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The Armenian healthcare system: recent changes and challenges

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Abstract

Background Armenian healthcare reforms have been carried out since independence in 1991, but achieved their full scale starting in 1995–1996. Although the healthcare system has already been modified and changed for 10 years, there is a lack of research in this regard.

Objectives This paper aims to present the organization of the healthcare system in Armenia, its changes and challenges throughout the reform process.

Methods This paper is mainly based on a review of the relevant professional literature, a review and interpretation of legal acts in the healthcare field, and a review of research and assessment works done by several international and local organizations.

Results There are still large numbers of elements typical for the Soviet Semashko model in Armenian healthcare structures. Implemented reforms have separated the institutions of the public payer and the providers, but did not manage to change the model of financing to be based on compulsory insurance. The level of financing is similar to the average in Central and Eastern Europe, but is based mainly on out-of-pocket payments contributing to about 80% of all system resources. The informal payments reach even 45% of expenditures. The structure of hospital beds

remains ineffective, and there are still no mechanisms of increasing the quality of services. Privatization has been applied, but the role of private providers is still limited. *Conclusions* The reforms have not caused satisfactory improvement in healthcare performance, although the health indicators are better than at the beginning of the transformation period. The stability of the reforming processes in previous years as well as the engagement of international institutions is a chance for positive changes in the near future.

Keywords Healthcare system · Healthcare reforms · Armenia · Post-communist countries

Introduction

The Republic of Armenia is one of the smallest of the former Soviet republics. This mountainous country covers 29,743 km² and has a population of about 3.2 million (National Statistic Service of RA 2006). After declaring independence in September 1991, Armenia became a sovereign republic headed by a president. Since this time the country has entered a path of transition towards a free market economy, although impeded by numerous difficulties. The dissolution of the Soviet Union exacerbated ethnic and national tensions, contributing to the outbreak of armed conflict between Armenia and Azerbaijan over the Nagorno-Karabakh region. Although a cease-fire has been held since 1994, tensions remain high, causing the borders with Azerbaijan and Turkey still to be closed.

Armenia's early years of independence have been impacted by severe economic decline and energy shortages. The transition to a market economy has been hampered by the legacy of central planning, major economic shocks

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arising from the collapse of the Soviet Union and then the "ruble crisis" (the former Soviet Union currency). The country was also involved in regional conflicts, and reforms were hampered by the limited ability and political will of decision-makers to undertake the critical steps needed to restructure the country's economic and governmental systems. All of this also influenced the healthcare system, resulting in its collapse. During the Soviet era, the government guaranteed-at least in theory-access to a wide range of services for the whole population, which was in line with the assumptions of the Semashko model. After independence the economically weakened state withdrew the financing of healthcare, which became dependent on out-of-pocket payments and was highly perverted by the omnipresent corruption (Mossialos et al. 2002). Since the mid 1990s the government has started to work on a radical program of reform aimed mainly at strengthening primary healthcare and introducing an insurance-based system of financing, but many of these efforts, similarly to those in other post-Soviet republics, particularly those from the South Caucasus region (Azerbaijan, Georgia), have had no effect (Dixon et al. 2004).

The aim of this paper is to describe the recent transformations implemented in the healthcare system of Armenia, as well as to make a presentation of its current situation and possible development in the near future.

Organization of the system

There are several laws regulating the Armenian healthcare system. The most important are:

- the law "On Medical Aid and Medical Services for the Population," which has four main chapters: (1) human rights in the healthcare sphere, (2) healthcare providers, their rights and responsibilities, (3) particular forms of healthcare services and their organizational structures, and (4) healthcare financing (RA Law 1996). Recently, the Ministry of Health has initiated two new legislative projects: "On Healthcare Services"—a draft of the law—and "On Public Health Safety"—a project of the law—which are assumed to be the upgrades of the previous law, fixing many of its defects.
- The laws "On Medications" (RA Law 1998), "On Reproductive Health and Reproductive Rights" (RA Law 2002a), "On Prevention of Disease Caused by HIV" (RA 1997), "On Drugs and Psychotropic Agents" (RA Law 2002b), "On Human Organs and Tissues Transplantations" (RA Law 2002c), and "On Sanitary-Epidemic Safety for the Population" (RA Law 1992).

 The healthcare services are also regulated by the government decrees as well as the orders of the Minister of Health.

Although a sort of structural reform was undertaken during the first years of transition, the organization of the system still has many elements typical for the centralized Semashko model. The Ministry of Health is responsible for supervising the system, for financing the state-guaranteed health services and delivering some of them through the subordinate institutions, as well as for projecting and implementing the reform processes. The Ministry also stimulates the legislative processes for the health sector, which are generally placed in the National Assembly (Hovhannisyan et al. 2001). The lower levels of the hierarchy have a limited independence in decision making, although some of the former reforms were aimed at improving it, as for example the changing of the status of medical facilities (to economically independent state enterprises and to state closed joint-stock companies afterwards) and the new administrative-territorial division of the Republic. This, however, unexpectedly resulted in substantial weakening of the mechanisms of quality control and management of the healthcare system (Hovhannisyan et al. 2001).

An important institution in the system is the State Health Agency established in 1997. The agency fulfills the role of a payer, being responsible for covering the costs of state-guaranteed health services (RA Government 1997). This role was taken by the agency from the district authorities. However, unlike the analogous institutions in many other post-communist countries, the agency is not the insurance fund. Although its aim was to introduce and develop compulsory health insurance, it has not been implemented yet.

Generally, the agency is responsible for: efficient and effective utilization of state healthcare funds in the framework of annual state guaranteed healthcare programs; contracting with healthcare providers on provision of the services financed from public resources and paying for these services; supervising the volume and quality of provided care by the facilities; organizing and conducting the observation of accounting data provided by the healthcare facilities; participating in the development, introduction and implementation of the organizational, managerial and financial modern mechanisms in the Armenian healthcare system (Hovhannisyan et al. 2001 and RA Government 1997).

The regional and local authorities have a limited range of functions concerning the organization of the healthcare system. The regional level authorities have the ownership of most of the secondary care facilities; since 1998 most



rural outpatient clinics have come under the ownership of the communities (the lowest level of self-government) and a few of them under the ownership of regional authorities. The ministry still maintains the ownership of the tertiary level institutions (Hovhannisyan et al. 2001).

Finances of healthcare

General matters

Since the establishment of the State Health Agency, the model of financing health services has been based on a division between the purchaser of the services and the providers. Nevertheless, the general taxes and central budget are still the basic source of health system finances. In spite of the necessity for healthcare development, there is no compulsory health insurance system in Armenia (Carrin 2002).

The Armenian healthcare system has undergone a radical transformation in its system of finance as of March 1996, when a law "On Medical Aid and Medical Services for The Population" was adopted by the National Assembly. This act legalized the alternative means of financing, including private out-of-pocket payments (RA Law 1996), which in fact is a main source of covering the costs of services.

The range of services financed from the public resources is defined in the Basic Benefit Package (RA Law 1996 and RA Government 2004a). In 2005 it covered the following services: hygiene and anti-epidemic control, primary health-care, medical care for children, obstetrics, medical care for socially vulnerable groups, communicable and non-communicable disease control, and the emergency healthcare program (RA Government 2004a). In 2006 the Basic Benefit Package was expanded and now includes all ambulatory-polyclinic services: i.e., primary healthcare services and

specialized services provided at the ambulatory-polyclinic institutions (RA Government 2004a).

Socially vulnerable groups are defined as including the following: disabled persons, war veterans, children under the age of 18 with one parent, orphans under the age of 18, disabled children under the age of 18, children under the age of 7, families with four or more children under the age of 18, families of war victims, arrested persons and prisoners, children of disabled parents, retired persons, persons under the age of compulsory drafting and persons to be drafted to the army, participants in the Chernobyl disaster elimination activities, and military servants and their families (RA Government 2004a). The Basic Benefit Package is renewed every year, and services/groups may be deleted or added accordingly. All services that are not included in it must be paid directly by the patient. There are official prices for the services set by the government, but these are recognized as being too low to cover the actual costs of a particular service, which is one of the factors increasing the informal payments (Hovhannisyan et al. 2001).

Sources of finance

Table 1 presents the basic data concerning the level and sources of financing healthcare in Armenia. The data are based on the estimations by WHO (2007).

As the table shows, out-of-pocket payments are the main source of covering the costs of health services, contributing to nearly 89% of the total expenditures on health in Armenia. Public expenses amounted to only 1.7% of the GDP in 2005 (National Statistical Service). Interestingly, the total expenditures as a percentage of GDP do not vary significantly from the average for all Central and Eastern European countries (WHO 2005). The significant differences between consecutive years within the period 1998–2004 should however not be omitted. The expenditures

Table 1 Expenditures on healthcare in Armenia

Indicator	1998	1999	2000	2001	2002	2004
Total expenditure on health (THE) as % of GDP	5.8	7.1	5.2	7.0	5.8	5.4
General government expenditure on health (GGHE) as % of THE		25.0	16.7	22.4	23.6	26.2
Private sector expenditure on health (PvtHE) as % of THE		75.0	83.3	77.6	76.4	73.8
Private households' out-of-pocket payment as % of PvtHE		84.3	92.7	81.8	89.1	89.2
Total expenditure on health per capita at exchange rate (US \$)		36	39	45	42	63
Total expenditure on health per capita at international dollar* rate		133	150	176	173	226
General government expenditure on health per capita at exchange rate (US \$)		9	6	10	10	16
General government expenditure on health per capita at international dollar rate*	33	33	25	40	41	59

Source: World Health Organization 2007

Online at http://www.who.int/entity/nha/country/ARM.xls accessed on 23 August 2007

^{*}The international dollar is a hypothetical currency unit that has the same purchasing power as the U.S. dollar has in the United States at a given point in time. It shows how much a local currency unit is worth within the country's borders. Conversions to international dollars are calculated using purchasing power parities (PPP). It is used for comparisons namely of gross domestic products (GDP) both between countries and over time



given in amounts per capita are much lower than the average for the region, where in 2004 it amouted to 437.3 international dollars in the CIS countries (Commonwealth of Independent Countries: most of the former Soviet Republics; WHO Health for All database 2007) and nearly 2,334.3 in the whole European Union (WHO Health for All database 2007), giving the scale of collapse of the system during the transition period—the general government expenditure on health in the Soviet period was about US \$300 per capita (Ter-Grigoryan 2001).

The informal payments are widely expanded in the Armenian health system, similarly to the general national economy. One of the factors causing the increase of this phenomenon is the fact that very low prices are paid by the state for state-funded services. As these prices are too low to cover the costs of provided services, providers are forced to request payments from patients even in those cases where a patient falls within the Basic Benefit Package (Hovhannisyan et al. 2001). Due to the estimations, the scale of informal payments in Armenia may exceed 45% of the total healthcare resources (State Budgets of RA 2002 to 2006). To compare this with the Transparency International Estimations, this level is lower than in Azerbaijan (84% of all health expenditures), slightly more than in Georgia (about 35–40%) and noticeably more than in Russia or Poland (30%; all data based on: Transparency International 2006).

Structure of expenditures

The lack of a system of data collection in Armenia, as well as the unclear mechanisms behind the flow of funds, makes the precise estimation concerning the structure of expenditures impossible. The only available data are for public expenditures, which are presented in the table below.

The most evident trend indicated by these data is the systematic decrease of expenditures on hospital care and the increase of financing of ambulatory care. This is the positive result of the implemented reforms that were assisted by USAID/Armenia, the World Bank, WHO and other international organizations (State Budgets of RA 2002 to 2006). There is no separate position for health promotion, since this is among the responsibilities of the primary healthcare.

The healthcare providers

The structure of providers still has many elements of the former Semashko model, although a sort of change was implemented during the period of transition. For example, the state-owned hospitals and polyclinics are now semi-autonomous, self-financing enterprises with considerable decision-making powers (each time a new enterprise is

formed from a public institution, it is supported by a government decree). Since 1999, the healthcare facilities have been able to set prices for chargeable services (not for services within the BBP), to some extent to determine staffing levels and to negotiate contracts with the staff. The facilities are responsible for covering their own costs and should autonomously make efforts to attract a sufficient volume of patients to secure their financial stability (each facility has its bylaw defining policies and procedures). The number of hospital beds in Armenia in 2004 was 443 per each 100,000 population (Ministry of Health 2004). It was similar to the number in Georgia (407 per 100,000 population), and much lower than in Azerbaijan (824 per 100,000) or the whole CIS region (866 per 100,000 population). This is even lower than in the European Union, where in 2004 it had 586 hospital beds per 100,000 population (all data: WHO Health for All Database 2007). A major problem is the low effectiveness of the hospital sector; in the late 1990s the average length of stay in the hospital was nearly 13 days. In 2004 it decreased to 10 days, which was much lower than in Azerbaijan (16.4 days), slightly lower than the average for the CIS region (13.4 days) and only slightly more than the average for the European Union (9.25: WHO Health for All Database 2007). At the same time the level of utilization remains dramatically low, being only slightly higher than 41.8%, compared to 75.9% in the European Union and 85.7% in the CIS region (WHO Health for All Database 2007; data for year 2004).

The RA law "On Medical Aid and Medical Services for The Population" of March 1996 allows patients to freely choose their primary healthcare physicians (RA Law 1996). "Open enrollment" (the selection of the primary healthcare provider by the patient), however, has not been fully implemented due to the absence of necessary procedures and mechanisms, as well as the lack of information and education about the system. On 30 March 2006 the government adopted a decree "On Procedures of PHC Doctor Selection and Registration with Him" (RA Government 2006b). The new regulation assumed that the right to choose a provider would start functioning in practice on 1 January 2007, after making all necessary preparations, such as training of staff for filling in registration forms and entering them into the automated Health Information System, IT equipment procurement, etc. (RA Government 2006a). Before, patients were obliged to be registered with a doctor working in a facility according to where they lived.

As has been mentioned, due to the lack of health insurance and the collapse of the system of public health financing, the main method of payment for providers is out-of-pocket payments. For services included in the Basic Benefit Package, the State Health Agency at the beginning of each year signs the contracts with the healthcare facilities



to provide them. In the mid 1990s there was a major change in the method of financing the services. In the case of hospitals and large ambulatory medical facilities with hospital beds, quasi-contracts and case-based payment methods were introduced. Presently, every year the Ministry of Health fixes the price for one bed/1 day of stay and calculates the average length of stay in any given in-patient category and hospitals. Providers are then paid according to this approach. The methods of payment are, however, not comprehensive. Since June 2000, the SHA has begun to cover the hospitals' expenses (for services included in the Basic Benefit Package) by the model of the global budget (Ter-Grigoryan 2001). This means that the facility receives a certain pool of financing per year and within that certain reimbursement for one completed hospital case. In fact the managerial body of the hospital is responsible for the allocation of the global budget funds inside the hospital. They define the structure of internal allocations: salary remuneration, administrative expenses, medical equipment and supply (each facility has its bylaw defining policies and procedures for how to act). The rate for 1 day/one bed was about US\$ 19.3 in 2005 and US\$ 25.7 in 2006 (USD exchange rate versus Armenian Dram, AMD, has been dramatically decreasing since 2004, and the actual rise in 1 day/one bed in Armenian Drams was 3.4%-from 8,700 AMD in 2005 to 9,000 AMD in 2006). In state-owned facilities the average salary of physicians in 2006 was US\$ 110, and for nurses US\$ 87 (State Simplified Health Budget 2006).

Primary healthcare facilities are paid on a "per capita" basis. Since the catchment area for the appropriate facility is defined by the Regional Health Authorities and it cannot be changed by either the facility or the patient (since 1 January 2007 the Open Enrollment System has allowed changing the physician, but the financial implications will start on 1 January 2008), in fact it can be said that the primary care physicians' (therapeutists, pediatricians and family physicians) salaries are set preliminarily. There is a defined minimal, optimal and maximal number of the population that can be assigned to one physician: for 2006 it was as presented in the table below (Minister of Health 2003).

The role of private health facilities is becoming more and more crucial in the whole healthcare framework of Armenia. They are recognized as being much more well organized, ensuring a higher quality of services, and familiarized with the client-oriented approach and modern costing mechanisms. The first document outlining privatization of healthcare facilities was submitted by the Ministry of Health to the government in 1994. In subsequent years additional approaches to privatization were developed. Presently, nearly all pharmacies, medical technical services and almost all huge medical centers are privatized under private companies and non-profit organizations. Besides, any kind of hospital and/or independent

practice is allowed to practice if it meets all the requirements for and obtains its license. In 2005 17% of hospitals (24.9% of hospital beds) and 11% of primary healthcare facilities were private (Ministry of Health 2005). For comparison, private hospital beds in 2004 in the following countries and regions were: EU–20.1%, CIS–2.4%, Azerbaijan–0.21%, Estonia-10.1%, Kazakhstan–6.6%, and Latvia-5% (WHO Health for All database 2007).

The general changes and challenges of the recent transitions

During the Soviet era, Armenia had one of the best developed healthcare systems in the Soviet Union (Ter-Grigoryan 2001). However, the economic crisis has decreased the government's ability to provide adequate funding for healthcare, with major implications for health status. Life expectancy, which in the early 1980s was the highest in the Soviet republics (73 years), fell in the early years after independence (71 years in 1991-Ministry of Health 2004). Since the mid 1990s, this factor has been climbing steadily and reached 72.5 in 2000 and 73.4 in 2004 (Ministry of Health 2004). This was much higher than in Russia (65 years) or the average for the CIS region (67 years), and comparable to the average for the "new" EU Member States (74 years; WHO Health for All Database 2007). At the same time the infant mortality factor was improving systematically and reached 11.6 cases per every 1,000 live births in 2004, to be compared with 18.5 cases per 1,000 live births in 1990 (Ministry of Health 2004). It was lower than the average for the CIS region (more than 13 cases per 1,000 live births), but much higher than the average for the EU Member States (5.25 cases per 1,000 live births; WHO Health for All Database 2007).

Falling life expectancy in the first half of the 1990s was a reflection of worsening adult health due to increases in

Table 2 Government health expenditure structure. Source: National Statistical Service of RA

Indicator	2002	2003	2004	2005	2006
State healthcare management	0.5	1.1	2	1.6	1.8
Hospital services	55.3	55.3	51.6	43.5	36.9
Primary healthcare services (ambulatory-polyclinic)*	23.2	33.4	34.9	38.7	36.7
Hygienic and sanitary- epidemiological services	5.3	2.8	4	4.5	5.3
Other healthcare services and programs	15.7	7.4	7.5	11.7	19.3

^{*}Including narrow specialists' services provided within the framework of primary healthcare facility



Table 3 Number of attached population to the primary care physician

	Minimal	Optimal	Maximal
Theraputist (urban areas)	1,000	2,000	2,500
Theraputist (rural areas)	1,000	2,000	2,700
Pediatrician (urban areas)	500	1,000	1,200
Pediatrician (rural areas)	500	1,000	1,400
Family physician	1,000 (300 children + 700 adults)	1,700 (500+1,200)	2,300 (800+ 1,500)

Source: Minister of Health order "On RA State-Owned Primary Healthcare Facilities Medical Personnel Remuneration Setting Procedures," ¹ 195, 28 March 2003

cardiovascular diseases, cancer, diabetes, tuberculosis and others. The incidence of major communicable diseases such as tuberculosis and HIV/AIDS has increased. Outbreaks of waterborne diseases were caused by the degradation of poorly maintained water supply networks (Hovhannisyan et al. 2001). According to the "National Survey on the Drug, Alcohol and Smoking Prevalence among the General Population of Armenia" conducted in 2005, tobacco was smoked by 29% of the population of 16 to 75 year olds, including 60.5% of men and 2.2% of women. The number of respondents to the aforementioned survey who knew drug users showed that the proportion of people who knew persons who were taking *hashish* or *marijuana* was relatively high (5.4%) and was followed by persons who

knew *cocaine* (0.9%) and *heroin* (0.6%) users (ICHD, NSS, NIH and SCAD 2005) (Tables 2 and 3).

The decreasing health status may therefore be the result of unhealthy behavior. Nonetheless, the inefficient health system could also play a significant role, especially in case of the maternal and child health. Table 4 presents data that may prove such a correlation (United Nations Development Program 2005).

In the context of the recent transitions and current main health problems of the Armenian population, the basic challenges for public health in Armenia may be characterized as follows:

- Primary healthcare should be emphasized. A fundamental problem in primary care is its accessibility for people, which has become difficult for a large segment of the population due to their inability to pay out-of-pocket for health services. The number of outpatient contacts in 1999 per person per year in Armenia was 2.3, while the average for EU countries was 6.2 and for NIS countries 8.3 (United Nations Development Program report 2005) (Hovhannisyan et al. 2001). Since the above-mentioned decision concerning extending the Basic Benefit Package for all ambulatory services was declared, the flow of patients to primary healthcare has been enormously increased. This caused another problem with the inadequate salaries of the healthcare personnel, which has increased, but is said not to correspond to the increase of visits.
- In Armenia, the sense of individual responsibility for one's health is low. Probably the main reason for this

Table 4 Population's morbidity, not seeking medical care and lack of access to healthcare (percentages)

	Population's morbidity*	Proportion of those who did not seek medical care in the total number of people with sickness	Of which the proportion of those who did not seek medical care due to lack of access**	Proportion of those who were sick but did not seek medical care in the total number of people with sickness
Total population surveyed	34.3	42.8	97.1	41.6
Urban	35.4	41.6	96.8	40.2
Rural	33.2	44.2	97.6	43.2
Women	36.6	43.7	97.2	42.5
Men	31.6	41.0	97.0	40.3
Age 0–7	20.0	18.9	97.0	18.4
Age 8–15	13.6	36.9	98.9	36.6
Age 16–64	35.4	45.7	98.8	44.4
Age 65+	66.9	42.6	97.1	41.4

^{*}Population's morbidity is calculated as the ratio of the number of people who in the 12 months preceding the survey suffered from a disease that limited their ability to the total number of respondents

Source: NHDS database 2003



^{**}For NHDS purposes, the lack of access to medical care is defined as the combination of three components: (1) material lack of access or inability to pay for the cost of medical care; (2) physical lack of access or difficulties in reaching a doctor and/or healthcare facility; (3) lack of time needed for seeing a doctor

situation is the absence or low level of health education. Health education and health promotion are core components of primary healthcare (RA Government 2004c).

- The situation with the health workforce is inefficient in Armenia. Particularly, the Armenian healthcare system has suffered from an overproduction of medical personnel, unemployment and underemployment. Taking this situation into account, the Ministry of Health expects the healthcare reforms to affect future requirements and the supply of health specialists. In spite of an overproduction of medical personnel, there is a shortage of health specialists in rural areas, because there are no incentives for physicians to move there. Similarly as in most of the other post-communist countries, there is also a problem of overspecialization and insufficiency of primary healthcare personnelfamily physicians and general practitioners (Ministry of Health 2004). One of the Ministry of Health initiatives-the Family Medicine introduction—was also aimed to reduce the number of medical personnel and to integrate some particular specialties into one (RA Government 2004c).
- Health planning is not adequately developed in Armenia. One of the main reasons is the absence of effective tracking mechanisms for health expenditures. The planning process cannot be completed if the government does not have the actual figures for expenditures. The whole state budget is formed by the estimation principle. The NHA calculation system is in the formative process, and almost all current data have been estimated. Unless the government pays attention to the present situation and considers the first stage of planning, the whole cycle of planning cannot be effectively completed (Green 1992).
- Informal payments remain one of the most vulnerable issues in the Armenian healthcare system. It is said that it can be solved by the introduction of compulsory health insurance, the implementation of effective costing models and decreasing taxes (Carrin 2002).

Conclusions

 The whole period of transition that started with the independence of Armenia resulted in the improvement of the healthcare system in the country, but still the majority of the aims of the reforms has not been achieved. There are still no adequate finance tracking mechanisms, and the planning of health financing is insufficient. Hopefully, actions taken recently by the National Health Accounts working group will manage

- to prepare the ground for the proper mechanisms for data collection and suitable future health planning.
- 2. There is still a need to enforce the mechanism of health financing based on the state's compulsory health insurance and complementary private insurance, which should lead to a more adequate allocation of financial resources in healthcare. It will have a significant role in the process of eliminating out-of-pocket and informal payments.
- 3. Due to many health education campaigns and other health promotion activities, each year the Armenian society becomes more informed about its health, thus demonstrating healthy lifestyles and health-seeking behavior. Nevertheless, health education is still a great challenge for Armenia.
- 4. Armenian healthcare legislation and regulations are relatively well developed. Nonetheless, there are still problems with the practical implementation of the existing law due to the lack of political will and corruption.

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