities of the functions of the budget manager and the manager of health care institutions. They only have to organize the quality control of the assistance. The new role of local authorities logically follows from the previous one - the new procurement system through the National Agency. According to the authors of the concept, this will increase the role of local communities. At the same time, the removal of local authorities from regulatory functions and those that ensure will lead to the emergence of a number of issues that the concept does not provide. In particular:

- a large number of health care facilities (hospitals, clinics, outpatient clinics, etc.) remain under the control of local authorities. What should the authorities do if some of these institutions do not receive government procurement and budget funding? It is impossible to close - prohibit the Constitution, hold it - there will be no funds to local budgets from the National Agency;

- local health care facilities - district hospitals, outpatient clinics, etc. - perform an important social function in the regions. The local population, mainly elderly, which is usually financially unsecured, periodically passes rehabilitation and treatment cycles in these institutions. The logic of the new concept suggests that only the acute illness will fall into the guaranteed package. Therefore, the functions performed by local hospitals will be largely paid. But the contingent of patients is clearly not ready for this. Therefore, one should expect social tensions that will be directed to the power structures in the regions;

- there are no mention at all of the local government's health functions such as tracing and fighting epidemics, vaccination campaigns, especially children, palliative care for the incurably ill. If local authorities are diverted from regulatory and funding issues, one has to take on the above issues;

- finally, one cannot ignore the new subject of local government - united territorial communities. It is they who are responsible for the "primary" (and not the district, as it is now), as well as for public health, palliative care. It is unlikely that they will only assume the functions of the quality assurance controller.

When creating a National Procurement Agency, which will determine which healthcare institution is cheaper to procure those or other services, then if this institution is autonomous, then the services will be at least 1.5 times cheaper and easier to procure. And those institutions that will not receive autonomy, they themselves will lose money, including budget, for their maintenance. There is a big chance that if they do not go voluntarily through autonomy, they will go bankrupt. People will stop walking there and accordingly they will not get budget funding.

5. Salaries are calculated according to the services rendered.

Reformers are proposing to introduce a new system of payment for services. The payers, namely the aforementioned National Agency, insurance companies with LCA, enterprises, institutions and organizations, citizens, etc., must pay for each specific service provided on the basis of diagnostic-related groups (DRG) charges.

Systems based on diagnostic-related groups (DSGs) are a kind of promising financing, where the price is fixed in advance, but usually not fixed quantity. The DSG system was introduced to control the cost of health care, increase the level of activity and standardize the provision of medical care. The idea is that, knowing the amount of work performed by a health facility, we can:

• evaluate its activities and compare it with the activities of colleagues;

• pay for final products, not incoming resources;

• increase the economic and overall efficiency of the system by redistributing resources to hospitals, which are more cost-effective and provide quality medical care.

The head of an autonomous medical institution will be able to contract a specialist, depending on his qualifications.

At that, the contract may be entered into for any amount that the institution deems appropriate. At the same time, the minimum wage is also retained.

In this case, the specialist himself will be able to determine what his work is worth, because he knows the cost of the services he provides. The state will no longer distribute doctors, regardless of their desire; they will be able to choose their place of work on a market basis, based on their qualifications, desired wages, etc.

The doctor will be able to "evaluate" himself: what is the price of one or another service he can provide, what salary he should receive, how many patients he can take during the working day, how much time will last a working day, etc. In that institution Health who can offer it, he will remain working. But when such a highly qualified doctor will work in an institution, then such a health care facility will be able to earn more money both for the institution and for the doctor himself. It will become prestigious, more patients will come to it, and for these patients the institution will receive more money from the National Procurement Agency created by this law. Accordingly, the institution will flourish, and the doctor will be able to receive decent salary.

These are just the main changes that are awaiting Ukrainians in the event of the introduction of medical reform in the form in which it is proposed now. All of them should form the basis for the introduction of compulsory medical insurance for Ukrainian citizens.

Finally, let's look at the proposed model from above. First and foremost, a guaranteed package will be formed, which will include both primary and tertiary care, that is, visiting family doctors and treating the most severe cases in a hospital environment as a direct threat to human life.

With regard to secondary medicine, which covers treatment in district and city hospitals, diseases that are usually planned, often chronic, in many cases do not require the use of complex non-standard techniques, the highest level of qualification, etc., then "broad" inclusion in the guaranteed package is problematic. One can understand that such assistance will be funded mainly by the "co-payment" method, where own pocket will become the dominant source.

Financing will be carried out by a special authority - the National Agency. She becomes the sole manager of budget allocations and, on a competitive basis, concludes contracts with those medical institutions that have better conditions, better qualifications, and better equipment. That is, each medical institution that has a cardiologic department can get contracts, for example, for 1000 sentimentally or 1000 shunt, if its technical base and human resources are able to do so.

It would seem, in general, a good model, which, for public money, will provide the best treatment. But the analysis shows a number of risks. Some observers say that in the country under this model an investment boom begins with the construction of modern private medical complexes, in which the best equipment will be delivered and the most trained specialists are involved. It is clear that the National Agency will give the money the best, namely these new private institutions, and not the state, and especially communal.

From here, there will be a major risk, because public utilities and to a large extent state institutions will remain without the necessary budget financing. As a consequence, public health services for diseases that are not included in the guaranteed package will also be minimal, as the bulk of this population is insolvent. In the regions, this will lead to a clear rejection of the reform, and maybe the manifestation of more active resistance.

Another risk - is there really a market for medical services? Any market requires a competitive environment among both sellers and buyers. The mark of salesmen can be considered market-competitive in the presence of a large number of medical institutions. But the buyer side is purely monopolistic - only the National Agency is present. As a result, in such cases, administrative influence, corruption, lobbying of somebody's interests. Moreover, if owners of private institutions will be known influential people. Sooner or later, there

will be unjustified pricing, lowering quality, choosing not the most worthy ones.

Thus, the new model carries a number of contradictions that can lead to disruption of the reform. Do not throw it away. One needs to carefully examine all possible flaws and propose measures to correct a number of model provisions.

References

1. Конституція України: Прийнята на п'ятій сесії Верховної Ради України 28 червні 1996 р. (зі змінами, що внесено Законом України "Про внесення змін до Конституції України" від 8 грудня 2004 р. № 2222-IV // CD NAU.

2. Закон України № 4456 "Про організацію медичного обслуговування населення в Україні" від 15 квітня 2016 р.

3. Проект Закону України № 2409а "Про засади державної політики охорони здоров'я" від 17 липня 2015 р.

4. Давидович І.Є. Медико-соціальні аспекти проблеми здоров'я населення України // Новости медицины и фармации. - 2007. - № 19 (227). - С. 29-30.

5. Карамишев Д.В. Концепція інноваційних перетворень: міжгалузевий підхід до реформування системи охорони здоров' я (державно-управлінські аспекти): Монографія. - Х.: Вид-во ХарРІ НАДУ "Магістр", 2004. - 304 с. Бібліогр.: 135 назв.

ВЛИЯНИЕ 6-БАП НА СОДЕРЖАНИЕ ГИББЕРЕЛЛИНА А3 В СОЦВЕТИЯХ TRADESCANTIA (CLON 02) ПРИ ОБЛУЧЕНИИ В МАЛЫХ ДОЗАХ

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6-BENSYL-AMINO-PURINE IMPACT ON TRADESCANTIA (CLON 02) INFLORESCENCE GIBBERELLIN A3 CONTENT UPON LOW-DOSE Γ-IRRADIATION

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Аннотация

Было изучено влияние пролонгированного γ-облучения на соцветия *Tradescantia* (clon 02), обработанные 6-бензиламинопурином (БАП-6). Содержание гиббереллловой кислоты в модельных растениях показывало рост как в абсолютных, так и относительных значениях. Мы предположили, что обработка растение БАП-6 препятствует адекватным ответам растений на ионизирующую радиацию. На основе результатов, представленных в данной работе, нами было сделано предположение, что гиббереллин А3 обеспечивает позитивную регуляцию механизмов активного восстановления радиоиндуцированных генетических повреждений.

Abstract

Prolonged γ-irradiation in *Tradescantia* (clon 02) inflorescences treated with 6-bensyl-amino-purine (BAP) was studied. Gibberellic acid content in the model plants was shown to increase both in absolute and relative values in the series of variants. We suggested that the treatment of the plants with 6-BAP hinders an adequate plant response to ionising irradiation. On the basis of the findings obtained in the present work we suggested that gibberellic acid can regulate positively the mechanisms ensuring active radio-induced genetic damage recovery.

Ключевые слова: цитокинины, гиббереллловая кислота, гиббереллин, γ-радиация, малые дозы, Tradescantia (clon 02), розовые мутации, 6-бензиламинопурин, 6-БАП, генетические нарушения, генетические повреждения

Keywords: cytokinins, gibberellic acid, gibberellin, γ-irradiation, low doses, Tradescantia (clon 02), pink mutations, 6-bensyl-amino-pirine, 6-BAP, genetic lesion, genetic damage.

Results and discussion**.** Up to date many mechanisms which control cell cycle were discoveres, cytokinins are known to be involved in governing of these memachanisms. This hormone also ensures connection between them and the mechanisms responsible for DNA damage recognition. Another aspect of this hormone's influencing the cell cycle is its participating in the replication processes (Suchomelova et al., 2003; Larkins et al., 2001; Riou-Khamlichi et al., 1999; Dahl et al., 1995; Soni et al., 1995; Houssa et al., 1994; Fransic D., 2007). This allows to refer cytokinins to the key factor ensuring genetics structure stability under a genotoxic stress, particularly upon low-dose γ-irradiation.