The health of children and adolescents of Armenia has been affected by various socioeconomic, environmental, educational, and behavioral factors, demonstrating trends typical for both developed and developing countries. Key issues to be addressed by Armenian pediatricians are child mortality, malnutrition, and growth failure in the early years and overweight in later years. The case of Armenia illustrates how countries in transition are currently tackling both “old” problems (mortality and malnutrition) and “new” emerging morbidities (chronic diseases and adolescent health problems) based on social and health determinants, but the financing of the health system is far from satisfactory. Lessons of Armenia indicate the need for more cooperation between general practitioners and pediatricians at a primary care level. In addition, a better balance between inpatient and outpatient care could be achieved, which is not yet the case. Nevertheless, the overall performance of the Armenian child health care system can be considered satisfactory when bearing in mind the limitation of resources. Among the successful factors are those inherited from the Soviet period health system, including key institutions such as rural health posts and health centers, city polyclinics, and hospitals. These institutions mostly meet the needs of Armenian children and families today. (*J Pediatr* 2016;177S:S21-34).

A rmenia is a small country, which declared its independence after the collapse of the Soviet Union in 1991. During the 1990s, Armenia experienced a severe socioeconomic crisis caused by disruption of traditional ties, transition of its economy, and consequences of war. This resulted in dramatic levels of unemployment and a rise in poverty, followed by worsening living conditions and health care systems.

In the last 15 years, the country’s economy has demonstrated continued growth, only temporarily interrupted by the world economic crisis in 2009. The World Bank (WB) graded Armenia as a low-to-middle income country. The transition of the economy has led to health system reforms, including changes in governing systems, privatization of some hospitals, initiation of paid services, and the introduction of private insurance. A key reform affecting child health care was the introduction of general practitioners (GPs) leading to a major change in provision of primary health care (PHC) for children.

**Geography and History**

The Republic of Armenia is located in Transcaucasia. It borders with Georgia to the north, Turkey to the west, Iran to the south, and Azerbaijan to the east. With a territory of 29 800 km², Armenia is one of the smallest countries of the European region. The registered population in 2013 was 3 million. Armenia is one of the most monoethnic countries of the world; 98% of the population is Armenian.

Armenia has a long and dramatic history. The capital city of Yerevan was founded in 782 BC. In 301 AD, Armenia became the first country in the world to adopt Christianity as a main religion. A unique Armenian alphabet was invented in the beginning of fifth century. During the Middle Ages, Armenia survived many wars and was under occupation by Arab Caliphate, Persian, and Ottoman Empires at different times. As a result of the Russian–Persian wars, the eastern part of Armenian plateau was included into Russian Empire in 1828 and became a part of the Union of Soviet Socialist Republics (USSR) in 1920 as the Armenian Soviet Socialist Republic. Some 1.5 million Armenians, who lived in the western part of Armenian plateau in Ottoman Empire, were massacred during the First World War; the survivors were forced to leave the motherland and, thus, formed Armenian Diasporas in many countries of the world. Nowadays, the number of Armenians who live abroad is approximately twice the current population in Armenia.

**Table:**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AMD</td>
<td>Armenian Dram</td>
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<tr>
<td>ARI</td>
<td>Acute respiratory infection</td>
</tr>
<tr>
<td>BBP</td>
<td>Basic Benefit Package</td>
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<tr>
<td>CIS</td>
<td>Commonwealth of Independent States</td>
</tr>
<tr>
<td>DHS</td>
<td>Demographic and Health Surveys</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>GP</td>
<td>General practitioner</td>
</tr>
<tr>
<td>HBSC</td>
<td>Health Behavior in School-Aged Children</td>
</tr>
<tr>
<td>IMR</td>
<td>Infant mortality rate</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary health care</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
<tr>
<td>USSR</td>
<td>Union of Soviet Socialist Republics</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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</table>
Soviet Armenia was one of the most advanced republics of USSR. Armenia had developed an industrialized sector, supplying machines, electric tools, textiles, shoes, and other manufactured goods to other Soviet republics as well as to other countries. Up to 800,000 of Armenia’s population were involved in different forms of industry, largely based on its own research and engineering. Also, Armenia had a relatively well-developed agricultural sector.

Contemporary Armenia declared its independence in 1991 after the collapse of USSR. Immediately after that, the country experienced a severe socioeconomic crisis related with disruption of traditional trade ties and rapid transition of its economy from a socialist to a market-style economy. The situation was worsened by the consequences of war with neighboring Azerbaijan and the blockade of communications by Turkey. All these factors in mid-1990s resulted in shortages of food, fuel, and power. Living conditions of the population dramatically worsened and led to massive emigration.

Sociodemographic Situation
Because of economic crisis and emigration, the country’s population decreased from 3.7 million in 1991 to 3 million in 2012 (Table I). Annual number of births decreased from approximately 80,000 to 43,000 in 2012. Decline in births was caused by both emigration and decrease in fertility rate: the number of children per woman of reproductive age decreased from 2.6 in 1990 to 1.7 in 2010. As is common with many other countries, age of first childbearing has increased. As a result, the proportion of population aged 0-14 years decreased from 30% to 20% of the population, and the proportion of elderly people increased. Age dependency rates for elderly people increased as well. Thus, according to the United Nations (UN) definition, Armenia currently belongs to the countries with fertility under replacement level. Another key issue is a relatively high prevalence of sex-selected abortions, resulting in sex imbalances at birth.

Political Context
Armenia has a mixed parliamentary/presidential mode of governing. The presidential and parliamentarian elections take place every 5 years. The President of Armenia is mainly responsible for foreign affairs and defense policy. The government is appointed by the President based on results of the parliamentary elections. Overall, the governing system is overly centralized because of the small size of the country and the country’s budgeting scheme finance system. The Ministry of Health (MoH) is responsible for developing policies, state health budget, and overall governing of the health system.

There are numerous political parties, 6 of which present in the Parliament (National Assembly). The ruling party is the Republican Party of Armenia, which has the majority of seats in the Parliament and currently forms the Government. Mass media is relatively free; many newspapers and social media expressing different and opposite views are available for the citizens of Armenia. According to the Transparency International Report, Armenia is ranked 94th among 175 countries on the corruption perception index and 82nd on the competitiveness index. According to the Human Development index, Armenia ranks as “high” — 87th out of 187 countries.

Armenia is a member of UN, post-Soviet Commonwealth of Independent States (CIS), Council of Europe, and World Trade Organization. Armenia has adopted many of the international conventions such as UN Convention on the Rights of the Child and others. In the field of health, Armenia actively cooperates with UN agencies, such as World Health Organization (WHO), United Nations Children’s Fund (UNICEF), United Nations Population Fund, and other donor organizations, such as the WB and US Agency for International Development. In addition, Armenia is a member of the Eastern Partnership program of European Union (EU).

Socioeconomic Status
After declaring independence in the mid-1990s, the Armenia gross domestic product (GDP) fell nearly 60% from its 1989 level. Consequently, in the late-1990s, 55% of the country’s population lived in poverty, one-third of them in extreme poverty. The health expenditure was approximately US $5.4 per capita in the mid-1990s. Despite of all the difficulties, between 2000 and 2008, the national

| Table I. Sociodemographic characteristics of Armenia |
|---------------------------------|------|------|------|------|------|
| Total population               | 3,544,695 | 3,223,173 | 3,076,098 | 3,014,917 | 2,969,081 |
| Population 0-14 y (%)          | 30   | 29   | 26   | 21   | 20   |
| Population 15-24 y (%)         | 18.7 | 16.2 | 18.3 | 16.5 | 15.4 |
| Population 15-64 y (%)         | 64   | 62   | 64   | 66   | 69   |
| Population over 65 y (%)       | 6    | 9    | 6    | 13   | 11   |
| Annual growth rate of population | 57,889 | 24,118 | 10,251 | 11,120 | 14,881 |
| Population density (per km²)   | 124  | 113  | 108  | 105  | 104  |
| Mean age of woman at first childbirth (y) | 22.8 | 22.5 | 22.3 | 22.8 | 24.1 (2010) |
| Fertility rate (%)             | 2.5  | 2.1  | 1.7  | 1.7  | 1.7  |
| Birth rate (per 1000 people)   | 22   | 16   | 13   | 14   | 14   |
| Death rate (per 1000 people)   | 8    | 9    | 8    | 8    | 9    |
| Working-age population (%)     | 56   | 61   | 56   | 50   | 44   |
| Urban population (%)           | 67   | 66   | 65   | 64   | 64   |
economy demonstrated a rapid growth rate of 8.7%. Economic progress led to a significant decline in poverty (25% in 2007). Nevertheless, the latest world economic crisis highlighted fragility of the country’s economy, and in 2009 GDP had fallen by 14%. The economy in 2010 had a modest growth at 2.2% because a trend toward recovery of the national economy has been observed. However, in 2013, almost every third person (32.0% of the population) was poor, among them 13.3% were very poor, and 2.7% were extremely poor. National statistics suggest that the poverty rate varies between regions and especially between the capital and remote rural provinces. Large households and those with 3 or more children are at high risk of poverty, families with 4 or more children have twice the poverty rate, and the risk for single parent families is 1.8. The same scenario is seen with the families with child (or children) with a disability.

Currently, WB groups Armenia among countries with “lower-middle incomes.” GDP per capita was US $9950 in 2012 (Table II). Social funding was low and has remained low even in the successful years of the mid-2000s. Health expenditure in 2012 amounted to 4.5% of GDP, which is significantly lower than many European countries.

Education. Overall, educational attendance of the Armenian population is high. The country’s current educational system was established mainly during the Soviet era and consists of preschool facilities for children aged 2-6 years, basic primary and middle schools (grades 1-4 and 5-8, respectively), and high school (grades 9-12). There are also private, specialized, and vocational schools. In total, there are 1434 schools, providing general education in Armenia. The literacy rate is close to 100%.

Environment. Many environmental factors have an impact on the health of children and adolescents in Armenia, including limited access to safe water, outdoor pollution (particularly in the capital), indoor pollution because of the use of solid fuels (19% of households use solid fuels), as well as a high prevalence of smoking. There is also a lack of safe places for children to play and take part in physical activity, especially in the cities.

According to WB data, 99% of the population use clean drinking resources and have improved sanitation status. However, the source of water in many cases is located outside the home; in some areas, the water supply is limited to only some hours of the day.

Many communities had no appropriate buildings for kindergartens and schools until recent times. A significant number of schools had no central heating system, with classes being heated either through electric heaters or various types of stoves. According to the Health Behavior in School-Aged Children (HBSC) pilot study held in 2005, only 50% of respondents thought that the temperature in their school was satisfactory, but others reported that their schools were kept at a temperature that is below the required minimum. Poor sanitary conditions were noted by many of the children interviewed. However, the physical conditions of schools are constantly improving thanks to efforts of both the state and donors.

Early Childhood

Mortality
To present mortality trends in a country like Armenia, the following considerations should be taken into account. First, the country’s health information systems are relatively not well developed. Also, pathology (autopsy) services are poorly developed, which leads to uncertainty in some cases in determining true causes of mortality. Armenia introduced the international standards of registration of perinatal mortality (with cut-offs of 500 g and 22 weeks of gestation) only in 2009, so trends of mortality should be interpreted with caution. Overall, these factors impact the validity of published mortality rates and causes of mortality. Data of UN interagency group, WHO, and UNICEF (Table III) are still higher than those provided by Armenian official statistics, but discrepancy between them is less than it was in the past.

The 2013 infant mortality rate (IMR) was 9.7‰, and the mortality rate for children less than 5 years of age was 11‰, according to UN estimations. IMR and mortality rate for children less than 5 years of age in 2013 were 14% and 16%, respectively. In 2014, the national statistics showed IMR to be lower (8.7%). Data from WHO/UNICEF are not available for 2014. Regardless of the discrepancies, all sources indicate that IMR and mortality rate for children less than 5 years of age have substantially declined (more than 2 times) over the last 25 years (Table III). Furthermore, maternal and perinatal mortality rates have declined.

The main causes of death among children up to age 5 years are prematurity, congenital anomalies, asphyxia, and neonatal sepsis (Figure 1). Neonatal mortality rate has

Table II. Socioeconomic characteristics of Armenia

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</tr>
</thead>
<tbody>
<tr>
<td>GDP, US $, thousands</td>
<td>2256</td>
<td>1468</td>
<td>2118</td>
<td>4900</td>
<td>9950</td>
</tr>
<tr>
<td>GDP per capita, US $</td>
<td>637</td>
<td>456</td>
<td>621</td>
<td>1625</td>
<td>3351</td>
</tr>
<tr>
<td>Unemployment, % of total labor force</td>
<td>n/a</td>
<td>36.4</td>
<td>35.9</td>
<td>28.4 (2007)</td>
<td>18.4 (2011)</td>
</tr>
<tr>
<td>Youth unemployment rate</td>
<td>n/a</td>
<td>n/a</td>
<td>48.2</td>
<td>57.6</td>
<td>39.2</td>
</tr>
<tr>
<td>Poverty rate total</td>
<td>n/a</td>
<td>n/a</td>
<td>48.3</td>
<td>n/a</td>
<td>32.4</td>
</tr>
<tr>
<td>Inequality measure (Gini coefficient)</td>
<td>n/a</td>
<td>44.4 (1996)</td>
<td>36.2 (2001)</td>
<td>35.8</td>
<td>30.3</td>
</tr>
</tbody>
</table>

n/a, not available.
decreased from 7.2% in 2013 to 6.7% in 2014. Postneonatal causes include acute diarrhea and acute respiratory infections (ARIs), with pneumonias being a relatively significant cause of child mortality. Both the absolute figure and the proportion have significantly decreased over the last 2 decades. In contrast to many developing countries of Asia and Africa, no lethal cases of measles, malaria, or HIV have been recorded.

Demographic and Health Surveys (DHS) conducted in Armenia every 5 years since 2000 indicate that the mortality rate for children less than 5 years of age and IMR are significantly higher in rural areas, with a 5-fold difference among children aged 1-4 years. Mortality of children less than 5 years of age levels declined as the mother’s education increased. As is the case across the world, mortality rates are higher among children of families from lower wealth quintiles.

In 2011, the MoH introduced the “Child Certificate,” an initiative to increase accessibility of hospital services for children aged 0-7 years accompanied by a special campaign that was launched to inform the parents about easier access to hospitals. The financial allocations for hospital services for the children have increased from 3.1b Armenian drams (AMD) to 6.4b in 2011. This led to a sharp increase in the number of admissions of early age children to hospital from 26,663 in 2010 to 43,788 in 2012. At the same time, the number of children treated in outpatient facilities or at home decreased, and many patients with uncomplicated cases were treated in hospitals. However, obvious positive results of the initiative have been seen. The number of officially registered deaths among infants in 2 years decreased from 500 in 2010 to 412 in 2012 (the annual number of births did not change substantially). The number of deaths occurring in hospitals within 24-hour period after admission decreased from 77 (15.4% of infant death cases) to 15 (3.6%). The same tendency was noted in regard to the number of infant deaths occurring at home (absolute figure decreased from 72 to 45).

**Common Medical Problems**

In 2013, 6.5% of neonates were born premature. This indicator has remained stable for 10 years. Low weight births (less than 2500 g) were 8.2%. Total morbidity of mature neonates is 8.1% and has not decreased within 20 years. The leading causes of morbidity among neonates are asphyxia, intrauterine hypoxia, congenital anomalies, and birth complications.

After the neonatal period, the most common health problems were ARIs and diarrhea, which, in the late-1980s and early-1990s, were responsible for at least 1 of 3 deaths in children aged 0-5 years. In some rural areas with low access to health services, they accounted for almost one-half of the deaths. Late recognition and low quality of care were responsible for a significant numbers of deaths. Over-use of antibiotics reached a maximum in the early-1990s. In the mid-1990s, a survey on the management of 505 children up to 5 years of age with ARI showed that antibacterial drugs were prescribed in 97% of cases and in 100% of hospital cases. Overtreatment was not the only mismanagement, which also included underevaluation of life-threatening symptoms, inadequate choice, or wrong dose of antibiotics, etc. A close collaboration with WHO/UNICEF introduced national programs to improve the management of ARI and diarrhea. Later, the Integrated Management of Childhood Illness program led to further improvement in the management of these conditions. Improving breastfeeding practices, vaccination rates, better sanitation, and home care practices
also contributed to a significant reduction in mortality rates. However, the practices of management still lack quality and need further improvement.

**Immunization**
The immunization coverage in Armenia in the early-1990s decreased because of antivaccination campaigns largely caused by numerous nonevidence-based publications on adverse effects of vaccines in the last years of the Soviet Union (1985-1991). In addition, after Armenian independence, the supplies of vaccines became problematic because of disruption of ties with traditional suppliers. These factors led to a transient increasing morbidity from vaccine-preventable diseases. After implementation of the National Program of Immunization, regular supply of new vaccines was guaranteed and improving the “cold chain” led to a decrease of morbidity. For example, cases of diphtheria were less frequently reported in Armenia than in neighboring countries. In 2002, Armenia was certified by the WHO as a “Polio Free Zone.”

Currently, the Armenian routine vaccination schedule includes immunization for tuberculosis, hepatitis B, diphtheria, tetanus, pertussis, poliomyelitis, haemophilus influenza, rotavirus, pneumococcus, measles, mumps, and rubella. According to different sources, the immunization rate in Armenia is among the highest in the region. Currently, more than 90% of children are appropriately immunized in Armenia. There is an increase in coverage of target groups (97.1% in 2012). Since 2000, Armenia has targeted its efforts to eradicate measles. Current immunization rate for measles is 97%. However, DHS showed the tendency to skip vaccinations, which was most frequent among better-educated mothers in urban areas.

**Nutrition**
According to the DHS, there were many nutritional problems in preschool children. The 2010 household survey showed poor growth in 19% of children up to 5 years of age; with 4% being underweight. Conversely, 15% of all the children were overweight. In 2005, the prevalence of anemia was 37% of children from 6-59 months of age. This indicator correlated to the prevalence of anemia in women of the reproductive age; among them, anemia was documented in 25% of women.

Significant progress has been achieved by promoting breastfeeding practices in Armenia; 97% of children were breastfed at some time. The median duration of breastfeeding was 11 months. The prevalence rates of exclusive breastfeeding and predominant breastfeeding among children under 6 months of age was 35% and 62%, respectively. At the age of 6 months and 1 year, 61% and 44% of children were still breastfed, respectively. Duration of breastfeeding was shorter in urban areas, where mothers needed to recommence regular work sooner.

**Early Child Development**
Developmental disorders and disability are relatively new problems in Armenia. During the Soviet period, children with developmental problems and disabilities, particularly those from families with low education levels, often were perceived as “defective” and kept hidden at home. According to 2015 official data, 8006 children (approximately 1.5% of children’s population) were certified officially as disabled and received a monthly benefit of 19 600 AMD (equivalent to US $40). Data from the national household survey held in collaboration with UNICEF in 2005 showed that 11% of children from 0-8 years of age had a developmental delay or disability (visual, hearing, mental, or musculoskeletal). The prevalence of autism and autism spectrum disorders is increasing, which may be partly explained by better diagnosis in recent years. A household study of 880 children with developmental problems held in one of the poorest regions of Armenia identified the following risk factors: sex (male:female, 1.5:1), low birth weight, young age of mothers, living in rural area, and the presence of other sick children in the family.

The health sector largely ignored the social and educational needs of children with developmental problems until recently. The majority of these affected preschool children and 13% of school-aged children did not attend any educational institution. A survey in 2007 revealed that almost one-half of the children identified by household respondents as having a disability received inadequate medical and other supportive treatments.

**School-Aged Children and Adolescents**

**Health Indicators**
Morbidity, mortality, and other health indicators in national statistics are provided for the following age groups: 0-14 years, 15-19 years, and 20-34 years, etc. Thus, Armenia (as well as many other countries) lacks valid national epidemiologic data on children aged 5-10 years, and information has been taken from various large- and small-scale studies. A survey of 6- to 12-year-olds in 2005 in a few urban and rural communities found that approximately 20% of school-aged children had at least one chronic health complaint such as dental caries, allergy and difficulties in nasal breathing, recurrent otitis, chronic cough, gastroesophageal diseases, urinary tract problems, spine disorders (scoliosis, kyphosis), vision or hearing problems, and neurologic disorders. Results of other check-ups performed in the schools showed that prevalence of vision problems among 7-year-olds was 28% and in 14-year-olds was 45%. Data of specialized health centers, which are responsible for follow-up for children with chronic diseases (asthma, neurologic disorders, rheumatologic disorders, and others), showed that the number of patients with chronic disease in these age groups is rising.

Data of the HBSC study have shown that 8% of interviewed adolescents reported to have some kind of chronic disease that required long-term medical follow-up or taking of medications for a longer time. Twenty-three percent...
believed that their health was either “fair” or “poor,” which corresponds to other European countries. Multiple health complaints were reported by 55% of 15-year-old girls and 34% of 15-year-old boys. Twenty-five percent experienced a headache more than once a week or every day. Thirty-five percent of school-aged children had stomachaches several times a week, especially among rural inhabitants.34 Indicator of multiple health complaints among Armenian school children is among the highest in Europe.30

Adolescents are very vulnerable to various stresses, which negatively affect their mental health. Within the HBSC study, school children were asked about mental health with regards to signs of depression and suicidal ideas. Thirty percent of adolescents, especially females, reported feeling sad quite often or very often during the last week; 7.5% of surveyed boys and 10.1% of girls had thought about attempting suicide during the past 12 months.29

**Health Determinants**

There are many well-known risk factors for the health of school-aged children and adolescents. At the same time, a number of protective factors that positively affect the health of the children and adolescents in Armenia still exist.

The main sources on health and risk factors of adolescents aged 11-17 years are the HBSC surveys completed in 2005, 2010, and 2013 with the European HBSC network.30 The 2010 survey included 62 schools with 2833 valid interviews.29 The latest 2014 survey included 82 schools with 3679 valid interviews (data of study is under analysis). Also, some other sources are helpful in the assessment of risk factors for schoolchildren and adolescents.29

**Family Culture.** According to the interviews, Armenian families are largely traditional; 88% of responding adolescents lived with both parents.29 These data correlated with the national statistics show a divorce rate of 16%.3 About one-half of them lived also with grandparents staying in their family; more than 80% had siblings. Communication with fathers was described as “easy” in only 44% of cases for 15-year-old girls and with mothers in 75% for the 15-year-old boys. A lack of communication appears to be the result of socioeconomic factors (working migration, heavy workload of parents), and in some cases poor parenting practice, as well as national preference for sons.

**School.** Sixty-three percent of 15-year-old girls and 45% of 15-year-old boys liked school “a lot.” This indicator is among the highest in the European HBSC survey.30 However, cases of verbal punishment by teachers were reported in the schools, especially among 11-year-olds.

**Eating Behavior.** Fifty-five percent of adolescents ate sweets more than once a day, and 32% consumed soft drinks at least once every day. One-half of children skipped breakfast. Most of them thought that their weight was “close to being right,” but 11% believed that they were “a bit thin” or “too thin” and 15% “a bit fat” or “too fat.” This data corresponded with data on nutritional status of adults where 14% of males and 30% of females are assessed as obese.4,15

**Physical Activities.** The level of physical activities was low. Seventy-three percent of adolescents watched television for 2 hours or more during weekdays and 76% during weekends. The current school curriculum requires that at least 3 classes per week of physical education must be offered for school children of different grades, but implementation of this guideline was limited by a lack of facilities, equipment, and teaching staff. In the cities, there was a lack of places for children to play and to take part in physical activities. Overall, physical activities of adolescents are largely determined by social and other factors.31

**Electronic Media Communication.** Use of electronic media communication has increased faster among young people and has become an integral part of their lives. One-half of interviewed adolescents reported having daily electronic media communication with friends.

**Risk Behavior**

**Tobacco and Alcohol Use.** Both the HBSC survey and Global Youth Tobacco Survey held in 200932 indicated a relatively low prevalence of smoking; only 6.1% boys and 1.2% girls were smokers, which was a lower prevalence than in most European countries. However, 70% of children reported living in households in which other family members smoked. Among 15-year-olds, 11% of girls and 27% of boys reported drinking alcohol at least once a week; this is low in comparison with other countries.30

**Sexual Experience.** Forty-five percent of 15-year-old boys surveyed claimed to have had sexual intercourse, although there may be an element of overreporting. The corresponding percentage was 2% for girls.29 According to WB data, adolescent pregnancy and birth rates were relatively low, with a trend to decrease further as illustrated by 74/1000 births in 1990, 62 in 1995, 40 in 2000, 30 in 2005, and 27 in 2012.3

**Violence.** The survey clearly identified a considerable prevalence of “hidden” violence among adolescents; 14% of children claimed that they had missed school within the previous 30 days because of fear of violence. Fifty-one percent of the boys and 6% of girls reported participation in a physical fight at least 3 times during the last year.

**Child Labor.** A survey undertaken by UNICEF showed that as many as 5% of children aged 7-18 years from urban and (especially) rural areas were regularly employed as child laborers because they were needed to help their parents work in areas such as farming or small trading businesses. This practice interfered with their education and health. The
survey on work-related injuries revealed such episodes in 60% of children.33

Life Satisfaction. Regardless of known socioeconomic difficulties, health complaints and other problems, an overall life satisfaction was reported by more than 91% of the respondents; this indicator was among the highest in Europe compared with the HBSC 2009/2010 survey.30,31

Health Care Practices
The National guidelines decree that every child should be thoroughly assessed by a family doctor or pediatrician before entering school at age 6 years, and, if required and available, be seen by other relevant specialists such as a surgeon, orthopedic surgeon, neurologist, or ophthalmologist.34 However, compliance with the guidelines has not yet been assessed and analyzed thoroughly.

Health care-seeking practices can be characterized as poorly established among adolescents. More than 25% of respondents reported that they never visited a dentist; 50% never visited a family doctor or pediatrician despite national guidelines stating that family doctors or pediatricians should check their health status at least yearly. The position of “adolescent doctor” has been re-established in some urban outpatient clinics, and one-quarter of all adolescents had consulted this physician. There is a strong need for comprehensive and confidential adolescent-friendly health services as well as for health promotion in this age group.35,36

Organization and Governance of Health Care System in Armenia

Structure
In 2015, the health system of Armenia comprises a network of state-owned, region-owned, and private health facilities (Figure 2). The overall style of governance is largely inherited from the Soviet era but adapted to some extent to the realities of a market economy. The MoH has overall responsibility for general policy and programs, planning, developing, distribution of state finances, and approval of standards of care. The Ministry’s activities are supported and implemented through additional agencies and units. The State Health Agency manages financial flows related to the Basic Benefit Package (BBP), provides money to health institutions based on preliminary (annual) agreements, gathers financial reports from institutions, and provides its own reports to the Ministry and Government. Two recently established agencies are responsible for licensing of different service providers and overall control (including quality control). The Center for Disease Control is responsible for control and prevention of both communicable and noncommunicable disease, including management of vaccinations. The Drug Agency certifies drugs and controls the pharmaceutical market. The National Institutes of Health gathers health information from all registered health units and forms annual statistical reports. It also provides support for developing policies, regulatory documents, and standards, including some clinical guidelines.

Out-patient care in rural areas is provided by recently retrained family doctors (former GPs [who served the adult population only] and pediatricians) working in city polyclinics or rural “ambulatories” normally located in some large villages. They also provide services for the people in surrounding smaller villages where the first contact person is a nurse or “feldsher” (senior nurse) who work in a health post. In the cities, most people are served by local “district” polyclinics. According to the national regulations, each parent has a right to make a choice of the PHC facility and doctor; however, in the majority of cases, the prevailing factor in such a decision is proximity (ie, patients are served by local facilities and physicians are responsible for their area of residence).

The polyclinic’s health care staff includes GPs, “therapeutists,” and pediatricians who have a defined population under their care. Particularly, in the case of the pediatrician, the size of served children’s population (age 0-18 years) varies from 600-1200 depending on such factors as location and availability of pediatricians.

In the past, many polyclinics were “purely” pediatric but, because of on-going reforms, many of them have joined with general polyclinics. In addition to generalists and pediatricians, some subspecialists such as neurologists or ophthalmologists also work in the polyclinics. Recently, some new private clinics have also started providing outpatient care to both adults and children. Gynecologic care and follow-up for pregnant women is mainly provided by the outpatient units of maternity services. In provinces, hospital care is provided by municipal (general) hospitals, which have pediatric departments or in the smallest hospitals have pediatric beds in general departments. There are hospitals in the capital city of Yerevan that provide a full range of services. In addition to hospital care, many of these hospitals provide consultative specialist care. Some specialized services, such as psychiatric and HIV control and treatment, were inherited from Soviet era and function independently as separate units.14

The average length of stay in hospitals in Armenia is shorter than in most European countries. Starting from a position equal to other post-Soviet countries and much longer than in Western Europe, the length of stay has substantially declined and more and less equal to the figures reported in the West. According to the WHO database, average length of stay for all hospitals in Armenia is 8 days, and in EU countries, the average is 9 days and CIS average is 12 days (Figure 3).

Emergency services are free for any patient through a network of separate units equipped with emergency cars. This service has been modernized with new standards of emergency care introduced by the MoH in 2011.

A private sector of health services has emerged in different directions. All pharmacies and almost all dental services are now private. Many “old” hospitals in Yerevan were privatized and new private hospitals have been constructed especially during recent years. Private hospitals provide not only...
paid-for-services, but they can also provide services to the groups of population covered by the state BBP, particularly children. Many of the newly constructed laboratory and diagnostic services offer investigations previously unavailable in Armenia including immunologic and metabolic studies as well as new high-tech imaging (computed tomography, magnetic resonance imaging).

Health services are also under overall governance of other sectors than the MoH. Yerevan State Medical University and its hospitals and clinics as all other state universities are run by Ministry of Education and Science with nursing colleges also governed by this Ministry. Care centers and rehabilitation units are under the control of the Ministry of Labor and Social Affairs. The Ministry of Defense and Police has its own medical services.

Planning of a health system is somewhat complicated and depends on many factors such as size of the state budget, availability of the services and staff, interests of the private sector, and access to investment resources. Workforce planning is achieved through allocation of state resources to training programs of especially needed specialties, which are currently pediatricians and pathologists. Taking into consideration the lack of specialists in the provinces, university graduates from these areas have preferential paths for entering a particular residency.

The continuous medical education system of Armenia is divided into 2 parts. First, every health professional has to pass the official course of the Faculty of Post-Graduate Education of Medical University at least once every 5 years. Second, many international organizations (US Agency for

Figure 2. The structure of health care system of Armenia. Source: MoH of Armenia, http://moh.am/.

MoH

National Institute of Health (policy, information, standards)
State Health Agency (state finances)
State Hygiene and Anti-Epidemic Inspection
Drug and Technology Scientific Expertise Center
State Health Inspectorate (quality control)
State Health License Agency

Tertiary care hospitals and centers
Regional municipal hospitals
Polyclinics (out-patient multi-disciplinary units in cities)
Ambulatories (GP offices) in large villages
Nurse posts (in small villages)
Specialized services (psychiatry tuberculosis, HIV, emergency units)

Hospitals

Private sector

Out-patient clinics
Dental clinics
Pharmacies
Labs and other diagnostic services

Insurance companies
International Development, UNICEF, and WB) or organizations of Armenian Diaspora support staff training within the frameworks of the MoH or local programs. In recent years, some professional associations such as Armenian Pediatric Association have started to organize regular lectures and training in relevant fields involving both local and foreign specialists. To improve in-service training, the National Parliament and the MoH currently work on a law on continuous professional development, which will introduce a new model of credit system, an analog of the existing Western one.

One of the key problems within the health service is lack of clarity in the roles between the levels of health care, which creates fragmentation and inhibits integrated care from the perspective of families.

**Financing**

In the last 15 years, overall health expenditures per capita significantly increased (Table IV). Some progress is evident in allocations of governmental expenditures on health (eg, the percentage of total state expenditure on health in 2010 was 40.5%, and in 2000 it was 18.1%). The state health budget in 2012 was 64.5b AMD, 41% was allocated to hospital services, 36% to hospital services, and the remaining to the public health field. However, almost two-thirds of health finances come from other sources, particularly from prepaid out-of-pocket payments including those which are considered as “informal” payments (eg, cash paid directly to the staff).

In general, the level of health care financing in Armenia is fourth from last place in the European region. According to the WHO database “Health for all,” Armenia has worse indicators than the average of CIS, EU, and European region of WHO (Figure 4).

During the Soviet era and following independence, mother and child health care has been a priority in Armenia. Currently, the State finances the following services for children and adolescents: (1) free obstetric services for all pregnant women and neonates including regular check-ups, delivery, and postnatal care for both mother and child; (2) outpatient services for children 0–18 years of age provided by the local polyclinics and ambulatories (where child is “registered”) (ie, regular check-ups at home or/and at facility [6 times during first year of life, 2 times during second year], vaccinations according to the national immunization calendar, consultations at outpatient facilities, or home visits for acute diseases)—the State pays the health facilities approximately 15 Euro per child per year; (3) some outpatient laboratory and diagnostic services; (4) medications to certain groups of population, however, most of drugs are paid for by care recipients in cash; (5) emergency admissions for all children; (6) inpatient services for all children 0–7 years of age and for the children of socially-vulnerable groups (certified by Government as having low family income) 0–18 years of age; (7) some services and medicines for children with chronic health conditions (eg, diabetes, epilepsy, arthritis) provided by special follow-up national centers (usually those are licensed by the MoH units within large hospitals) or by policlinics; (8) some inpatient and outpatient rehabilitation and recreation services for children with developmental problems/disability (eg, cerebral palsy, autism); and (9) emergency outreach services for providing special assistance to the patients from provinces, which need specialized care not available at local level.

**Physical and Human Resources**

The main findings relating to human and physical resources of health system of Armenia are presented in Table V. While considering these figures, especially per capita figures, some factors must be taken into consideration. First, both the country’s population and birth rate decreased over the last 2 decades. Second, the health system went through series of reforms whereby some units (hospital, outpatient facilities) were closed while some others units were merged. Also, some completely new private hospitals and outpatient offices were opened.

Currently, inpatient services are provided by 4 children’s hospitals (3 are located in the capital and 1 in the city of Gyumri) and approximately 40 pediatric departments in the general district hospitals. Overall, the total number of beds, including pediatric beds, in Armenia has decreased significantly and the number of beds currently is less than in most countries of Europe (Figure 5). This is explained by the fact that it was common practice in the Soviet era to admit patients with moderate and even mild forms of diseases to hospital. Since the mid-1990s, practices have

**Table IV. Financing of health sector in Armenia**

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<tbody>
<tr>
<td>Health expenditure per capita (current US $)</td>
<td>26</td>
<td>39</td>
<td>85</td>
<td>150</td>
</tr>
<tr>
<td>Health expenditure, public (% of total health expenditure)</td>
<td>31.1</td>
<td>18.2</td>
<td>36.3</td>
<td>41.8</td>
</tr>
<tr>
<td>Health expenditure, total (% of GDP)</td>
<td>6.4</td>
<td>6.3</td>
<td>5.3</td>
<td>4.5</td>
</tr>
</tbody>
</table>

changed significantly, mainly as a result of the implementation of WHO/UNICEF-supported programs for control of ARI and acute diarrhea. A study in 3 rural areas showed that the number of admissions decreased by one-half between the early 1990s and early 2000s.18

In 2012, the overall number of pediatricians and pediatric subspecialists was 960. This is one-half the number since the time of the collapse of Soviet Union. However, because of the decrease in child birth rate and emigration, the number of child health specialists per 10,000 children has remained almost the same.37

Services for the children with neurodevelopment disorders are provided by 2 large specialized centers in the capital and 7 centers located in the provinces. In addition, services are provided by few other centers acting under the umbrella of nongovernmental organizations.

**Provision of Services for Children and Adolescents**

Child health care services in Armenia are provided in PHC and hospital facilities. Specialized (secondary-level) outpatient services are currently provided by subspecialists in either the polyclinic or by hospital physicians. Most hospitals provide both inpatient and outpatient services. All PHC services are provided free of charge and are included in BBP.

Child public health care services are under the centralized supervision of the MoH. PHC facilities provide health screening, immunizations, as well as consultations and identification of communicable diseases among registered children in their districts according to the standards approved by the MoH.

Gynecologists from maternity units work in polyclinics and are responsible for basic screening of the pregnant women according to the approved MoH standards. Women from high-risk groups are screened for toxoplasmosis, rubella, cytomegalovirus, and herpes infections. Almost 100% of Armenian children are born in maternity units. All of these units have neonatal services. However, there is a lack of neonatologists in many provinces, and neonatal care is provided by pediatricians who are not always specialists in neonatal intensive care. Neonatal services in maternity

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**Table V. Human and physical resources of health services of Armenia**

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<tbody>
<tr>
<td>Total number of outpatient facilities*</td>
<td>772</td>
<td>896</td>
<td>704</td>
<td>894</td>
</tr>
<tr>
<td>Number of institutions, providing inpatient care</td>
<td>183</td>
<td>146</td>
<td>145</td>
<td>129</td>
</tr>
<tr>
<td>Number of hospital beds</td>
<td>28,711</td>
<td>29,795</td>
<td>14,353</td>
<td>12,268</td>
</tr>
<tr>
<td>Number of hospital beds (per 10,000 population)</td>
<td>76.2</td>
<td>54.7</td>
<td>44.6</td>
<td>40.7</td>
</tr>
<tr>
<td>Number of hospital beds for children</td>
<td>3751</td>
<td>3039</td>
<td>1683</td>
<td>1189</td>
</tr>
<tr>
<td>Number of hospital beds for children (per 10,000 children)</td>
<td>35.3</td>
<td>34.8</td>
<td>25.3</td>
<td>20.6</td>
</tr>
<tr>
<td>Number of physicians of all medical specialties</td>
<td>12,657</td>
<td>12,270</td>
<td>12,307</td>
<td>12,664</td>
</tr>
<tr>
<td>Number of physicians of all medical specialties (per 10,000 population)</td>
<td>33.7</td>
<td>32.3</td>
<td>38.2</td>
<td>42.0</td>
</tr>
<tr>
<td>Number of pediatricians†</td>
<td>1839</td>
<td>1549</td>
<td>1286</td>
<td>934</td>
</tr>
<tr>
<td>Number of pediatricians per 1000 children up to 14 y</td>
<td>1.73</td>
<td>1.78</td>
<td>1.94</td>
<td>1.62</td>
</tr>
<tr>
<td>Number of nurses</td>
<td>31,324</td>
<td>22,632</td>
<td>18,364</td>
<td>18,426</td>
</tr>
<tr>
<td>Number of nurses of all specialties per 10,000 people including children</td>
<td>83.3</td>
<td>59.5</td>
<td>57.0</td>
<td>60.9</td>
</tr>
</tbody>
</table>

*Including general polyclinics, children’s polyclinics in cities, “ambulatories,” and nursing posts (which are located in villages), “women’s” consultations, and private offices, etc.

†Including pediatric subspecialties.

Source: National Statistic Service of Armenia and Reports of National Institutes of Health.
hospitals provide neonatal screening for congenital hypothyroidism, phenylketonuria, hearing disability, and hip dislocation under the direct supervision of the specialized centers and the MoH.

The first contact point for a pediatric patient is usually a PHC provider who is family doctor or pediatrician in cities and large villages and a nurse in smaller villages. Local pediatricians or GPs providing medical services are responsible for healthy child care such as growth and development assessment, immunization against vaccine-preventable disease, ordering laboratory and other investigations, treatment of the most common childhood diseases, screening and assessment of adolescents, and referral of children to other medical facilities. PHC physicians also perform home visits, but in some remote areas, there are problems with both local transportation and financial reimbursement. Every PHC physician has to work 7 hours daily, spending one-half of this time within a facility and visiting patients at home during the remainder of the time. Therefore, each facility provides consultancy on weekdays until 6:00 p.m. On Saturdays, these clinics are open until noon only; they do not open on Sundays. In 2006, PHC services became free of charge for the entire population regardless of age and social status (except for dental care, which is free for the socially-vulnerable groups and children under age 8 years); the average annual number of PHC visits per person increased from 2.1 in 2003 to 2.9 in 2006. However, taking into account that PHC provider has no gatekeeping function, the overall utilization of medical services at the primary level and its quality are not high. In many cases, patients do not trust their PHC providers and prefer to apply directly to specialized hospitals facilities.

Inpatient services are provided by municipal and/or regional hospitals, as well as by the hospitals in Yerevan. Tertiary care level services are centralized only in the capital city. The hospital for special infectious diseases provides inpatient care for children with specific communicable diseases such as tuberculosis and AIDS.

In 2011, access to hospital services was made much easier. Therefore, utilization of outpatient services has significantly decreased and hospital consultations significantly increased to the point where there were major concerns about PHC gatekeeping functions and hospital capacity to meet the ever increasing demands. Most polyclinics or ambulatories have limited facilities for laboratory and other diagnostics.

There is a severe shortage of pediatric subspecialists (eg, neurologists) in many provincial areas. Therefore, most children with potentially serious and chronic diseases/conditions are referred to higher level of health care for their diagnosis and treatment. Usually referral is done within few days, and it does not take long to see a specialist. Some longer queues exist for planned surgery but not for urgent cases because this service is paid for by the Government. Large hospitals provide specialized care for children with long-term conditions or chronic diseases. After confirmation of a diagnosis, they provide mostly free follow-up care for the children up to age 18 years, and in some of these centers (eg, epilepsy, familial Mediterranean fever, diabetes) they also provide free medications under financing from the state or charity organizations. Patients are required to visit their doctor for annual check-ups and receive their medication.

At the PHC level, sick children from socially-disadvantaged groups are also given free medication, but the list is very limited (eg, oral rehydration solution, antipyretics). There are few facilities available for the children with neurodevelopmental disorders. Historically, these services were provided on an inpatient basis only. As a result of cooperation and lessons learned from European and North American partners, a large outpatient unit providing multidisciplinary rehabilitation and day care services was established in the late 1990s; since 2003, 7 branches have been established in the provinces to improve access for children of the provinces.
Currently, a model of community-based rehabilitation is being introduced in some areas.

During the last decade, Armenia has adopted the concept of inclusive education for children with functional impairments. According to the governmental plan, the network of schools has expanded countrywide. However, much has to be done to achieve full inclusion and to provide equal opportunities for all disabled children.33

Adolescent health services existed in Soviet times mainly concentrating on the health of future recruits for the Soviet army. Since the mid-2000s, a model of adolescent-friendly health services has been introduced under the support of the WHO, UNICEF, and United Nations Population Fund.35 Currently, the project on integration of adolescent health services, school health services, schools, and social services is on track.

Not only for children, but also for adults, palliative care is at a very early stage of development. The concept of introducing pediatric palliative care is under development.

Mental health care is provided by formal structures of the health system including psychiatric centers, some pediatric hospitals, and polyclinics, as well as in some psychologists’ offices. Overall, the concept of mental health care for children is not well developed; many interventions are fragmented and controversial.30

The state finances screening of children for dental problems but does not finance the follow-up treatment. This results in late referrals and a high prevalence of dental problems among children and adolescents.

Safeguarding and Social Work Systems

Social care systems are underdeveloped in Armenia partly because of poor financing and understaffing. An institute of social workers and the principles of case management have been introduced, and a number of relevant specialists have been trained but still there is no well-developed system for community-based social care.

The system for the prevention of child abuse is not yet well-embedded into services. However, some elements are present at the level of all health, social, and educational institutions. In particular, all health facilities should report any case of unexplained mild-to-moderate trauma to the police, and all these cases are assessed by the police regarding the circumstances of the trauma.

De-institutionalization of care homes has created a number of community daycare centers, however, most of them are nongovernmental organizations-based and have no sustainable state financing. Alternative family- and community-based care services for children deprived of family life are insufficient because there are only a few foster families.41 There is a significant number of school-aged children dropping out of school for social reasons or because of work in informal sectors. Labor inspectors are not effective in controlling or reducing child labor.33 Currently, there is no shared and comprehensive database on social determinants of child health, but some cross-sectoral integrated management and information system for all child care and child protection data are beginning to be implemented and collecting data at local, regional, and national levels.

Major Health System Reforms

Since the collapse of Soviet Union, the Armenian health system has experienced a series of changes over the last 23 years, which cannot be explained in detail here. Major health reforms included the following.

- Transition from a centralized governing system to a decentralized, market-oriented system;
- Transition from a block contract finance system to payments based on per capita payments in PHC and cost per case financing in hospital care;
- Establishment of private inpatient and outpatient health facilities through privatization of existing centers and the construction of new ones;
- Introduction of basic health insurance since late-1990s;
- Transition from the mainly adult physician and pediatric system to a GP-based system. This transition was very strongly supported, both politically and financially, by the WB and some other donors. It resulted in compulsory training of more than 1500 general therapists and pediatricians to become GPs. In many rural areas, the reforms led to very positive results. However, in urban areas, many former therapists still serve the adult population only and former pediatricians still serve children only37;
- Introduction of prepaid services. Following the introduction of market principles, different prepaid services were introduced and easy access to services was formally declared. In reality, it caused uncertainty among both care recipients and care providers and resulted in less easy access for some more vulnerable groups of population. To overcome this and reduce inequities, the concept of a “birth certificate” was initiated by the MoH in 2008 and a “child certificate” in 2011. Both guaranteed the right of any pregnant woman and any child (aged 0-7 years) to free hospital care;
- The basics of “youth-friendly” approaches were introduced from 2006 in some health institutions.36

Assessments of the Health System

Different assessments of the health care system’s performance have been undertaken since the independence of Armenia.12 However, these were often fragmented studies; none achieved a comprehensive assessment of the quality of child health care including the examination of patient-reported outcome measures. WHO undertook studies on the quality of care for sick children in hospitals to reduce the high rate of admissions to hospital, overuse of antibiotics and intravenous infusions.22 In 2013, a study in 9 hospitals showed that unnecessary usage of antibiotics decreased especially in cases of diarrhea. In about 70% of cases, admissions to hospitals were done in accordance with the existing national recommendations, which are mainly based on WHO recommendations.17
There are problems in the timely detection of developmental problems in children. A survey of children with developmental problems undertaken in 11 communities in one of the Armenian regions showed that regardless of existing recommendations, in about one-half of the cases, assessment of psychosocial development was either not done in time or in a proper manner. This resulted in late detection of existing developmental delay or disorder and in late intervention with possibly worse outcomes.25

In the last decade, the quality of care for children with chronic disease has significantly improved, particularly because of the development of special units for asthma, diabetes, familial Mediterranean fever, and rheumatic diseases. These centers provide direct care as well as clinical guidelines for other care providers.38

Conclusions and Lessons Learned

The health status of children and adolescents in Armenia is influenced by various social, economic, cultural, educational, and environmental factors. The most crucial factors are slow economic growth, high prevalence of poverty, and lack of financial allocation for social care sectors and health services. Although some health determinants still play a negative role, others are positive “assets” for health promotion. These include a high overall literacy rate as well as relatively good sanitation and the existence of health facilities in almost all communities with relatively easy access to health services for the children. This is confirmed by the fact that Armenian’s child mortality rate is 50% less than the rates found in countries with the same level of GDP.

Armenia is a country in rapid transition, and, consequently, Armenian pediatricians have to meet the challenges of both developed and developing countries. Despite significant decrease, child mortality still is higher than in most countries of Europe, and further efforts should be implemented including a focus on both neonatal and postnatal mortality. There are nutritional problems such as lack of nutritious food for some children (as in developing countries) and simultaneously an increasing prevalence of overweight (as in developed countries). There are poor outdoor and indoor environments, inadequate status of many schools, and sedentary behaviors coupled with lack of physical activity among school-aged children and adolescents.

Overall, performance of the child and adolescent health care systems is relatively adequate, given the current situation and allocated resources. Child mortality rate is declining slowly, and immunization rates are among the highest in Europe. The treatment of common child diseases has improved and the likelihood of antibiotic overtreatment has decreased. Management of chronic diseases is relatively consistent. New practices of tackling child disability and developmental problems have been introduced. Adolescent and school health services are prioritized conceptually, and few pilot programs are on the track.

One of key current challenges within the pediatric health system is establishing a balance between outpatient and inpatient care. Since the mid-1990s, the practice of hospital treatment was reverted and length of stay in hospital significantly reduced. However, the practice of easy access to the hospital care again led to increasing numbers of admissions, which may have decreased mortality. However, in almost 1 in 3 cases, the admission may have been unnecessary and may have caused unnecessary financial and organizational difficulties for hospitals. At the same time, it may have also negatively affected the competence of PHC physicians as they may have lost skills because of being involved in treatment of moderately severe childhood diseases. Further efforts should be implemented to improve current practices and improve collaboration between the 2 levels of health care and to fill the gaps.

Armenia inherited from the Soviet era the Semashko model of completely state-controlled and owned health system as well as the Soviet-style institutions. To some extent, the system and all its elements, especially at a primary care level, still function and play an important role in achieving positive results (ie, immunizations). However, Armenia is among the countries that are under pressure from international organizations (mainly the WB) to change the health system by introducing the concept of family medicine where it is anticipated that only family doctors will work at a primary level. This has resulted in dual outcomes. In rural areas (where, even in the past Soviet days, most children were served by 1 pediatrician), improved training was essential, but in urban areas, it led to controversial results. Many urban pediatricians were retrained as GPs, but in fact, many continued to serve only children, and “adult” physicians avoided treating children. Many parents preferred to consult physicians with a pediatric background. Recently, the MoH reassessed the situation and in contrast to some previous decisions, recognized the fact that in urban areas, children can be managed by primary care pediatricians and, even if GPs provide services, the staff of polyclinics should be strengthened by consultant pediatricians who will provide professional assistance to the polyclinic’s family doctors. Therefore, the lesson of Armenia is that the structure of pediatric care system should be built in a way that it is based on historical background, cultural perceptions, availability of staff and resources, and not forced into new “artificial” structure proposed by outside factors.

The greatest success for Armenian pediatricians is related to the rational introduction of modern international approaches. At first, locally adapted versions of WHO programs have been implemented and have led to measurable positive outcomes. From another perspective, learning across borders and sharing the lessons provided by the colleagues from the West has made a significant difference in improving pediatric practice. This pertains to the clinical aspects, as well as the organization aspects of care, throughout the health care system for the benefit of children and families.
Author Disclosures

The authors declare no conflicts of interest.

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