

American University of Armenia
Center for Health Services Research

**National Report on the
Follow-up to the UNICEF
World Summit for Children
1990-2000**

**Technical Support to the
Ministry of Health, Republic of Armenia
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Preface

This report represents a collaborative effort between the Ministry of Health of the Republic of Armenia and the Center for Health Services Research (CHSR) in synthesizing and assessing the available data needed for this report to UNICEF regarding progress toward the World Summit for Children goals for 2000. While this report represents the work of many, the following individuals need to be recognized for their contribution. These individuals actively participated in the preparation of the final report by providing data and/or reviewing, revising, and editing the various drafts for technical content and conformity with the reporting process outlined by UNICEF.

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Since its independence, Armenia has reorganized its political/demographic units from administrative “districts” into Marzes. Modern Armenia consists of 11 such Marzes as depicted in Figure 1.2. The capital, Yerevan is the smallest yet most populated Marz. The Marzes represent great variations in size, population, and climate ranging from rugged mountains (90% of Armenia lies above 1000m) to high plains. The northwestern portion of the country is especially prone to earthquakes, as evidenced by the devastating 1988 earthquake.

Figure 1.2 Map of the Republic of Armenia, by Marz



Like many of the Newly Independent States of the former Soviet Union, Armenia suffered tremendous disruption to its economy since declaring its independence. Living standards regressed dramatically in the years immediately following independence and are only slowly recovering and only for segments of the population. These social and economic problems were aggravated by conflict with Azerbaijan over the territory of Nagorno-Karabagh and the lingering effects of the 1988 earthquake.

The socio-economic turmoil has negatively impacted on the health status of the population, with particular impact on disadvantaged populations including women and children. During the Soviet period, Armenia enjoyed some of the highest health indicators in the Soviet Union. The

economic collapse brought with it the collapse of the primary health care system. Consequently, many of the ills associated with developing countries such as vaccine preventable diseases began to reemerge. Targeted efforts by the Ministry of Health with support from international organizations, including UNICEF, have stemmed or reversed many of these trends.

The Ministry of Health has prioritized reinventing and reinvesting in primary health care for the coming years. A number of donor-supported projects are currently being implemented with the goal of optimizing and rationalizing a health care system based on primary care and family medicine, replacing the bankrupt clinical/curative emphasis passed on from the Soviet period.

Given these circumstances, surveillance systems and data reporting systems have functioned to varying degrees of success over the past decade. Where the data do exist, the data, too, reflect the process of transition as definitions for conditions evolve from Soviet-era definitions and practice toward generally accepted global definitions. While the implementation of consistent definitions is praiseworthy, it makes the task of interpreting trends during this period very tenuous.

This report attempts to synthesize and reconcile available official national, regional, and local data with international reporting requirements. Due to the paucity of credible, official national-level data, this effort involves a careful examination of official data and corroborating data from surveys and other sources in the context of evolving definitions and disparities in their adoption.

2. Methods

This report represents a synthesis of existing, published data. Where possible, official sources are cited. Official sources are supplemented with studies, narratives, and other assessments related to the requested indicator. The supplemental material is intended to characterize the robustness of the official data and expand upon differences among subpopulations/at-risk groups.

Existing data for each goal and indicator was collected, synthesized and assembled into a draft report by CHSR staff with the assistance of UNICEF and the Ministry of Health. Technical consultants, typically those most knowledgeable with the collection and reporting of data in that particular area, were provided a rough outline and requested to incorporate additional data and comments into an evolving draft report.

CHSR staff then collated and edited the rough drafts of each goal into the final document. Senior Ministry of Health and local UNICEF officials then reviewed each draft for completeness, accuracy, and compliance with the protocol put forth by UNICEF for this report. This final report represents the coordinated efforts of the Ministry of Health supported by the Center for Health Services Research of the American University of Armenia and the Yerevan office of UNICEF.

The presentation and assessment of each goal follows a similar structural design:

1. Definitions/Indicators
2. Data Sources
3. Trends
4. Disparities
5. Data Quality/Limitations
6. Comments/Conclusion
7. References

For each goal, the conclusion includes a qualitative assessment of compliance. The qualitative assessments used are: “clearly met,” “substantially met,” “partially met,” “substantially unmet,” “clearly unmet,” and “unable to assess.”

A summary table of all goals is provided at the end of the report, as is a composite bibliography.

3. Progress Of Armenia: World Summit For Children Goals 2000

Goal 1. Mortality Rates: Infant and Under 5

- World Summit Goal: Between 1990 and the year 2000, reduction of infant and under-five mortality rate by one-third or to 50 and 70 per 1000 live births respectively, whichever is less.
- Indicators:
 - ✓ Infant Mortality Rate - probability of dying between birth and exactly one-year of age, per 1000 live births
 - ✓ Under-five Mortality Rate - probability of dying between birth and exactly five-years of age, per 1000 live births
- Target for Armenia:
 - To reach infant mortality rate of 12.3 (by official definition) or 16.0 (by WHO definition)
 - To reach under-five mortality rate of 15.9 (by official definition) or 19.6 (by WHO definition)

1. Definitions/Indicators

Data on infant mortality in Armenia is available from official vital statistics registry. The definition of infant mortality rate (IMR) used before 1995 was inconsistent with the World Health Organization (WHO) definition. The difference arises from use of a more stringent definition of live birth. According to the official definition used until 1995, only those newborns born after at least 28 weeks of gestation with a birth weight 1000g or more and who had drawn at least one breath were considered as live born. Infants born weighing less than 1,000 gram were not considered a live birth unless surviving for at least 7 days. In 1995, the WHO definition was adopted for reporting to the Ministry of Health. Thus, Ministry of Health from 1995 onward includes infants born less than 1,000g provided some signs of life were evident at birth (heart beat, breathing, etc.). The Ministry of Statistics data still excludes this group from its registry.

2. Data Sources

The Ministry of Statistics is the official source for this data and does not use the WHO definition. Limited data available from the Ministry of Health does utilize the WHO definition. Due to differing definitions, data from the Ministry of Statistics and the Ministry of Health are not always reconcilable.

A. Infant Mortality

3. Trends

The MOS data for IMR over the last decade is provided in Table 1.1 below. IMR experienced a consistent gradual decline between 1990-1999. The slight increase of the rates between 1995 and 1996 can be explained by the partial adoption of the WHO reporting definition of IMR within official statistics. Available evidence indicates that the new definition has not been fully implemented at all Maternity wards of the Republic.¹

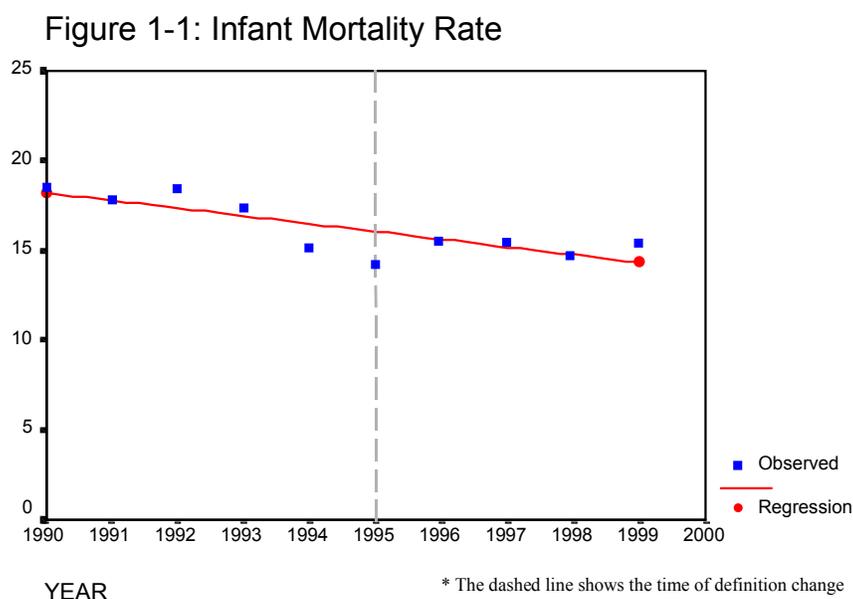
¹ It is possible to calculate the estimates of infant mortality according to WHO definition by adjusting the official rates. For this purpose I. N. Komarov's coefficient of 1.3 could be used, calculated with usage of a model that considers many other criteria and relations such as birthrate, birth-weight, relation between perinatal, neonatal and infant mortalities, etc. The adjusted estimate of IMR for 1990 will be 24.0, and for 1999 - approximately 20.1 per 1000 live births.

Table 1.1: Infant Mortality Rate in Armenia (1990-1999)

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total | 18.5 | 17.9 | 18.5 | 17.3 | 15.1 | 14.2 | 15.52 | 15.43 | 14.73 | 15.44 |
| Boys | 20.50 | 19.00 | 21.20 | 18.70 | 16.80 | 15.50 | 16.80 | 17.20 | 16.4 | 17.9 |
| Girls | 16.10 | 17.00 | 16.50 | 16.60 | 13.20 | 12.90 | 13.80 | 13.40 | 12.8 | 10.3 |

Sources: Ministry of Statistics of Armenia, Population Statistics, Women and Men in Armenia, 1999; Ministry of Health of Armenia, Statistical Collection, 1999; MOS State Registry and Analysis. Socio-economic Situation of RA, Information-analytical Report, January-December 1999, Yerevan, 2000

The change in IMR in Armenia over the last decade (1990-1999) is estimated via a regression line. Figure 1-1 shows a decline of 3.9 deaths per 1000 live births over the period to 14.3‰, equal to a reduction of 21.4%. However, the World Summit goal of reduction of infant mortality rate by one-third was not reached. The slight expansion of the definition of a live birth would lead to an artifactual increase in the IMR rate. As no evidence exists documenting the extent of the impact of the expanded definition, it is impossible to estimate the actual magnitude of the decline had a consistent definition been in place throughout the period.



4. Disparities

Despite comparable declines in both genders over the decade, the IMR for boys was consistently 20-25% higher than for girls (Table 1.1). This trend is consistent with other populations and can serve as an indirect evidence of the lack of discrimination against female infants.

A comparison of cause-specific structures of infant mortality over the decade shows that while the proportion of deaths caused by acute respiratory and diarrheal diseases decreased, an increase of proportionate mortality from perinatal causes and congenital malformations was observed (Table 1.2). The latter two were responsible for 46.5% of all infant deaths in 1990, while in 1999 this figure climbed to 61.9%. This trend emphasizes the importance of undertaking measures focused on the perinatal period for the future decreases in the overall infant mortality rate in Armenia.

Table 1.2: Cause-specific infant mortality in Armenia (1990, 1995, 1999)

| Cause of infant death | % of infant deaths caused by given condition | | |
|--------------------------|--|------|------|
| | 1990 | 1995 | 1999 |
| Perinatal causes | 33.0 | 38.4 | 40.4 |
| Congenital malformations | 13.5 | 16.3 | 21.5 |
| Respiratory infections | 25.9 | 21.8 | 21.0 |
| Diarrhea | 11.9 | 11.6 | 6.8 |
| Other | 15.7 | 11.9 | 10.3 |

Sources: Ministry of Health of Armenia;

A Situation Analysis of Children and Women in Armenia, Government of Armenia & UNICEF, 1994

Of note is that 58.9% of all infant deaths in 1999 occurred during the neonatal period (the first 28 days of life), and that 84% of all neonatal deaths occurred during the early neonatal period (the first 6 days of life). The major causes of neonatal deaths in 1999 are shown in Table 1.3.

According to these data, respiratory disorders (58.2%) and congenital malformations (26.4%) were responsible for the overwhelming majority of neonatal deaths (Table 1.3).

Table 1.3: Causal structure of neonatal (0-28 day) deaths in Armenia, 1999 (n= 337)

| Causes of neonatal deaths | Absolute numbers | Proportions (%) |
|---------------------------|------------------|-----------------|
| All causes | 337 | 100 |
| Respiratory disorders | 196 | 58.2 |
| Congenital malformations | 89 | 26.4 |
| Birth trauma | 25 | 7.4 |
| Hemolytic diseases | 8 | 2.4 |
| Other causes | 19 | 5.6 |

Source: Ministry of Health

According to Ministry of Health data, 64.4% (217 out of 337) of all neonatal deaths occurred in boys (while boys constituted 54% of all live births). This higher rate among males is consistently observed across populations. While the ratio of urban to rural population is 2:1, the ratio of urban to rural neonatal deaths was 3:1. Care must be taken in interpreting this finding, however, as early neonatal deaths are registered by the location of the death and not residence. As such, deaths occurring in urban specialty or referral hospitals are recorded as urban deaths.

Some regional disparities in infant mortality rates were observed. Table 1.4 shows that in 1999 the highest infant mortality rates (over 21‰) were registered in Vayots Dzor and Tavush, while the lowest IMRs were registered in Ararat and Kotayk (11.8‰ and 13.3‰ respectively). The marzes with lowest infant mortality rate were those closest to Yerevan, possibly indicating better access to specialty treatment in Yerevan and thus the shifting of death registration from those regions to Yerevan. According to Ministry of Statistics data, the 1999 infant mortality rate was 16.6‰ in urban areas and 14.7‰ in rural areas. This apparent paradox is most likely explained by the reporting practice for early neonatal deaths. Further studies on regional level deaths are needed before conclusions are drawn.

Table 1.4: Infant Mortality Rate By Marz, Armenia (1999)

| Marz | Infant Mortality Rate per 1000 |
|-----------------|-----------------------------------|
| Armenia (total) | 15.44 |
| Yerevan | 15.3 |
| Aragatsotn | 16.0 |
| Ararat | 11.8 |
| Armavir | 16.9 |
| Gegharkunik | 16.6 |
| Lori | 15.4 |
| Kotayk | 13.3 |
| Shirak | 16.2 |
| Syunik | 16.2 |
| Vayots Dzor | 21.9 |
| Tavush | 21.3 |

Source: Ministry of Health of Armenia, Statistical Collection, 1999

B. Under-five mortality rate

3. Trends

According to official vital statistics registries, there was a consistent gradual reduction of the under-five mortality rate in Armenia over the last decade with a possible upturn in 1999 (Table 1.5). For 1999 this rate was 19.2 per 1000 live births. As infant mortality is included in this rate, the previously described discrepancies between WHO and local definitions of infant mortality also influence this rate².

Table 1.5: Under-five Mortality Rate, Armenia (per 1000 live birth)

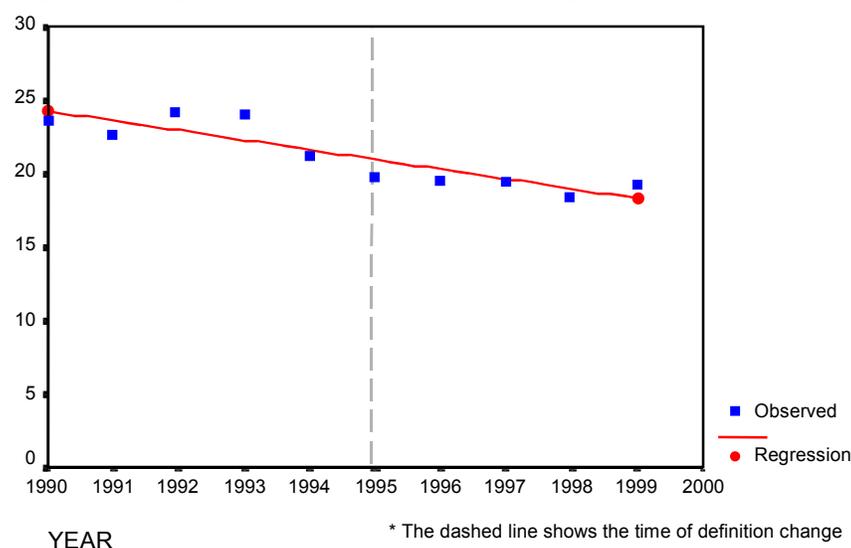
| 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|------|------|------|------|------|------|------|------|------|------|
| 23.8 | 22.6 | 24.2 | 24.1 | 21.3 | 19.9 | 19.5 | 19.5 | 18.4 | 19.2 |

Source: Ministry of Statistics, Republic of Armenia

The change in the under-five mortality rate for the period of 1990-99 is graphically shown in Figure 1-2. A regression line was used to estimate the change over the decade. The results show a decline of 6.0 per 1000 live births to 18.3‰, equal to reduction in the under-five mortality rate by 24.7%. Although this reduction is more than that in the infant mortality rate, it, too, is less than the World Summit goal of reduction of the under-five mortality rate by one-third.

An estimated adjustment to the WHO definition is calculated by replacing the infant mortality proportion with an adjusted infant mortality value. By doing this, we will have 29.3‰ under-five mortality rate for 1990, and 23.86‰ under-five mortality rate for 1999.

Figure 1-2: Dynamics of Under-Five Mortality Rate, 1990-1999



4. Disparities

In 1999, the under-five mortality rate was 20.8‰ in boys and 17.3‰ in girls. This difference is consistent with those observed in the infant mortality rate. In addition, the most frequent causes of death in children after infancy are injury and poisoning, which are more common in boys.

The main causes of under-five mortality in Armenia are: respiratory and infectious diseases; perinatal causes and congenital malformations; injuries and poisoning. During the last decade a considerable reduction of deaths in the 0-5 age group caused by respiratory and infectious diseases was observed. Meanwhile, as in the case with infant mortality, the proportion of deaths caused by perinatal conditions and congenital malformations showed a clear increasing trend (Table 1.6). It should be noted, however, that these conditions are more frequent reasons of death in infancy, while in the age category of 1-5 injuries and poisonings are the most common causes of death.

Table 1.6: Cause-specific under-five mortality in Armenia (1990, 1995, 1999)

| Cause of death | % of under-5 deaths caused by given condition | | |
|----------------------------|---|------|------|
| | 1990 | 1995 | 1999 |
| Infectious Diseases | 17.5 | 13.7 | 11.5 |
| Respiratory Diseases | 27.8 | 24.1 | 22.2 |
| Injury, poison | 10.5 | 12.3 | 4.8 |
| Congenital malformations | 11.8 | 13.9 | 19.9 |
| Perinatal causes and other | 32.4 | 36.0 | 41.6 |

Source: Ministry of Statistics, Armenia

According to Ministry of Health data, the under-five mortality rate for 1999 was 19.9‰ in urban areas and 18.2‰ in rural areas. There is no available data to assess regional differences in the under-five mortality rate, however, one may expect considerable discrepancies taking into consideration the existence of regional discrepancies in infant mortality rates, and the fact that infant mortality constitutes 80% of under-five mortality rate.

5. Data Quality/Limitations

The quality of birth and death registry data is generally perceived to be good. The data are limited by the inconsistent application of the revised definition for a live birth adopted in 1995, making interpretation of trend data difficult, as the impact of revising the definition cannot be fully taken into account.

6. Conclusion

Overall, both infant mortality and under-five mortality declined substantially over the decade (21.4% and 24.7%, respectively). A partially implemented change in definition may lead to an underestimation of the true decline in mortality. While laudable, these results fall somewhat short of the World Summit goals for these indicators.

Infant Mortality: Partially met

Under 5 Mortality: Partially met

7. References

1. *Women and Men in Armenia 1999*. Ministry of Statistics of Armenia. “Yotnagir”, “Lusabats-04” Publication Services, Yerevan, 1999.
2. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.
3. *Socio-economic Situation of the Republic of Armenia, January-December 1999, Information-Analytical Monthly Report*. Ministry of Statistics State Registry and Analysis. Yerevan, 2000.
4. Ministry of Health of Armenia (direct communication)
5. *Situation Analysis of Children and Women in Armenia*. Government of Armenia, UNICEF, 1994.
6. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.

Goal 2. Maternal Mortality Rate

- World Summit Goal: Between 1990 and the year 2000, reduction of maternal mortality rate by half
- Indicator:
 - ✓ Maternal Mortality Rate - Annual number of deaths of women from pregnancy related causes, when pregnant or within 42 days of termination of pregnancy, per 100,000 live births.
- Target for Armenia:
 - To reach maternal mortality rate of 16.3 (according to Ministry of Statistics average baseline rate for 1989-91) or 21.0 (according to Ministry of Health average baseline rate for 1998-99)

1. Definition/Indicators

The definition of maternal mortality rate (MMR) in Armenia is consistent with the WHO definition.

2. Data Sources

Registration of maternal deaths independently occurs in two different systems: Ministry of Statistics (MOS) and Ministry of Health (MOH). Civil Status Registration Departments are the primary source of information for the MOS registry. Health facilities provide information directly to the MOH.¹

3. Trends

Maternal mortality in Armenia appears to fluctuate widely from year to year and is best assessed via regression estimates. According to the MOS data, maternal mortality has increased by approximately 11.3% over the last decade (Figure 2.1) to 29.5 per 100,000 live births. Utilizing MOH data, however, yields a different conclusion. As shown in Figure 2.2, the rate appears to decline by nearly 31% over the decade to 28.3 per 100,000 live births. While the trends are in disagreement, they are converging and both indicate a current level above the stated goal.

Table 2.1: Maternal Mortality Rate in Armenia, 1990-1999 (per 100,000 live births)

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------|------|------|------|------|------|-------|------|------|-------|------|
| # of cases by MOS | 32 | 18 | 10 | 16 | 15 | 14 | 10 | 17 | 10 | 11 |
| MMR by MOS | 40.1 | 23.1 | 14.2 | 27.1 | 29.3 | 28.6 | 20.8 | 38.7 | 25.4 | 32.9 |
| # of cases by MOH | 43 | 29 | 16 | 24 | 19 | 13 | 15 | 17 | 9 | 13 |
| MMR by MOH | 53.8 | 37.2 | 22.7 | 40.6 | 37.2 | 26.6 | 31.2 | 38.7 | 22.5 | 34.9 |
| | 11 | 11 | 6 | 8 | 4 | - 1 | 5 | 0 | - 1 | 2 |
| Differences in MMR | 13.7 | 14.1 | 8.5 | 13.5 | 7.9 | - 8.1 | 10.4 | 0 | - 2.9 | 2.0 |

Sources: Health and Care of Public Health. Statistical Collection, Ministry of Health of Armenia, Armenia, 1999. (Primary source: MOS); A situation analysis of Children and Women in Armenia. Government of Armenia, UNICEF, SCF, 1999; & Ministry of Health of RA, Annual Reports

Figure 2-1: Maternal Mortality Rate, MOS

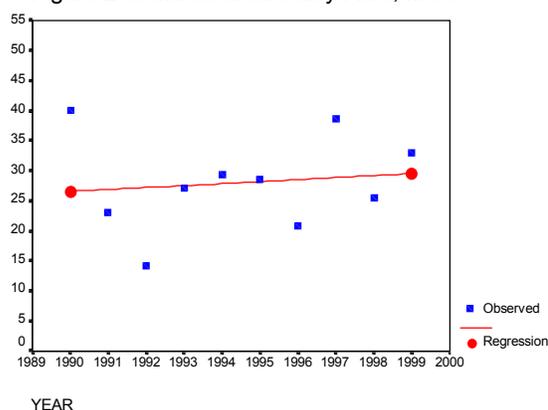
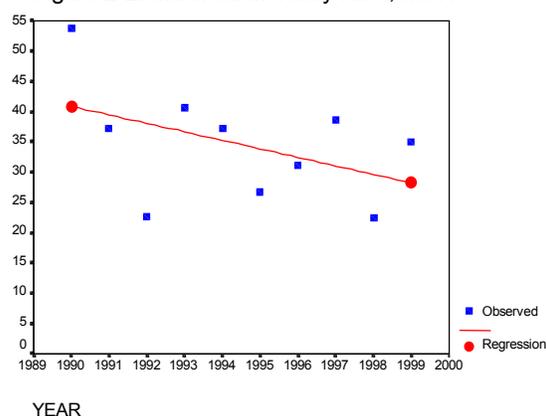


Figure 2-2: Maternal Mortality Rate, MOH



As maternal mortality varies widely from year to year, both the MOS and MOH have also reported a 3-year average rate since 1989. The average rates for the last decade are provided in table 2.2. Again the same differences between MOH and MOS data are evident, but data grouped in this way make the downward trend more evident and suggest most declines were achieved early in the decade with the latter half of the decade seeing little change.

Table 2.2: MMR grouped by three subsequent years, Armenia

| Average MMR | 1989 - 91 | 1992 - 94 | 1995 - 97 | 1998 – 99* |
|------------------|-----------|-----------|-----------|------------|
| According to MOS | 32.6 | 22.7 | 31.2 | 27.7 |
| According to MOH | 42.0 | 32.9 | 32.1 | 28.5 |

*- Data for 2000 is not available yet

Sources: Ministry of Health, Annual Reports & A situation analysis of Children and Women in Armenia.
 Government of Armenia, UNICEF, SCF, 1999

4. Disparities

Hemorrhages, hypertension disorders, abortions, extra-genital diseases and post-delivery sepsis are the most common causes of maternal deaths in Armenia. They account for almost three-fourths of all maternal deaths¹ (table 2.3). According to the “Situation Analysis of Children and Women in Armenia, 1998”, insufficient accessibility and quality of prenatal and hospital care services are mainly responsible for these conditions².

With respect of urban/rural differences, the rates based on Ministry of Statistics data fluctuate widely with little apparent pattern³ (table 2.4).

Table 2.3: Maternal Mortality by Cause, 1989-1999

| Cause | # of maternal deaths (% of total maternal deaths) | | | |
|-------------------------------|---|-----------|-----------|------------|
| | 1989 - 91 | 1992 - 94 | 1995 - 97 | 1998 - 99* |
| Hemorrhage | 32 (29.6) | 16 (27.1) | 10 (22.2) | 7 (31.8) |
| Hypertension disorders | 21 (19.4) | 11 (18.6) | 7 (15.6) | 4 (18.2) |
| Abortion | 16 (14.8) | 9 (15.3) | 5 (11.1) | 2 (9.1) |
| Extra-genital diseases | 14 (13.0) | 8 (13.6) | 13 (28.9) | 4 (18.2) |
| Post-delivery sepsis | 13 (12.0) | 6 (10.2) | 5 (11.1) | 2 (9.1) |
| Other | 12 (11.2) | 9 (15.2) | 5 (11.1) | 3 (13.7) |

*- Data for 2000 is not available yet

Sources: Ministry of Health, Annual Reports & A situation analysis of Children and Women in Armenia. Government of Armenia, UNICEF, SCF, 1998.

Table 2.4: Maternal mortality rate by urban and rural areas (per 100000 live birth)

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|-------|------|------|------|------|------|------|------|------|------|
| Urban | 27 | 18 | 37 | 43 | 41 | 31 | 34 | 25 | 16 |
| Rural | 17 | 8 | 13 | 9 | 25 | 5 | 47 | 27 | 18 |

Source: RA, Ministry of Statistics, State Register and Analysis, Women and Men in Armenia, 1999

Analysis of the causes of maternal mortality from 1991-1999 by Marz indicated a higher proportion of cases in Yerevan, Shirak and Lori (Table 2.5). This may be explained by the tertiary level obstetric services in these Marzes that serve as referral centers for high-risk deliveries from the surrounding areas.

Table 2.5: Proportion of Cases of Maternal Mortality by Marz, Armenia (1991-99)

| Marz | # of cases | Proportion of cases (%) |
|-----------------|------------|-------------------------|
| Armenia (total) | 155 | 100 |
| Yerevan | 65 | 41.9 |
| Aragatsotn | 1 | 0.6 |
| Ararat | 8 | 5.2 |
| Armavir | 8 | 5.2 |
| Gegharkunik | 8 | 5.2 |
| Lori | 17 | 10.9 |
| Kotayk | 12 | 7.7 |
| Shirak | 18 | 11.6 |
| Syunik | 4 | 2.7 |
| Vayots Dzor | 7 | 4.5 |
| Tavush | 7 | 4.5 |

Source: Ministry of Health of Armenia, Annual Reports

5. Data Quality/Limitations

Unfortunately, the numbers reported by the MOS and MOH systems significantly differ, with MOH usually reporting higher numbers of maternal deaths. Continuous efforts have been made through better communication between two ministries to address the problem of discrepancies in registration of maternal deaths. As a result, these discrepancies are gradually decreasing and the

statistics are converging² (table 1.6). Errors in filing out Death Registration Forms are considered one of the main reasons for this. If the word “pregnancy” is overlooked in transcribing this form, the Ministry of Statistics will not register the death as a maternal death. A special committee of Ministry of Health routinely reviews each case of maternal death, increasing the quality and consistency of the data. In this sense, the Ministry of Health is the more reliable source of information on maternal deaths;¹ however, the Ministry of Statistics is considered the official source of information for these data.

6. Comments/Conclusions

Although Ministry of Statistics’ official data shows an increase in maternal mortality rate over the decade, the more reliable Ministry of Health data, suggests the opposite trend. According to the MOH data, the maternal mortality rate decreased during the early 90s, and was relatively stable during the second half of the decade. There is increasing concern, however that the deteriorating health care system is leading to a renewed increase in maternal mortality. At this point in time, the data neither confirm nor contradict that assertion. What is clear, however, is that the World Summit goal for this indicator was not reached.

Maternal Mortality: Substantially unmet

7. References

1. Communication with Ministry of Health (Data from Ministry of Health annual reports)
2. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.
3. *Women and Men in Armenia 1999*. Ministry of Statistics of Armenia. “Yotnagir”, “Lusabats-04” Publication Services, Yerevan, 1999.
4. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.

Goal 3. Children: Underweight, Stunting, & Wasting Prevalence

- World Summit Goal: Between 1990 and the year 2000, reduction of severe and moderate malnutrition among under-five children by half
- Indicators:
 - ✓ Underweight prevalence: proportion of under-fives who fall below minus 2 and below minus 3 standard deviations from median weight for age of NCHS/WHO reference population
 - ✓ Stunting prevalence: proportion of under-fives below minus 2 and below minus 3 standard deviations from median height for age of NCHS/WHO reference population
 - ✓ Wasting prevalence: proportion of under-fives who fall below minus 2 and below minus 3 standard deviations from median weight for height of NCHS/WHO reference population
- Targets for Armenia:
 - No national baseline data is available
 - 3-4% falling above 2 standard deviations is considered the upper bounds for a normal population

1. Definitions/Indicators

Definitions for the key indicators in the under 5 population [stunting (low height-for-age), wasting (low weight-for-height) and underweight (low weight-for-age)] were consistent with the WHO definitions. The NCHS/WHO population served as a reference population.

2. Data Sources

Data sources were limited to a surveillance project of select Yerevan polyclinics (1993-1995)¹⁻² and a national study in 1998.³

The purpose of the Yerevan surveillance was to identify acute malnutrition among under-5 children and to define the trends of their nutritional status over time. Eight children's polyclinics, serving almost half of the children's population of Yerevan were involved in this surveillance. Anthropometric measurements were conducted for all children under five years old visiting the polyclinic during that period. Results were reported and analyzed.

The 1998 national study, the only national under-5 data available for the decade, was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

3. Trends

According to the results of the Yerevan surveillance, underweight and wasting prevalence among under-five children averaged less than 4% while stunting prevalence was consistently higher. As shown in Table 3.1, the observed prevalence of stunting exceeded the acceptable threshold of 3%, strongly suggesting chronic malnutrition and vitamin deficiency. Figure 3.1 presents this data graphically and projects a regression line over the period. A gradual decreasing trend of stunting is noticeable among the under-five population in Yerevan during the period of 1993-1998. The regression line projects an absolute 2.1% decrease of the stunting prevalence over the study

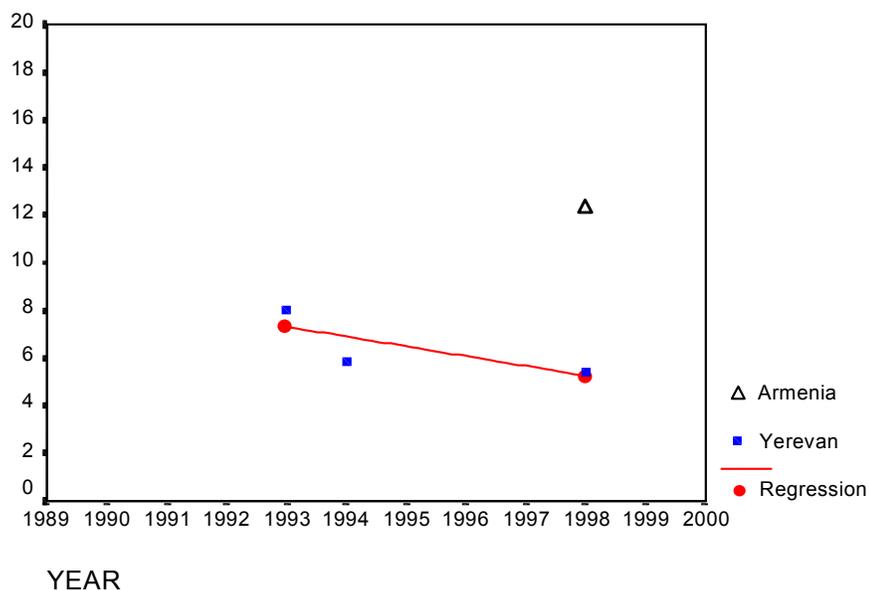
period (5.2% - 7.3%), equal to proportional decrease of 28.8%. When projecting this data over the decade, this decrease is estimated at 3.6% (4.8% - 8.4%), equal to a 42.9% proportional decrease.

Table 3.1: Nutritional Status of Children 3-59 Months in Yerevan, Pediatric Nutritional Surveillance System, 1993-1994

| Prevalence of: | 1993 (n = 9576) | 1994 (n = 27823) |
|----------------------------------|--------------------|---------------------|
| Underweight (Low Weight for Age) | 2.3% | 1.6% |
| Stunting (Low Height for Age) | 8.0% | 5.9% |
| Wasting (Low Weight for Height) | 1.2% | 0.6% |

Sources: Armenian Monthly Public Health Reports, Ministry of Health, RA, Annual Publications for 1993 and 1994.

Figure 3-1: Dynamics of stunting prevalence, Yerevan, 1993-1998



An even greater prevalence of stunting was observed in the 1998 national study. The proportion of under-five who fell more than 2 standard deviations below the median was 12.2% (95% CI - 9.3-15.1 (Table 3.2).

Table 3.2: Prevalence of Stunting (Low Height-for-Age) in Children 3-59 Months, Armenia, 1998

| | Height-for-age (%) | | |
|----------------------------------|--------------------|------------------|--------------|
| | < (- 3) SD | (- 3) – (- 2) SD | No stunting |
| Urban Residents (n = 791) | 4.05 | 5.97 | 90.01 |
| Rural Residents (n = 945) | 5.40 | 10.16 | 84.44 |
| Urban Refugees (n = 598) | 3.68 | 7.52 | 88.80 |
| Rural Refugees (n = 801) | 4.87 | 8.36 | 86.77 |
| Weighted Total (n = 3135) | 4.56 | 7.62 | 87.82 |

Source: Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

4. Disparities

The national study documented strong urban rural differences in stunting prevalence: 10.0% urban; 15.6% rural. In addition, striking differences were observed among the Marzes: Shirak, Gegharkunik, and Aragatsotn marzes were the most affected, while Lori, Tavoush and Yerevan were the least affected. Stunting prevalence was not significantly different by gender or by refugee status.

Similar variations were observed in the other anthropometric measures, with some subpopulations clearly exceeding acceptable limits. Wasting was 4% (95% CI – 3.1-5.1). No urban/rural differences were observed, but gender and regional variations were observed (Table 3.3). The proportion of children suffering from wasting was the largest in Syunik marz (12.2%), and the lowest in marzes Lori, Kotayk, and in Yerevan (all around 3%).

Table 3.3: Prevalence of Wasting (Low Weight-for-Height) in Children 3-59 Months, Armenia, 1998

| | Weight-for-Height (%) | | |
|--|-----------------------|------------------|--------------|
| | < (- 3) SD | (- 3) – (- 2) SD | No wasting |
| Urban Residents (n = 781) | 1.15 | 3.58 | 95.27 |
| Rural Residents (n = 961) | 0.62 | 2.50 | 96.88 |
| Urban Refugees (n = 601) | 0.82 | 3.12 | 96.06 |
| Rural Refugees (n = 810) | 0.49 | 3.42 | 96.09 |
| Weighted Total⁶ (n = 3165) | 0.92 | 3.17 | 95.91 |

Source: Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

Underweight prevalence was also 4%, which could be expected in a normal population. Slight variations were observed by gender and refugee status as well as strong variation among Marzes (table 3.4), with southern Marzes showing the highest prevalence (nearly 11%)

Table 3.4: Prevalence of Underweight (Low Weight-for-Age) in Children 3-59 months, Armenia, 1998

| | Weight-for-age (%) | | |
|--|--------------------|------------------|--------------|
| | < (- 3) SD | (- 3) – (- 2) SD | Normal |
| Urban Residents (n = 790) | 0.38 | 2.91 | 96.71 |
| Rural Residents (n = 966) | 0.61 | 4.10 | 95.29 |
| Urban Refugees (n = 611) | 1.62 | 2.91 | 95.48 |
| Rural Refugees (n = 826) | 1.20 | 3.72 | 95.08 |
| Weighted Total⁶ (n = 3193) | 0.55 | 3.36 | 96.10 |

Source: Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

These aggregate analyses, however, mask strong regional differences. As outlined in Table 3.5, a number of Marzes, especially the Southern Marzes, exceed the acceptable threshold for wasting and underweight prevalence in the under-five underweight population. These findings indicate the existence of serious problems with child nutrition in these Marzes.

Table 3.5: Wasting and Underweight Prevalence in children < 5 by Marzes, 1998

| Marzes of Armenia | Wasting Prevalence (%) | Underweight Prevalence (%) |
|------------------------|------------------------|----------------------------|
| Armenia (total) | 4.09 | 3.91 |
| Yerevan | 3.59 | 1.53 |
| Aragatsotn | - | 2.64 |
| Ararat | 3.41 | 3.07 |
| Armavir | 5.03 | 5.44 |
| Gegharkunik | 3.34 | 5.92 |
| Lori | 2.73 | 3.14 |
| Kotayk | 2.86 | 3.78 |
| Shirak | 4.50 | 5.62 |
| Syunik | 12.37 | 11.42 |
| Vayots Dzor | 4.45 | 11.53 |
| Tavush | 5.82 | 2.64 |

Source: Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

5. Data Quality/Limitations

As one-third to one-half of the population resides in Yerevan, the Yerevan study reflects a unique, though quite large, subpopulation of Armenia. As such, care must be taken in using this data as a surrogate for population data. This limitation is demonstrated by the 1998 national data that consistently shows wide variation in the indicators across marzes and urban/rural populations. While the national study had several methodologic limitations, none would cast doubt on the magnitude of the findings. Based on the national study, the Yerevan only data can best be considered the lower bounds for the corresponding national data.

6. Comments/Conclusion

Nationally, stunting appears to be a significant concern, while wasting and underweight among under-five children generally fall within acceptable ranges except in specific Marzes. This indicates the general absence of severe malnutrition and the presence of chronic moderate malnutrition. Specific attention should be focused on nutritional status in the Southern Marzes.

While one-third of the population does reside in Yerevan, the regression projection for the Yerevan only data approaches the World Summit goal of reduction of moderate malnutrition by 50%. The projection is severely limited in its generalizability. It is not likely to be indicative of the entire decade or as representative of the entire country. More emphasis should be placed on the single national study that indicates that stunting is a serious problem

Furthermore, preliminary indications are that a soon to be released year 2000 nutritional assessment report similar to the one conducted in 1998 will reveal significant increases in each of the 3 anthropometric indicators.

Underweight: Partially met [significant regional variations]

Stunting: Clearly not met [unable to assess decline; current level is not acceptable]

Wasting: Partially met [significant regional variations]

7. References

1. Armenian Monthly Public Health Reports, Emergency Public Health Information Surveillance System, 1993, No. 14 (annual).
2. Armenian Monthly Public Health Reports, Emergency Public Health Information Surveillance System, 1994 (annual).
3. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.

Goal 4. Universal Access to Safe Drinking Water

- World Summit Goal: Universal access to safe drinking water
- Indicators:
 - ✓ Use of improved drinking water sources: proportion of population who use any of the following types of water supply for drinking: 1) piped water to household; 2) public standpipe tap; 3) borehole/pump; 4) protected well; 5) protected spring; 6) rainwater

1. Definitions/Indicators

Standard definitions for categorizing drinking water sources were used throughout this period.

2. Data Sources

The Ministry of Statistics provides limited data regarding drinking water. Due to the ongoing economic crisis, water quality monitoring and surveillance data is virtually non-existent. During this period there were several studies that collected data regarding water supply and water quality

3. Trends

According to the Ministry of Statistics,¹ 86% of the population had access to drinking water in 1998. Consistent with this report, a nationally representative survey focusing on nutrition and carried out on 2 627 households in 1998² revealed that 81.2% of the population was served by piped water. The Ministry of Statistics reported an 11% coverage gain by 1999 without indication of how this improved coverage was achieved in such a short period. No data were available from earlier in the decade.

With respect to water quality, a 1995 investigation of Yerevan's drinking water quality, (39 water samples from its 8 districts)³ revealed that the water in Yerevan contained several contaminants, including microorganisms, and exceeded the maximum contaminant levels of the US Environmental Protection Agency and GOST (the standards under the former USSR). The analysis also revealed that fluoride levels were well below recommended levels.

4. Disparities

As expected, access to drinking water was highest in urban area (97% versus 58%). Refugees in rural areas had the least access with 39%. Over one-fifth of rural residents and one-third of rural refugees were using unprotected water sources (table 4.1).

Table 4.1: Sources of drinking water by population strata, 1998

| | Piped-in dwelling | Public tap | Tube borehole | Protected spring | Unprotected spring/well | River/Stream | Other |
|-----------------------------------|-------------------|-------------|---------------|------------------|-------------------------|--------------|-------------|
| Urban residents | 97.3% | - | - | 2.1% | 0.3% | - | 0.3% |
| Rural residents | 57.9% | 1.2% | 5.0% | 12.4% | 21.3% | 0.3% | 1.9% |
| Urban refugees | 78.9% | - | 0.6% | 14.5% | 5.8% | - | 0.2% |
| Rural refugees | 39.2% | 10.3% | 6.6% | 11.4% | 30.8% | 0.2% | 1.5% |
| Weighted Total⁶ | 81.2% | 0.8% | 1.9% | 6.3% | 8.7% | 0.1% | 1.0% |

Source: Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

Although physical access to water was high for urban dwellers, the water supply was not continuous. Only 18% of urban residents and 45% of rural residents reported a constant water supply (table 4.2). While the majority had water for at least a few hours everyday, 25 percent had water only each second or third day (or less frequently).

Table 4.2: Frequency of Household Water Distribution by Population Strata, 1998

| | Constantly | Every Day | Every 2 or more days | Total |
|------------------------|------------|------------|----------------------|-------------|
| Urban residents | 18% | 57% | 25% | 29% |
| Rural Residents | 45% | 41% | 14% | 27% |
| Urban Refugees | 25% | 62% | 13% | 22% |
| Rural Refugees | 46% | 37% | 18% | 22% |
| All Groups | 27% | 52% | 21% | 100% |

Source: Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

5. Data Quality/Limitations

The available data is of reasonable quality. Separate surveys provide similar estimates.

6. Comments/Conclusion

Both the access to and quality/safety of drinking water must be assessed for this goal. Overall, access is reasonable while quality is somewhat lacking. Frequent interruptions of the piped water supply increase the likelihood of cross-contamination by the influx of contaminants from the soil adjacent to leaks: Periodic outbreaks of water-related infections occur each year.⁴ Furthermore, there is no ongoing monitoring of either chemical or microbiological contamination of the drinking water supply. Fluoridation of the water supply may enhance the safety of the water supply and provide protection against dental caries.

Access to water: Substantially met

Safety of water: Partially met

7. References

1. *Socio-economic Situation of the Republic of Armenia, January-December 1999, Information-Analytical Monthly Report*. Ministry of Statistics State Registry and Analysis. Yerevan, 2000.
2. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.
3. Kurkjian, R., et.al. *Drinking Water Quality in Yerevan*. American University of Armenia, Yerevan, Armenia, 1995.
4. *Armenian Monthly Public Health Reports, Emergency Public Health Information Surveillance System*, 1993, No. 14 (annual).

Goal 5. Access to sanitary means of excreta disposal

- World Summit Goal: Universal access to sanitary means of excreta disposal
- Indicator:
 - ✓ Use of improved sanitary means of excreta disposal: proportion of population who use any of the following types of sanitation facilities: 1) toilet connected to sewage system; 2) toilet connected to septic system; 3) pour-flush latrine; 4) improved pit latrine; 4) traditional pit latrine

1. Definitions/Indicators

Definitions/indicators are consistent with international standards

2. Data Sources

Official data is available from the Ministry of Statistics with the caveat that these statistics exclude “private property of citizens” from the data. A national survey provides confirming data.

3. Trends

According to the Ministry of Statistics,¹ 98% of housing in urban areas and 61% of housing in rural areas had toilets connected to a sewage system in 1998. These proportions were rather stable during the last decade (table 5.1).

Table 5.1: Proportion of Housing equipped with toilets connected with sewage system in Armenia, 1990-1998*

| Area: | 1990 | 1995 | 1996 | 1997 | 1998 |
|-----------|------|------|------|------|------|
| Urban (%) | 99 | 99 | 98 | 98 | 98 |
| Rural (%) | 56 | 61 | 61 | 61 | 61 |

Source: Ministry of Statistics, State Registry and Analysis. Socio-economic Situation of RA, Information-analytical Report, January-December 1999, Yerevan, 2000

* - Private property of citizens is not included

The most recent data on this issue comes from a 1998 national survey.² The findings confirm the official data for urban areas, but for rural areas the study findings reveal a substantially lower proportion of toilet facilities connected to a sewage system (table 5.2). This difference is explained by the exclusion of the “private property of citizens” from the official data and the fact that the proportion of this type of property is much higher in rural areas.

Table 5.2: Kind of toilet facilities in the household by population strata, 1998 (n=2627, missing = 0)

| | Flush to sewage system | Flush to septic tank | Pour flush latrine | Covered pit latrine | Uncovered pit latrine | No toilet facilities |
|-----------------------------|------------------------|----------------------|--------------------|---------------------|-----------------------|----------------------|
| Urban residents | 95.2% | - | 2.8% | 2.0% | - | - |
| Urban refugees | 88.8% | 2.0% | 8.2% | 0.4% | - | 0.6% |
| Rural residents | 32.7% | 1.1% | 48.8% | 8.5% | 8.9% | - |
| Rural refugees | 18.6% | 6.1% | 67.0% | 3.0% | 4.8% | 0.5% |
| Weighted total ⁶ | 71.0% | 0.7% | 21.0% | 4.1% | 3.2% | 0.04% |

Source: Branca F., et.al., The Health and Nutrition Status of Women and Children in Armenia. UNICEF/UNHCR/WFP/MOH-Armenia, September 1998

As shown in table 5.2, the estimated proportion of the entire population of Armenia using toilets connected to a sewage system is 71%.

4. Disparities

In urban areas toilet facilities are connected with sewage system for 95% of residents, compared to 33% for rural residents. These numbers are relatively lower for refugees residing both in urban and rural areas (89% and 19% respectively). The majority of those not connected to a sewage system (estimated 21%) use pour flush latrines. This mode predominates for rural residents (49%) and rural refugees (67%).

An estimated 7% of the population (including 17% of rural residents) use pit latrines. In some instances the quality of latrines is very poor, even lacking a cover. A small proportion of refugees have no toilet facilities at all (see table 5.2).

According to the same study, the vast majority of households in every stratum had toilet facilities either in their dwelling or within a distance of 50m from it (table 5.3).

Table 5.3: Distance of toilet Facility from Dwelling by Population Strata, 1998

| | In dwelling (%) | < 50m away (%) | ≥ 50m away (%) |
|--------------------------------|-----------------|----------------|----------------|
| Urban residents (n=709) | 90.5 | 8.9 | 0.6 |
| Rural Residents (n=742) | 33.3 | 63.7 | 3.0 |
| Urban Refugees (n=536) | 76.1 | 22.8 | 1.1 |
| Rural Refugees (n=640) | 23.0 | 71.9 | 5.1 |
| Total | 68.2 | 30.2 | 1.6 |

Source: Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

5. Data Quality/Limitations

Aside from differences caused by the exclusion of “private property” in one study, the independent data sources provide consistent estimates of access to sewage facilities.

6. Comments/Conclusions

Urban dwellers have near universal access to a sewage system. Overall 29% of residents, most of them in rural areas, lack access to a sewage system. The goal of universal access to sanitary means of excreta disposal has yet been reached in Armenia.

Access: Partially met [Urban: Clearly met; Rural: Clearly not met]

7. References

1. *Socio-economic Situation of the Republic of Armenia, January-December 1999, Information-Analytical Monthly Report*. Ministry of Statistics State Registry and Analysis. Yerevan, 2000
2. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.

Goal 6. Universal Access to Basic Education

- World Summit Goal: Universal access to basic education and achievement of primary education by at least 80 % of primary school-age children through formal schooling or non-formal education of comparable learning standard, with emphasis on reducing the current disparities between boys and girls.
- Indicators:
 - ✓ Children Reaching Grade 5: proportion of children entering first grade of primary education who eventually reach grade 5
 - ✓ Net Primary School Enrollment Ratio: proportion of children of primary school age enrolled in primary school
 - ✓ Net Primary School Attendance Rate: proportion of children of primary age attending primary school

1. Definitions/Indicators

Data for children reaching grade 5 and net primary school attendance conform to the standard definition. For primary school enrollments, only gross figures are available, but are asserted to equal net rates.¹

2. Data Sources

Educational assessment reports released in 1999 and 2000,^{1,2} supplemented by a 1998 report on the impact of poverty,³ a 1999 report on the status of women,⁴ and expert opinion provide the basis for the data presented.

The 1999 education report is a national assessment prepared in response to the Government of Armenia's desire to assess itself against the 1990 World Declaration on Education for All. The 2000 report serves as an addendum to the 1999 report and focuses specifically on pre-primary and general education.

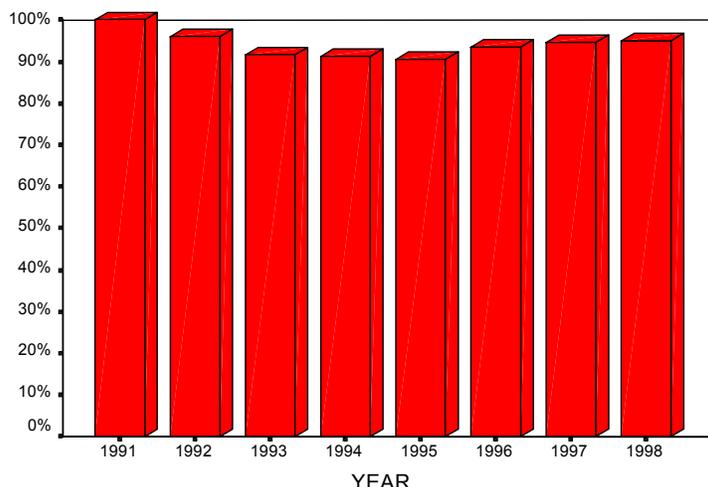
The prevailing situation in Armenia has caused comparatively enormous population outflows (estimates range from 25% to 40% of total population). As a result, officials have used a variety of statistical sources to maintain age by population estimates. A new survey with data accurate for the beginning of the 2000-2001 school year has been completed and preliminary figures are expected in the first quarter of 2001. Plans are being made for a new national census but no timetable with associated resources has yet been firmly established.

3. Trends

The 1999 education report describes a primary education program where schooling begins at age 7 and is compulsory through grade 8. Primary schools consist of grades 1-3, intermediate schools grades 4-8, and high schools grades 9-10. An assessment of the 1995 cohort through 1999 revealed that enrollment at grade 1 approached 100% and 99.7% of those students successfully passed their end of grade 4 exams on mathematics and Armenian. An estimated 87% pass the basic education examinations following grade 8. The 1998 assessment of poverty and the women's status report both reported that 77% of those enrolling in 1987 completed the 8th grade in 1995 as compared to only 59% of the cohort completing grade 8 in 1997. The trend in the gross primary enrollment ratio from 1991-1998 is presented in Figure 6-1 and shows a decline in

the ratio during the most difficult years of the transition with gradual subsequent improvements that fall short of previous levels.

Figure 6-1. Gross Ratio in Primary Education



Source: *Education for All, National Report*. Republic of Armenia, Yerevan, 1999.

The net primary school attendance rate for 1998/99 was estimated at 92%. From another source,³ non-illness absenteeism is considered a minor but growing problem and is attributed to outside work responsibilities, which is higher in rural areas where seasonal agricultural work is cited as the cause.

4. Disparities

Armenia has had near universal access to primary education for both boys and girls for many decades. The figures presented above show a slight disparity in favor of girls in gross enrolment ratios, which may be due to inaccuracies in the estimates of official school age population.

Data from the 1998/99 cohort (Table 6.1) indicate gross enrollment is 95%, with higher rates among females than males. This difference may reflect errors in estimating the population and/or actual gender differences in enrollment.

Table 6.1 Gross Enrolment Ratio, 1998-99

| | Enrolment All Ages | Official School Age Population | Gross Enrolment Ratio |
|--------|--------------------|--------------------------------|-----------------------|
| Male | 124,116 | 135,000 | 91.9 |
| Female | 131,827 | 134,400 | 98.1 |
| Total | 255,943 | 269,400 | 95.0 |

Source: *Education for All, National Report*. Republic of Armenia, Yerevan, 1999.

Current actual enrolment levels in primary school are expected to reduce drastically in the short term as a result of a corresponding decline in birth rates.

Regional data is not currently available, but anecdotal evidence suggests a far greater deterioration of the education system outside Yerevan and other urban centers.

5. Data Quality/Limitations

Official data is limited. Net rates are impossible to calculate due to underlying assumptions of the actual population demographics. Reported values rely on expert estimates and may vary significantly from the true values.

6. Comments/Conclusion

In terms of the objectives of Goal 6, Armenia exceeded these goals long ago. The most serious issues of schooling for all age levels refer to the maintenance of quality of education and, above all, of the quality of life (health, nutrition, social opportunities) for children in school. Studies by national authorities and international agencies reveal a serious situation of decline in development levels of children entering first grade of primary school (linguistic and cognitive development, physical development), caused by a combination of factors including: decline and near disappearance of the pre-primary network of child care institutions, lack of appropriate parental practices resultant in part from severe economic dislocation, and declining living standards.

Concern is rising that net enrollment and attendance are declining but data supporting these assertions are not yet available.

Children Reaching Grade 5: Clearly met

Net Primary School Enrollment: Substantially met [perceived as high but significantly declining]

Net Primary Attendance Rate: Substantially met [perceived as high but significantly declining]

7. References

1. *Education for All, National Report*. Republic of Armenia, Yerevan, 1999.
2. *Pre-Primary and General Education*. Republic of Armenia, Ministry of Statistics, Ministry of Education and Science and UNICEF, Yerevan, 2000.
3. *Social Indicators of Poverty*. Ministry of Statistics of Armenia, United Nations Development Programme, Yerevan, 1998
4. *Women Status Report, Impact of Transition*. UNDP, UNHCR, UNICEF, Armenia, 1999.

Goal 7. Reduction of Adult Illiteracy

- World Summit Goal: Reduce adult illiteracy rate by at least half of 1990 level with emphasis on female literacy.
- Indicators:
- ✓ Literacy Rate: Proportion of population aged 15 years and older who are able, with understanding, to both read and write a short simple statement on their everyday life.

1. Definitions/Indicators

Definitions used in collecting and reporting this indicator are consistent with accepted standards. Figures exclude institutionalized handicapped and similar populations.

2. Data Sources

Data sources for this indicator are derived from Census data (1989 and earlier) and the 1999 assessment report *Education for All*.¹

3. Trends

As has been the case for a number of decades, literacy in Armenia is virtually universal at 99.3% in the over 15 population and 99.8 in the 15-24 population.

4. Disparities

There are no known disparities among subpopulations. The Literacy gender parity index is 1.0, indicating equality in the observed near universal rates of literacy among men and women.

Since the 1989 census, Armenia received a large flow of refugees from neighboring countries, particularly Azerbaijan. The estimated literacy levels of the refugee populations are based upon educational level, but do not refer to the Armenian language: many of the refugees have Russian and/or Azeri as their main home language. Emigration of refugees has occurred primarily among young and middle-aged families. This results in a disproportionate number of elderly refugees, among whom literacy levels are estimated to be considerably lower. No accurate survey data permit making a comprehensive estimate of literacy levels among the refugee population as a whole.

5. Data Quality/Limitations

Data on literacy has not been systematically collected, but a variety of sources and expert opinion converge on an assessment of universal literacy. Of concern is a lack of data on new/emerging subpopulations, specifically refugees where this rate may or may not reflect the rates observed throughout the country.

6. Comments/Conclusion

Armenia has enjoyed for several decades a standard of almost universal literacy with complete gender parity, even among national minority groups.

Universal Literacy: Clearly Met

7. References

1. *Education for All, National Report*. Republic of Armenia, Yerevan, 1999.

Goal 8. Children: Physical or Mental Disabilities

- World Summit Goal: Provide improved protection of children in especially difficult circumstances and tackle the root causes leading to such situations
- Indicator
 - ✓ Total child disability rate: proportion of children aged less than 15 years with some reported physical or mental disability

1. Definition/Indicators

The definition of disability in Armenian children underwent changes during the mid-1990s. Prior to that, the Soviet definition was used. The Soviet definition utilized very strict criteria for defining disability in children. For instance, a child without one limb or one eye was not considered disabled if there was no permanent dysfunction of the parallel organ. Similarly, a completely deaf child with normal mental development was not considered as disabled. The current definition is somewhat broader but still does not include all the categories of permanent mental or physical impairment considered part of the international definition.

2. Data Sources

The Ministry of Statistics provides official statistics on disabled children. In addition to the definitional limitation identified above, institutionalized children are often overlooked as they are seldom registered as disabled with the social security system and not included in official data.

The number of institutionalized children has been estimated from specialized surveys of the State Statistical Department.

3. Trends

The official numbers of disabled children provided below (table 8.1) show a slightly increasing prevalence trend of disability, currently around 0.75%. These numbers however, reflect only those living with families and do not include institutionalized disabled children.

Several official studies document the degree of underestimation created by the exclusion of institutionalized children. A 1997 Statistical Department study of all institutional school students in Armenia revealed that approximately 85% of the 5951 students attending those schools were children with physical and/or mental disabilities.¹ A 1996 Ministry of Health national preventive check-up of children aged 0-14, capturing 885,000 children, an estimated 86%, showed that almost 3% of children had sensory, mental or physical impairments.¹

Table 8.1: Registered numbers of children with disabilities in Armenia

| | 1993 | 1995 | 1997 | 1998 | 1999 |
|---|-----------|-----------|------|------|------|
| Number of children under 16 with disabilities | 5477 | 8000* | 7510 | 8021 | 7817 |
| Number of children under 14 with disabilities | no data** | no data** | 6903 | 7280 | 7115 |
| Total child disability rate (% from total number of children 0-14 years old)*** | - | - | 0.67 | 0.72 | 0.74 |

Sources: Ministry of Health, Ministry of Social Welfare

*- Between 1993 and 1995 change in definition of disability in children was adopted, which may explain the increase in registered numbers of disability.

** - The range for disability in children is 0-16 in Armenia. As the Ministry of Health included disability indicators in the annual report forms since 1997, the only source of data before that time is the Ministry of Social Security, and the age distribution for their data is not available.

*** - The rates underestimate the real prevalence of disability in children, since the numerators do not include children with disabilities living in institutions of special assignment.

The main causes of disability in children, according to the Ministry of Health data, are provided in table 8.2. According to this data, over half of all disability cases in children are caused by neuro-psychological disorders. Other common causes are diseases of internal organs, surgical conditions, vision and hearing impairments, and tumors.

Table 8.2: Main causes of disability in children, Armenia, 1997-99 (percentages)

| | 1997 | 1998 | 1999 |
|--------------------------------------|------|------|------|
| Neuro-psychological disorders | 51.2 | 50.8 | 49.9 |
| Diseases of internal organs | 18.7 | 18.0 | 18.8 |
| Surgical conditions | 11.6 | 12.3 | 11.7 |
| Vision impairments | 8.7 | 9.7 | 10.3 |
| Hearing impairments | 6.4 | 6.0 | 6.2 |
| Tumors | 2.4 | 2.6 | 2.8 |
| Other | 1.0 | 0.6 | 0.3 |

Source: Ministry of Health

4. Disparities

The age structure of disability in children is given in table 8.3. It shows that the frequency of disability, as expected, increases with age.

Table 8.3: Age structure of under-14 disability in Armenia, 1997-99 (absolute numbers)

| | 1997 | 1998 | 1999 |
|--|------|------|------|
| Total # of under-14 disabilities, including: | 6903 | 7280 | 7115 |
| in 0-4 age group | 922 | 1103 | 1004 |
| in 5-9 age group | 2603 | 2661 | 2568 |
| in 10-14 age group | 3378 | 3516 | 3543 |

Source: Ministry of Health

According to the same source, the prevalence of disability in boys is higher than in girls. In 1999, cases in males constituted 66.5% out of all under-16 disabilities. The same tendency was observed during previous years. There were some regional differences in under-16 disability prevalence. The lowest prevalences (0.5% of all children of the same age group residing in the marz) were observed in Armavir and Ararat marzes, and the highest (1.2%) in Syunik and Aragatsotn marzes (table 8.4).

However, taking into consideration the previously described incompleteness of the available data, one should exercise caution interpreting this data.

Table 8.4: Under-16 Disability Prevalence By Marz, Armenia (1999)

| Marzes of Armenia | # of registered disability cases | % of disabled (<i>out of all children of that age group residing in that area</i>) |
|--------------------------|---|---|
| Armenia (total) | 7817 | 0.8 |
| Yerevan | 1852 | 0.7 |
| Aragatsotn | 510 | 0.5 |
| Ararat | 632 | 1.2 |
| Armavir | 486 | 0.5 |
| Gegharkunik | 704 | 0.8 |
| Lori | 926 | 0.8 |
| Kotayk | 685 | 0.9 |
| Shirak | 969 | 0.9 |
| Syunik | 536 | 0.9 |
| Vayots Dzor | 161 | 1.2 |
| Tavush | 356 | 0.8 |

Source: Ministry of Health of Armenia, 1999

5. Data Quality/Limitations

Discrepancies in the data arise from differing definitions of inclusion criteria and data sources. Official data relies on cases of disability registered through the social security system, a process which systematically excludes institutionalized children.

6. Comments/Conclusions

Although the rights of children with disabilities are outlined in the Armenian Law on the Rights of the Child, which includes full participation in social life and right to study in general education schools, this goal is seldom met.² A concept of a disabled child as an equal member of society is still new for Armenia, and the potential of a child with disability is not fully recognized. Most children with disabilities still live very isolated, even if they live in their homes. There is lack of community services for children with disabilities: their potential for normal social interactions is very limited, since most of them do not attend regular schools.³

Total population rate: Unable to assess [Between 0.75 and 1.3%]

7. References

1. *Social Indicators of Poverty*. Ministry of Statistics of Armenia, United Nations Development Programme, , Yerevan, 1998
2. *Education for All, National Report*. Republic of Armenia, Yerevan, 1999.
3. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.

Goal 9. Nutrition: Female Children & Pregnant/Lactating Women

- World Summit Goal: Special attention to the health and nutrition of the female child and to pregnant and lactating women
- Indicators:
 - ✓ Under-five mortality rate--female/male: probability of dying between birth and exactly five years of age, per 1000 live births--disaggregated by gender
 - ✓ Underweight prevalence female/male: proportion of under-fives who fall below minus 2 SD from median weight for age of NCHS/WHO reference population--disaggregated by gender
 - ✓ Antenatal care: proportion of women aged 15-49 attended at least once during pregnancy by skilled health personnel
 - ✓ HIV prevalence: proportion of population aged 15-49 who are HIV positive--disaggregated by gender and age
 - ✓ Anemia: proportion of women aged 15-49 with hemoglobin levels below 12 grams/100 ml blood for non-pregnant women, and below 11 grams/100 ml blood for pregnant women.
- Target for Armenia: There is no target specified

1. Definitions/Indicators

The local definition of under-five mortality rate is somewhat different from the given definition in terms of its infant mortality component. According to the official definition of infant mortality used until 1995, only those newborns born after at least 28 weeks of gestation with a birth weight 1000g or more and who had drawn at least one breath were considered as live born. Infants born weighing less than 1,000 gram were not considered a live birth unless surviving for at least 7 days. In 1995, the WHO definition was adopted for reporting to the Ministry of Health. Thus, Ministry of Health from 1995 onward includes infants born less than 1,000g provided some signs of life were evident at birth (heart beat, breathing, etc.). The Ministry of Statistics data still excludes this group from its registry. Data on under-five mortality disaggregated by gender is readily available from the official statistics only for 1999.

Local definitions for underweight (low weight-for-age)] are consistent with the WHO definition. The NCHS/WHO population serves as a reference population. Data on this indicator disaggregated by gender is available from 1998 national nutritional survey.¹

The given definition of antenatal care is not used in the Ministry of Health official statistics. Instead, the indicator of early antenatal care is defined as the proportion of women aged 15-45 attended by skilled health personnel (physician, midwife or nurse) during the first trimester of pregnancy. The indicator of early antenatal care is considered a more sensitive measure of antenatal services coverage since it is believed (and confirmed by recent studies¹) that almost every woman attends antenatal services at least once during pregnancy.

The local definition of HIV prevalence is the proportion of HIV positive population. There is no specific age range for this definition. Gender-specific data is available from official sources.² The only difference in the locally used definition of anemia in non-pregnant women is that it refers to women 15-45 years old. The hemoglobin levels used for diagnosis of anemia in women

are the same (as given in the definition above). The definition of anemia prevalence in pregnant women is formulated as a percentage among all pregnant women. Again, the hemoglobin levels used for diagnosis of anemia in pregnant women are the same as given.

2. Data Sources

The main source of data for under-five mortality is the Ministry of Statistics. However, data on this indicator disaggregated by gender is not readily available from this source, and thus, only 1999 data for between-gender differences was feasible to obtain.

The national under-5 data on underweight prevalence disaggregated by gender is available from a 1998 national study, which was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

Health facilities annual reports submitted to the Ministry of Health annually, along with the above-mentioned 1998 national study, are the main sources of data for the indicator of antenatal care.

Data on HIV prevalence are available from National Center for AIDS Prevention - responsible for AIDS surveillance in the Republic.

The main source of data used for the indicator of anemia prevalence is again 1998 national survey. Another source of data for this indicator is the Ministry of Health, which receives relevant information from health facilities of the Republic annually. The data from this source is limited with information on pregnant women only.

3. Trends

According to the Ministry of Statistics data, the under-five mortality rate was 20.8‰ (per 1000 live-birth boys) in boys and 17.3‰ (per 1000 live-birth girls) in girls. This difference is consistent with the gender differences observed during infancy. Over the decade, the infant mortality rate for boys was consistently 15-25% higher than for girls (table 9.1). This can serve as an indirect evidence of the lack of discrimination against female children.

Table 9.1: Infant Mortality Rate in Armenia Disaggregated by gender (1990-1999)

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Boys | 20.50 | 19.00 | 21.20 | 18.70 | 16.80 | 15.50 | 16.80 | 17.20 | 16.4 | 17.9 |
| Girls | 16.10 | 17.00 | 16.50 | 16.60 | 13.20 | 12.90 | 13.80 | 13.40 | 12.8 | 10.3 |
| Total | 18.5 | 17.9 | 18.5 | 17.3 | 15.1 | 14.2 | 15.52 | 15.43 | 14.73 | 15.44 |

Sources: Women and Men in Armenia, Ministry of Statistics of Armenia, Population Statistics, 1999.
 Health and Care of Public Health, Statistical Collection, Ministry of Health of Armenia, 1999

The 1998 national nutritional survey revealed slight gender variations in underweight rates. Considerable differences were found only among rural refugees, where the prevalence of

underweight among boys was 25% higher than among girls. There were almost no gender differences in the other under-five population groups and in the country as a whole (table 9.2).

Table 9.2: Under-five underweight prevalence disaggregated by gender and population strata, 1998

| Population Strata | Boys (n=1736) | Girls (n=1457) |
|-------------------------|---------------|----------------|
| Urban Residents | 3.11% | 3.52% |
| Rural Residents | 4.89% | 4.40% |
| Urban Refugees | 4.40% | 4.81% |
| Rural Refugees | 5.98% | 3.58 % |
| Total (weighted) | 3.91% | 3.90% |

Source: Branca, F., et al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

According to the 1998 national survey, the overwhelming majority of women aged 15-45 enrolled in the study practiced antenatal care: 97.9% of them reported that they visited women consultation during their pregnancy (table 9.3). It is believed that this “high” proportion was rather stable during the decade. However, the indicator of early neonatal care (involvement of women in antenatal care during the first trimester of pregnancy) has decreased significantly. As shown in table 9.4, this indicator declined by almost one-third of its 1990 level. According to the regression line (figure 9-1), the proportion of early involvement in antenatal care decreased by an absolute difference of 23.4% (49.6% - 73.0%). One explanation for this may be decreasing accessibility of health care services for the low-income population because of perceived necessity to pay for these services.

Table 9.3: Women registering for antenatal care by Population Strata, 1998

| Total | Urban residents | Rural residents | Urban refugees | Rural refugees |
|---------------|-----------------|-----------------|----------------|----------------|
| 97.9 % | 98.0 % | 97.7 % | 98.5 % | 97.3 % |

Source: Branca, F., et al., The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Table 9.4: Involvement of women in early antenatal care (<12 weeks)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|----------|------|------|------|------|------|------|------|------|------|------|
| % | 72.5 | 71.4 | 68.7 | 64.3 | 61.4 | 58.3 | 60.1 | 54.3 | 53.1 | 48.8 |

Source: Ministry of Health, RA

Currently, there are 101 HIV-positive men and 34 HIV-positive women registered in the country. Out of them 20 men and 4 women were diagnosed with AIDS. There were 13 cases of death from AIDS among men. The first and, as of yet, the only case of death from AIDS in woman occurred in 2000 (table 9.5). The majority of the HIV carriers (81.5%) belong to the 20-39 age group. The main transmission roots are heterosexual practices (48.4%) and intravenous drug usage (38.7%).³

Table 9.5: HIV, AIDS, and Deaths Registered in Armenia

| Year | HIV | | | AIDS | | | Number of deaths | | |
|--------------|------------|-----------|------------|-----------|----------|-----------|------------------|----------|-----------|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| <1995 | 3 | | 3 | 3 | | 3 | 2 | | 2 |
| 1996 | 19 | 8 | 27 | 7 | | 7 | 3 | | 3 |
| 1997 | 30 | 7 | 37 | 2 | | 2 | 1 | | 1 |
| 1998 | 5 | 4 | 9 | 1 | 1 | 2 | 2 | | 2 |
| 1999 | 26 | 9 | 35 | 6 | 2 | 8 | 1 | | 1 |
| 2000 | 18 | 6 | 24 | 1 | 1 | 2 | 3 | 1 | 4 |
| Unknown | | | | | | | 1 | | 1 |
| TOTAL | 101 | 34 | 135 | 20 | 4 | 24 | 13 | 1 | 14 |

Source: National Center for AIDS Prevention (through Oct 2000)

Preliminary studies of high-risk groups indicate that there are probably many more HIV/AIDS cases than those registered officially. According to the National Center for AIDS Prevention,² the actual number of people living with HIV/AIDS exceeds the officially registered number and is estimated to be closer to 1,500 cases. These estimates were projected from the examination of high-risk groups such as intravenous drug users, prostitutes, and prisoners. Over 50 percent of HIV-infected men are intravenous drug users with sexual partners, who are not drug addicts and do not use protection. In a study of 200 street prostitutes conducted between June through August 1998, the HIV seroprevalence was 7.5 percent as documented with Elisa testing⁴.

According to the findings of the 1998 national survey¹, 13.1% of non-pregnant women in fertile age (15-45 years old) had mild or moderate anemia (hemoglobin levels below 12 g/dL). This percentage was even higher in pregnant women: 16% of them had hemoglobin levels below 11g/dL. However, there was essentially no severe anemia (hemoglobin levels below 7 g/dL) identified.

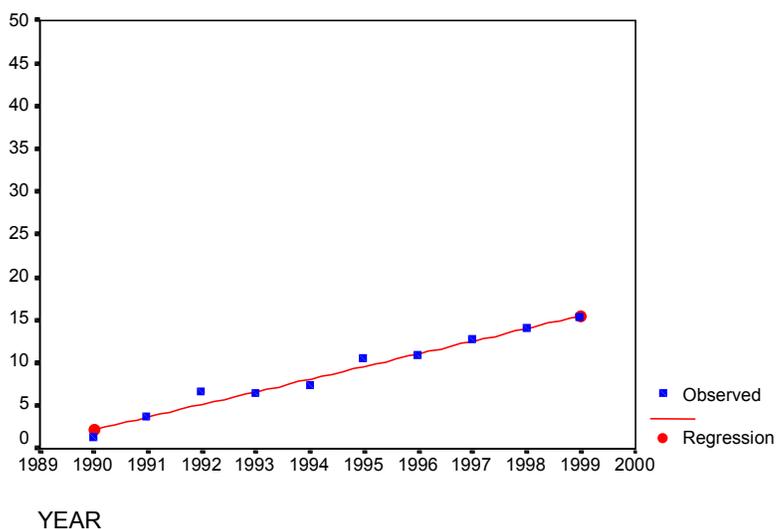
These findings are consistent with the Ministry of Health data⁵, according to which the prevalence of anemia among pregnant women has increased almost 12 fold during the decade and reached the level of 15.3% in 1999 (table 9.6). The regression line in figure 9-2 shows an increase of 13.2% (15.5% - 2.3%) in anemia prevalence among pregnant women over the decade. The rate of this increase was rather stable during the decade, despite the inflow of iron supplementation tablets through humanitarian aid during the last several years and the prescription of these tablets to pregnant women diagnosed with anemia⁵. The overwhelming majority of Armenian families faced serious financial difficulties during the last decade and the high prices of products rich in iron and protein (particularly, meat products) may be responsible for this increase.

Table 9.6: Prevalence of anemia among pregnant women during pregnancy (% of all pregnancies)

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|------|------|------|------|------|------|------|------|------|------|------|
| % | 1.3 | 3.7 | 6.7 | 6.5 | 7.3 | 10.4 | 10.8 | 12.6 | 14.0 | 15.3 |

Source: Ministry of Health of Armenia

Figure 9-2: Prevalence of anemia among pregnant women (%)



4. Disparities

According to 1998 national survey findings, there were no significant differences between urban and rural residents and between residents and refugees in terms of attending antenatal care services.

In terms of HIV prevalence, intravenous drug users, prostitutes, and prisoners are the most disadvantaged groups, although there is no information on exact prevalence of HIV carriers among these subpopulations.

According to the 1998 survey findings¹, the prevalence of anemia in non-pregnant women was higher in rural areas than in urban areas. Particularly high prevalence (16.7%) was registered among rural refugees (table 9.7). Unlike this, the prevalence of anemia in pregnant women was

higher in urban areas; refugees were more affected than residents (table 9.8). The rates of anemia were increasing as the pregnancy progressed (table 9.9). This could be particularly concerning, since late-stage anemia is a risk factor for hemorrhage during delivery and this has been the most frequent cause of maternal deaths in Armenia⁴.

Table 9.7: Prevalence of anemia (Hb < 12g/dl) in non-pregnant women aged 15-45 by population strata, 1998

| Total (weighed) | Urban residents (n=541) | Rural residents (n=669) | Urban refugees (n=435) | Rural refugees (n=563) |
|-----------------|-------------------------|-------------------------|------------------------|------------------------|
| 13.07% | 11.83% | 14.8% | 9.66% | 16.69% |

Source: Branca, f., et al., The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Table 9.8: Prevalence of anemia (Hb < 11g/dl) in pregnant women aged 15-45 by population strata, 1998.

| Total (weighed) | Urban residents (n=51) | Rural residents (n=51) | Urban refugees (n=34) | Rural refugees (n=41) |
|-----------------|------------------------|------------------------|-----------------------|-----------------------|
| 15.98% | 17.65% | 11.76% | 20.59% | 21.96% |

Source: Branca, F., et al., The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Table 9.9: Prevalence of anemia (Hb < 11g/dl) in pregnant women aged 15-45 by stage of pregnancy (weighted percentages for population)

| I trimester | II trimester | III trimester |
|-------------|--------------|---------------|
| 10.77% | 14.04% | 29.09% |

Source: Branca, F., et al., The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

There were considerable regional differences in anemia prevalence. Among non-pregnant women, the prevalence of anemia was the highest in Syunik marz (21,5%) followed by Tavush (19.7%) and Kotayk (17.8%). The lowest prevalence (8-9%) of anemia was registered in Armavir, Vayots Dzor and Yerevan (table 9.10). Among urban regions, Yerevan had the lowest rate of anemia.¹ Regional differences in anemia prevalence among pregnant women are available from the Ministry of Health annual reports. According to this source, again, Syunik is the most affected area. The least affected area is Gegharkunik Marz (table 9.10).⁵

5. Data Quality/Limitations

The quality of death registry data is generally perceived to be good. The data are limited by the inconsistent application of the revised definition for a live birth adopted in 1995.

The 1998 national study had several methodological limitations, but none that cast doubt on the magnitude of the findings.

Table 9.10: Prevalence of anemia in non-pregnant (Hb< 12g/dl) and pregnant (Hb< 11g/dl) women by Regions of Armenia, 1998

| | % out of women population aged 15-45 (1998 survey data) | % of all pregnant women (MOH data) |
|-----------------|--|---|
| Armenia (total) | 15.3% | 13.14% |
| Yerevan | 14.1% | 9.15% |
| Aragatsotn | 14.1% | 14.58% |
| Ararat | 15.3% | 16.37% |
| Armavir | 26.3% | 8.27% |
| Gegharkunik | 3.9% | 14.55% |
| Lori | 16.5% | 13.92% |
| Kotayk | 21.6% | 17.84% |
| Shirak | 12.6% | 12.98% |
| Syunik | 20.7% | 21.46% |
| Vayots Dzor | 8.1% | 8.37% |
| Tavush | 14.9% | 19.67% |

Sources: Branca, F. et al., The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998. Ministry of Health

The accuracy of data from Ministry of Health annual reports depend on many factors, such as data collection, recording, cleaning, and reporting procedures data and thus, is difficult assess. Also, population numbers used to calculate rates of antenatal care are possibly overestimated, since they are based on rather old census data (1989) and are not adjusted for migration.

It is believed that there is a gross underestimation of HIV/AIDS prevalence in the country due to the lack of a large-scale national prevention and detection program. The real prevalence of infection is believed to be appreciably higher than the official numbers indicate.

6. Comments/Conclusion

There is no evidence of discrepancy between female and male children in Armenia. However, economic difficulties in the country have particularly impacted the social and familial roles of males, who have traditionally earned the living and served as the heads of households. Growing unemployment forced many men to leave the country, thus, putting the burden of responsibility for taking care of the children and homes solely onto women. The observed 12-fold increase in anemia prevalence in more vulnerable category of pregnant women is closely connected with imbalanced diets, which is a reflection of decreasing living standards in the Republic.

Under-5 mortality: Clearly Met

Underweight prevalence: Clearly met [gender disparity favors women; protective effect increases in rural areas]

Antenatal Care: Clearly Met

HIV prevalence: Unable to assess [passive case identification; limited data]

Anemia-Women: Clearly unmet [perceived significant increase over decade]

Anemia-Pregnant Women: Clearly unmet [significant increase over decade, situation worsens through pregnancy]

Under-1 mortality: Clearly Met

Early Antenatal Care: Partially met [Significant decline over decade]

7. References

4. Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998
5. Interview with Samvel Grigoryan, Director, National Center for AIDS Prevention, Yerevan, Armenia, 5 December 2000.
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8. Ministry of Health (direct communication)
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10. Health and Care of Public Health, Statistical Collection. Ministry of Health of Armenia. Armenia, 1999.

Goal 10. Contraception and Fertility Rates

- World Summit Goal: Access by all couples to information and services to prevent pregnancies that are too early, too closely spaced, too late or too many
- Indicators:
 - ✓ Contraceptive prevalence: proportion of women aged 15-49 who are using or whose partner is using, a contraceptive method; either modern or traditional
 - ✓ Fertility rate for women 15-19: number of live births to women aged 15-19 per 1000 women aged 15-19
 - ✓ Total fertility rate: average number of live births per woman who has reached the end of her childbearing period
- Target for Armenia: To increase awareness of all couples on family planning and to ensure universal access for them to family planning services

1. Definitions/Indicators

The definition of contraceptive prevalence is the same in Armenia, although the age range of targeted women population may vary in different studies on reproductive health. Generally, in Armenia, the 15-45 age-range is considered as the reproductive age.

The definitions for fertility rate for women 15-19 and for total fertility rate are formulated consistent with the given definitions.

2. Data Sources

The main source of data on contraceptive prevalence was the National Reproductive Health Survey, carried out in 1997 in the scope of the National Program on Reproductive Health. A multistage cluster sampling methodology was used to obtain a representative sample of 1000 women, ever married or in consensual union, aged 15-45 years. Response rate from eligible women was 99%.¹

Another source of data for contraceptive usage was M. Khachikian's survey carried out during 1990-91. Over 4000 women, ever married and aged 15-45 years were sampled from Yerevan with the usage of multistage cluster sampling methodology². The survey methodology was comparable with the above-mentioned 1997 national survey.

A similar study³ was conducted in Spring 2000 as part of a baseline assessment for a national reproductive health and family planning information-education-communication campaign. The sample included 1212 married women aged 18-35 selected through a multistage cluster sampling design in Yerevan, Lori, Vayots Dzor, and Armavir.

The Ministry of Health data from health facilities' annual reports and the Ministry of Statistics data were also used. Only information on intra-uterine device (IUD) and oral contraceptive usage was available from these official sources, and only those cases where these methods were received from health facilities (not from pharmacies or elsewhere).

The Ministry of Health annual reports' data and the Ministry of Statistics data were the primary sources for total fertility rate and fertility rate of women aged 15-19.

3. Trends

According to the 1991 Yerevan Survey, only 56% of couples were using contraception, and the majority of them (55%) were using traditional methods as the main method of birth control, with more than half of the traditional users using withdrawal as the main method (table 10.1). The 1997 National survey painted a similar picture. Almost the same proportion (60%) of sexually active couples was currently using contraception. The proportion of users using traditional methods was even higher at 82.8% than during 1991 survey. Again, the majority of those using traditional methods used withdrawal (table 10.1).

The 2000 survey data, while not national in scope, concluded that virtually all couples not pregnant or actively trying to get pregnant were using some means of contraception. Among those not trying to conceive, almost half were using traditional methods, almost exclusively withdrawal. Only 24% were currently using a modern method.

Correspondingly, usage of modern methods decreased primarily due to decreases in condom use. This may be explained by decreasing purchasing power of the population during the period between two surveys. Interestingly, the proportion of those who reported discontinued contraceptive use was higher in the 1997 survey than in the 1991 survey (20.5% vs. 9%). However, one should be cautious when comparing the findings of these two surveys, since the first one reflects only the situation in Yerevan, where the population may be even more advantaged in terms of family planning practice^{1,3}.

Table 10.1: Use of contraceptives among women aged 15-45 (survey data)

| | Proportion of women ever married or in consensual union (Yerevan , 1991) | Proportion of women ever married or in consensual union (National data, 1997) |
|--|--|---|
| Ever used contraception | 67% | 80.5% |
| Currently use contraception, <i>including:</i> | 56%* | 60.0% |
| Withdrawal | 32% | 53% |
| Breast-feeding | | 4.7% |
| Calendar method | 12% | 13.5% |
| Douching and other | 11% | 11.6% |
| Traditional methods (total) | 55% | 82.8%** |
| IUD | 14% | 16.8% |
| Barriers (condoms) | 28% | 16.7% |
| Sterilization | - | 1.3% |
| Pills | 3% | 1.2% |
| Spermicide | - | 0.7% |
| Modern methods (total) | 45% | 36.7%** |

* Only the primary method was considered

** Sum of totals is more than 100%, since in some cases more than one method was used

Sources: M. Khachikyan, Reproductive Health Survey in Yerevan, 1991.

Reproductive health survey Armenia, 1997: Armenian National Program on Reproductive Health, Ministry of Health of Armenia , WHO, UNFPA, UNICEF, Yerevan, 1998

According to data available from the Ministry of Health, usage of IUD and oral contraceptives distributed through medical services has increased since the establishment of 77 family planning cabinets all over the country that provide contraceptives free of charge. More than two-fold increase of IUD usage and more than seven-fold increase of oral contraceptives usage was registered in 1999 when comparing with 1996 data (table 10.2). This data is consistent with data from Ministry of Statistics, which shows the same increasing tendency (table 10.3). Further increase in contraceptive prevalence could be expected due to the nation-wide mass media campaign (Green Path) conducted during 2000 aimed to increase awareness about family planning and to promote family planning cabinets. When analyzing these data, one should bear in mind that official numbers underestimate the true prevalence of contraceptive usage, since only those who receive contraceptive methods from medical facilities (where the family planning cabinets are located) are included.

Table 10.2: Users of IUD and oral contraceptives (absolute numbers)

| | | 1997 | 1998 | 1999 |
|----------------------------|------|-------|-------|-------|
| IUD | 9539 | 10764 | 20084 | 23526 |
| Oral contraceptives | 2783 | 4930 | 15360 | 21034 |

Source: Ministry of Health

Table 10.3: Contraceptive use among women (per 1000 women aged 15-49*)

| | 1995 | 1996 | | 1998 |
|--------------------------------|------|------|----|------|
| IUD | 11 | 12 | 13 | 19 |
| Hormonal contraceptives | 1 | 3 | 5 | 15 |

Source: Women and Men in Armenia. Republic of Armenia Ministry of Statistics, State Register and Analysis, 1999. (Primary source: Statistics of social spheres, Ministry of Statistics, RA)

Over the last decade, an abrupt decline in the fertility rate was observed in Armenia, attributed to the combined effects of a poor economy and high emigration, especially among those of reproductive age. According to official statistics, which may use inaccurate population estimates, the total fertility rate more than halved over the decade (table 10.4 and figure 10-1): the regression line in figure 10-1 shows an estimated reduction of the fertility rate from 2.58 to 1.09, equal to a 57.8% reduction over the decade.

Table 10.4: Total fertility rate (average # of births per woman)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--------------|------|------|------|------|------|------|------|------|------|------|
| Total | 2.62 | 2.58 | 2.35 | 1.97 | 1.70 | 1.63 | 1.60 | 1.45 | 1.30 | 1.19 |
| Urban | 2.3 | 2.3 | 2.1 | 1.7 | 1.46 | 1.42 | 1.43 | 1.31 | 1.15 | 1.05 |
| Rural | 3.3 | 3.2 | 2.9 | 2.5 | 2.23 | 2.09 | 1.96 | 1.77 | 1.62 | 1.52 |

Sources: Ministry of Health, RA, Ministry of Statistics, RA

The dynamics of the fertility rate for women 15-19 years old (live births per 1000 women aged 15-19) is provided in table 10.5. This rate was over 70 in the early 1990s. Over the decade, this rate, like the overall fertility rate decreased more than 50%. According to the regression estimates in Figure 10-2, the fertility rate for women aged 15-19 decreased by from 84.0 to 34.0 or by 59.6% of its initial level. During the last three years this rate was between 30 and 45, which could be considered as “low to average” value for this indicator,⁴ if one has confidence in the denominators used to calculate these rates.

Table 10.5: Fertility rate for women 15-19 (live births per 1000 women aged 15-19)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|-------|------|-------|-------|------|-------|------|------|------|------|------|
| Total | 69.1 | 75.5 | 82.5 | 77.0 | 68.0 | 56.2 | 53.3 | 43.4 | 34.6 | 29.8 |
| Urban | 56.1 | 60.0 | 64.8 | 57.1 | 48.7 | 40.2 | 40.0 | 32.3 | 26.6 | 23.1 |
| Rural | 97.1 | 110.9 | 123.9 | - | 114.4 | 94.0 | 83.5 | 68.0 | 52.0 | 44.0 |

Sources: Ministry of Health, RA, Ministry of Statistics, RA

As shown in table 10.1, some contraceptive methods such as sterilization, hormonal implants, spermicides and oral pills are rarely used in Armenia. The widespread perception of adverse health effects of hormonal pills could be one of the reasons of low usage of oral contraception. The most popular methods are withdrawal, IUDs, condoms, and vaginal douching¹. According to the unpublished data, contraceptive prevalence is higher in Yerevan than in some regions³.

Total fertility rate is higher in urban areas, than in rural areas. As shown in table 10.4, this difference is stable over the decade. The impact of the decreasing fertility rate was similarly distributed across urban and rural areas. While also declining proportionately, the fertility rate among women aged 15-19, however, is almost twice as high in rural areas. The practice of early marriage is more widespread in rural areas and likely explains this difference.

5. Data Quality/Limitations

Survey data are a more reliable source of information on contraceptive prevalence. Data from the official statistics is limited to information about IUD and oral contraceptive usage, methods requiring medical involvement. Another limitation of official data is that it considers only those women who use family planning services from medical facilities (not including pharmacies). The third limitation of official rates is the possible overestimation of denominator (number of women aged 15-45 in the country), since the population numbers used are based on 1989 census data and are not adjusted for considerable migration, that took place during the 1990s.

Fertility rates from official statistics are rather reliable. However, the same shortcoming of overestimating the numbers of women could reduce the accuracy of these rates.

6. Comments/Conclusion

Prevalence of modern contraceptive use is low in Armenia. Possible explanations for this are the low level of couples' knowledge about contraception, low affordability of modern contraceptives and limited accessibility to family planning services. The increasing trend in contraceptive prevalence observed during the recent years could be the primary result of recent activities directed to increasing the population awareness and the availability of family planning services.

Both, total fertility rate and fertility rate for women 15-19 years old declined by more than 50% over the decade. While the decreasing trend in teenagers' fertility rate could be considered as a positive outcome, it cannot be explained by better lifestyle or by successful family planning practices since the same tendency is evident in the total fertility rate. Rather, socio-economic difficulties faced by the overwhelming majority of Armenian families are likely responsible for this.

The paradox of declining fertility in an environment of low contraceptive usage can be explained by an unusually heavy reliance on abortion as the means of fertility regulation. The 2000 baseline survey indicated that 1 in 2 pregnancies over the past 5 years in its study population had ended in abortion. Recent efforts to promote substitution of modern contraceptive methods for abortion are currently being evaluated, but the necessity for access to timely, affordable contraceptive and family planning counseling cannot be overemphasized.

Contraceptive Prevalence: Substantially Unmet
15-19 Fertility: Unable to assess
Total Fertility: Unable to assess

Awareness: Clearly Met
Access: Partially Met

7. References

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2. Khachikian, M.. *Armenian Women in a Changing World* (paper presented at the First International Conference of the Armenian International Women's Association), 1994.
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4. *Young People in Changing Societies, Regional Monitoring Reports, No.7*. The MONEE Project CEE/CIS/Baltics, UNICEF, 2000
5. *Women and Men in Armenia 1999*. Ministry of Statistics of Armenia. "Yotnagir", "Lusabats-04" Publication Services, Yerevan, 1999.
6. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.
7. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.
8. Women Status Report, Impact of Transition. UNDP, UNHCR, UNICEF, Armenia, 1999.

Goal 11. Pregnancy: Access to Prenatal Care & Referral Facilities

- World Summit Goal: Access by all pregnant women to pre-natal care, trained attendants during childbirth and referral facilities for high-risk pregnancies and obstetric emergencies
- Indicators:
 - ✓ Antenatal care: proportion of women aged 15-49 attended at least once during pregnancy by skilled health personnel
 - ✓ Childbirth care: proportion of births attended by skilled health personnel
 - ✓ Obstetric care: number of facilities providing comprehensive essential obstetric care per 500,000 population; number of facilities providing basic essential obstetric care per 500,000 population)
- Target for Armenia: Universal access to obstetric care.

1. Definitions/Indicators

The given definition of antenatal care is not used in the Ministry of Health official statistics. Instead, the indicator of early antenatal care is defined as the proportion of women aged 15-45 attended by skilled health personnel (physician, midwife or nurse) during the first trimester of pregnancy. The indicator of early antenatal care is considered a more sensitive measure of antenatal services coverage since it is believed (and confirmed by recent studies) that almost every woman attends antenatal services at least once during pregnancy.

The indicator of childbirth care is defined as proportion of hospital births. Note: skilled health personnel (physician, midwife or nurse) attend a small proportion of home births, but there are no statistics on this proportion.

The indicator of obstetric care is defined consistent with the international standard. However, the more commonly used indicators for obstetric care are: (1) number of obstetricians-gynecologist per 10,000 female population, and (2) number of obstetric beds per 10,000 women of fertile age (15-45 years old).

2. Data Sources

Health facilities annual reports submitted to the Ministry of Health are the main sources of data for these indicators^{1,2}.

Another source that was used is the 1998 national study, which was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR³. A sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 2 649 mothers of 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

3. Trends

According to the 1998 national survey, an overwhelming majority of women received antenatal care: 97.9% of the women enrolled in the study reported visiting a Women's Consultation Center during their pregnancy (table 11.1). It is believed that this high proportion was rather stable during the decade. However, the indicator of early neonatal care (involvement of women in antenatal care during the first trimester of pregnancy) has decreased significantly. As shown in

table 11.2, this indicator declined by almost one-third of its 1990 level. According to the regression line estimates in figure 11-1, the proportion of early involvement in antenatal care decreased by 23.4% to 49.6% over the decade, by 32.1% of its initial level. One explanation for this may be decreasing accessibility to health care services for the low-income population because of perceived necessity to pay for these services.

Table 11.1: Women registering for antenatal care by Population Strata

| Total | Urban residents | Rural residents | Urban refugees | Rural refugees |
|--------|-----------------|-----------------|----------------|----------------|
| 97.9 % | 98.0 % | 97.7 % | 98.5 % | 97.3 % |

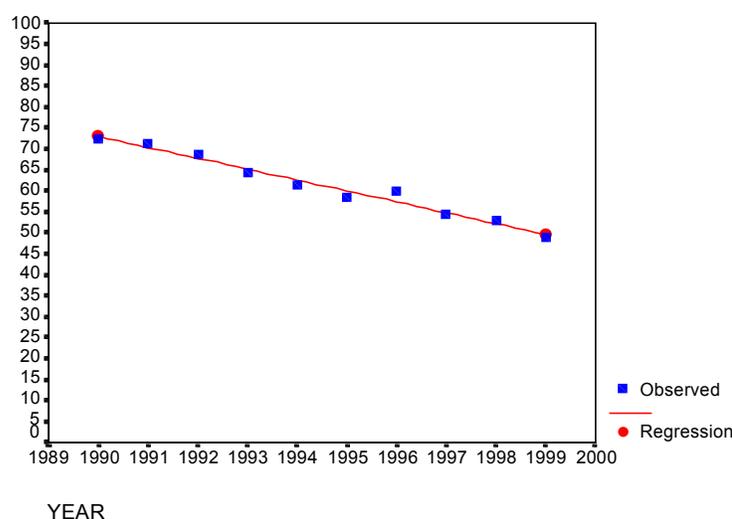
Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Table 11.2: Involvement of women in early antenatal care (<12 weeks)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|------|------|------|------|------|------|------|------|------|------|
| % | 72.5 | 71.4 | 68.7 | 64.3 | 61.4 | 58.3 | 60.1 | 54.3 | 53.1 | 48.8 |

Source: Ministry of Health, RA

Figure 11-1: Involvement of women in early antenatal care (%)



The proportion of hospital deliveries also showed a decreasing trend during the middle 1990s. However, this proportion increased again during the recent years, and, as a result, only a slight change in this indicator was registered over the decade (table 11.3 and figure 11-2). As shown in figure 11-2, the regression line estimates a 1.9% absolute reduction in the proportion of hospital deliveries over the decade to 95.3%.

Table 11.3: Proportion of births occurring in the health care facilities (%)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|------|------|------|------|------|------|------|------|------|------|
| % | 99.7 | 98.1 | 96.9 | 95.5 | 93.5 | 92.8 | 95.7 | 96.1 | 96.9 | 97.3 |

Source: Ministry of Health, RA

5

According to the data on existing obstetric care facilities,^{1,2} the number of facilities providing comprehensive obstetric care (such as Maternity Centers and Obstetric-Gynecology Departments in Hospitals) can be roughly estimated as 7.4 per 500,000 population for the year 1999. Correspondingly, the number of facilities providing basic essential obstetric care (such as rural hospitals with obstetric beds, women’s consultation units, obstetrical gynecological rooms and feldsher-obstetrical units) per 500,000 population can be roughly estimated as 101.2 (table 11.4). This numbers far exceed the minimum acceptable levels for these indicators (1 – for comprehensive obstetric care facilities and 4 – for basic obstetric care facilities) and makes no assessment of the quality of services provided..

Table 11.4: Obstetric/Gynecologic Services in Armenia, 1998

| | Total # | | Total # | Per 500 000 population (beginning of year 1999) |
|--|---------|---|---------|--|
| Maternity Centers | 20 | Facilities providing comprehensive essential obstetric care | 56 | 7.4 |
| Obstetric-Gynecology Departments | 36 | | | |
| Rural Hospitals with Obstetric Beds | 26 | Facilities providing basic essential obstetric care | 769 | 101.2 |
| Women’s Consultation Units | 36 | | | |
| Obstetrical- Gynecological Rooms | 87 | | | |
| Feldsher-Obstetrical Units | 620 | | | |

Source: Ministry of Health, RA

As mentioned above, the more commonly used indicators for obstetric care in Armenia are the number of obstetrician-gynecologists per 10 000 women population and the number of obstetric beds in hospitals per 10 000 women aged 15-45. The dynamics of these indicators over the decade

is provided in table 11.5. While the number of obstetricians-gynecologist per women population remained stable, the number of obstetric beds reduced by one third, which can be partially explained by financial difficulties that face the majority of health facilities in Armenia.

Table 11.5: Number of Obstetricians-gynecologist per 10,000 Women Population & Number of Obstetric Beds in Hospitals per 10,000 Women Aged 15-45 years.

| | 1990 | 1995 | 1997 | 1998 | 1999 |
|--|------|------|------|------|------|
| Obs.-gynecologists per 10000 women population | 4.3 | 3.9 | 4.3 | 4.4 | 4.4 |
| Obstetric beds per 10000 women aged 15-45 | 36.3 | 31.3 | 26.5 | 25.5 | 23.2 |

Source: Health and Care of Public Health, Statistical Collection, Ministry of Health of Armenia, 1999

It should be noted that the staffing and bed levels inherited from the Soviet system are considered excessive by conventional standards. Major challenges facing the Ministry of Health revolve around the optimization and rationalization of health services.

4. Disparities

According to 1998 national survey findings, there were no significant differences between urban and rural residents and between residents and refugees in terms of attending antenatal care services.

With respect to childbirth care, there are considerable between-regional differences in proportions of home births. The areas with the highest rate of home births are traditionally Gegharkunik and Aragatsotn Marzes, where the proportion of home births exceeds 5-6 times the national average of 2.7% (table 11.6). The possible explanations for this could be the traditions in some ethnic minorities living in Aragatsotn Marz, and the widespread reliance in some subpopulations in Gegharkunik Marz on traditional birth attendants. It is worth mentioning that home births were responsible for 9.1% of all maternal deaths in 1999, while constituting only 3.1% of all births in that year¹.

Table 11.6: Proportion of Home Births by Marzes, Armenia, 1998-1999

| Marzes of Armenia | 1998 | 1999 |
|------------------------|------------|------------|
| Aragatsotn | 13.9 | 13.5 |
| Ararat | 3.3 | 2.3 |
| Armavir | 8.5 | 5.3 |
| Gegharkunik | 14.6 | 15.4 |
| Lori | 0.8 | 0.3 |
| Kotayk | 1.8 | 2.4 |
| Shirak | 0.9 | 1.5 |
| Syunik | 1.1 | 0.8 |
| Vayots Dzor | 3.0 | 1.2 |
| Tavush | 1.5 | 1.1 |
| Yerevan | 0.9 | 0.3 |
| Armenia (total) | 3.1 | 2.7 |

Source: Ministry of Health, RA

5. Data Quality/Limitations

The data of 1998 national survey on antenatal care is based on recall of the respondents and thus, might be somewhat biased.

The accuracy of data from Ministry of Health annual reports depend on many factors, such as data collection and reporting procedures and thus, is difficult to assess. Also, population numbers used to calculate rates of antenatal care and obstetric care are possibly overestimated, since they are based on census data from 1989 and are not adjusted for documented widespread migration.

6. Comments/Conclusion

The decreasing number of obstetric beds in the hospitals reflects a combination of factors, including declining fertility and optimization of health facilities and should not be taken as a negative indicator. The rates of antenatal care and childbirth care are high in Armenia. However, the considerable decline in the rate of early antenatal care over the decade indicates the existence of problems, possibly connected with decreasing geographic and financial accessibility of antenatal care services. Particular attention should be given to reversing this trend, as negative health outcomes for mother and child are sure to follow.

Antenatal Care: Clearly Met

Childbirth Care: Clearly Met

Obstetric Care: Clearly Met

Early Antenatal Care: Partially Met [But Significantly Declining]

OB-GYN/Female Population: Clearly Met [Exceeds Actual Need]

OB Beds/Female Population: Clearly Met [Declining, but still Exceeds Actual Need]

7. References

1. Ministry of Health (direct communication)
2. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.
3. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.
4. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.

Goal 12. Newborns: Reduction of Low Birth Weight

- World Summit Goal: Reduction of the low birth weight (less than 2.5 kg) rate to less than 10 percent.
- Indicator:
 - ✓ Birth weight below 2.5 kg - proportion of live births that weigh below 2500 grams
- Target for Armenia: less than 10% is reached. Further decrease of LBW proportion

1. Definitions/Indicators

Definition of low birth weight in Armenia is consistent with WHO definition.

2. Data Sources

One of the main data sources for prevalence of low birth weight is the Ministry of Health data from health facilities' annual reports. Medical record forms are the primary sources of information for these reports, and thus, the accuracy of the data and its completeness depend on the quality of medical recording. The quality is generally considered satisfactory, and newborns are always weighed in all health facilities, although, an additional study is needed to evaluate the degree of accuracy of annual reporting. Also, these data do not include those LBW cases born out of medical facilities (home births).

Further data on home births is available from the Ministry of Health annual reporting. Midwives providing primary health care, are the primary sources of information on home deliveries. However, they do not report birth-weight of newborns born at home, and often these newborns are not weighed at all, thus, the proportion of low birth weight among home births still remains unknown from this source.

Another source that was used is household survey data based on mothers' reports on children's birth weight. The 1998 national study on the health and nutrition status of children and women in Armenia¹ was used for this purpose. This was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A representative sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

3. Trends

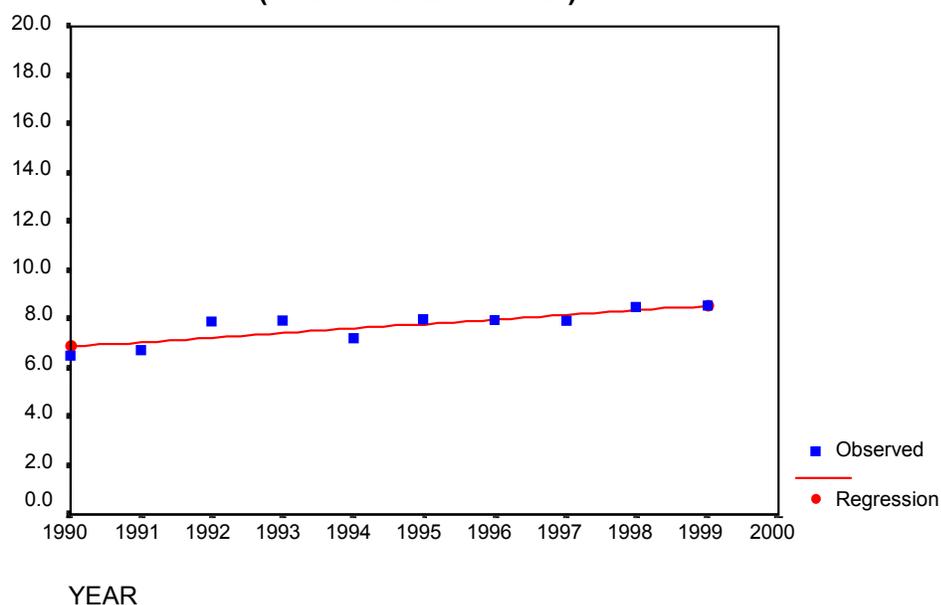
According to the Ministry of Health data the proportion of low birth weight children was lower than the World Summit goal of less than 10% during the whole decade. However, a trend of increase is evident (table 12.1). The regression line in Figure 12-1 shows an absolute increase of 1.65% (6.88 to 8.53%) over the decade, which is equal to a 24% increase. The proportion of low birth weight live births at home is not included in these numbers. However, according to the Ministry of Statistics data, the proportion of home births, although growing, is still not large enough to introduce a significant bias in the reported proportions of low birth weight (table 12.1).

Table 12.1: Proportion of live births in obstetric care facilities that weight below 2500 grams, and proportion of home births, 1990-99, Armenia

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| # of live births in obstetric care facilities | 80022 | 77535 | 69094 | 55141 | 46309 | 45430 | 45358 | 41785 | 38467 | 35961 |
| % of low birth weight, including: | 6.54 | 6.74 | 7.92 | 7.89 | 7.18 | 8.02 | 7.89 | 7.90 | 8.50 | 8.50 |
| % of birth weight less than 1000gr. | 0.14 | 0.14 | 0.12 | 0.09 | 0.08 | 0.12 | 0.19 | 0.3 | 0.2 | 0.3 |
| % of prematurity | 5.6 | 5.6 | 6.3 | 6.3 | 5.8 | 6.2 | 6.6 | 6.8 | 7.1 | 7.2 |
| # of home births | 138 | 174 | 758 | - | 3298 | 3361 | 2041 | 1700 | 1234 | 995 |
| % of home births out of all live births | 0.2 | 0.2 | 1.1 | - | 6.6 | 6.9 | 4.3 | 3.9 | 3.1 | 2.7 |

Source: Health and Care of Public Health. Statistical Collection, Ministry of Health of Armenia, Armenia, 1998, 1999; Ministry of Health, RA; Ministry of Statistics, RA

Figure 12-1: Proportion of Low Birth Weight in Armenia (% from all live births)



The observed increase in low birth weight can be explained by the difficulties Armenian families face.² The data from above-mentioned household survey are consistent with the official data on proportion of low birth weight. According to this source, out of all mothers having under-five

children, 7.83% reported that the child was born with less than 2,500gram weight. These data are provided in table 12.2.

Table 12.2: Prevalence of low (<2.5kg) birth weight in children under 5 years by population strata (n = 3390; missing values = 0)

| | % of birth weight (kg) | | |
|------------------------|------------------------|--------------|-------------|
| | < 2.5 | 2.5-3.8 | > 3.8 |
| Total | 7.83 | 84.62 | 7.55 |
| Urban Residents | 6.44 | 85.63 | 7.93 |
| Rural Residents | 9.90 | 83.07 | 7.03 |
| Urban Refugees | 7.65 | 85.02 | 7.34 |
| Rural Refugees | 9.23 | 83.76 | 7.01 |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

The apparent increase in low birth weight may also be indicative of the expanded official definition of live birth. As described in detail under Goal 1, in 1995 the Ministry of Health adopted the WHO definition for a live birth in its reporting requirements. The Ministry of Statistics uses an expanded definition of that used during the Soviet period, but it still does not include the full range of the WHO definition. The Ministry of Health data reported here does include those infants now categorized as a live birth who would have previously been excluded. Thus, the apparent increase in the incidence of low birth weight may also be an artifact of changes in the definition implemented in the mid 1990s.

4. Disparities

Premature birth is the main cause for low birth weight in Armenia. According to the Ministry of Health data, it constitutes 85% of all cases of low birth weight (table 12.1). According to the same source, the great majority of low birth weight children are born with weight of 1000-2449grams. Only 3.7% out of all low birth weight were born with less than 1000gram weight in 1999 (table 12.1). The main cause of morbidity in low birth weight children is intra-uterine hypoxia, which affects almost one-third of all premature children.³

Data on disparities between regions, between social groups or between genders are not available from the official sources. 1998 household survey data suggests that low birth weight is more common in rural areas than in urban areas. There were no differences between residents and refugees residing in the same area (see table 12.2).

5. Data quality/Limitations

As mentioned above, the main limitation of data on low birth weight prevalence is that the official proportions do not include the numbers of low birth weight children born at home. This limitation, however, could not introduce a large bias, as the proportion of home births in Armenia is still relatively small. The accuracy of Ministry of Health data on LBW is supported by findings of the 1998 nation-wide survey

6. Comments/Conclusions

Although the World Summit Goal for reduction of low birth weight rate less than 10 percent was reached in Armenia at the beginning of the decade, a slow, but steady increase (by 24%) in the rate of low birth weight babies was observed during the last decade. The main reason for this increase could be the deterioration of families' living standards observed in Armenia during the last decade connected with difficulties of transition period. Another explanation could be decreasing access to health services, including antenatal services, which is also closely related to socio-economic difficulties faced by the Republic during the decade.⁴ It is also possible that the gradual implementation of the revised expanded definition of a live birth in artificially inflating the observed rate.

LBW target: Clearly met [but potentially deteriorating]

7. References

1. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.
2. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.
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Goal 13. Women: Iron Deficiency Anemia

- World Summit Goal: Reduction of iron deficiency anemia in women by one-third of the 1990 levels
- Indicators:
 - ✓ Anemia: proportion of women aged 15-49 with hemoglobin levels below 12 grams/100ml blood for non-pregnant women, and below 11 grams/100ml blood for pregnant women
- Target for Armenia: Reduction of iron deficiency anemia in women.

1. Definitions/Indicators

The official definition differs from the standard for non-pregnant women by using a slightly smaller age range (15-45 years).

The definition of anemia prevalence in pregnant women is calculated as a percentage among all pregnant women. There is one more locally used definition of prevalence of anemia immediately before delivery, which is formulated as number of women with anemia per 1000 deliveries.

2. Data Sources

The main source of data used for this indicator was a 1998 national survey.¹ This was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A representative sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

Another source of data was the Ministry of Health, which annually receives relevant information from health facilities. The data from this source was limited to information on pregnant women. There was no information available from the Ministry of Health Annual Reports concerning the prevalence of anemia in non-pregnant women.

3. Trends

According to the findings of the 1998 national survey¹, 13.1% of non-pregnant women in fertile age (15-45 years old) had mild or moderate anemia (hemoglobin levels below 12 g/dL). This percentage was even higher in pregnant women: 16% had hemoglobin levels below 11 g/dL. However, there was essentially no severe anemia (hemoglobin levels below 7 g/dL) identified.

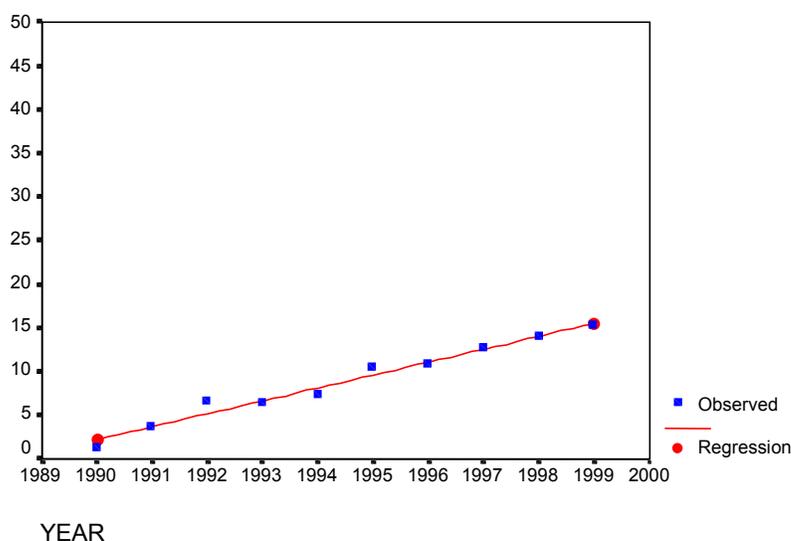
These findings on anemia prevalence among pregnant women are consistent with the Ministry of Health data^{2,3}. According to the latter reference, the prevalence of anemia among pregnant women has increased almost 12 fold during the decade, reaching levels of 15.3% in 1999 (table 13.1, figure 13-1). The regression line in figure 13-1 shows an increase of 13.2% (15.5% - 2.3%) in anemia prevalence among pregnant women over the decade. The rate of this increase was remarkably steady throughout the decade, despite an inflow of iron supplementation tablets through humanitarian aid during the last several years and the prescription of these tablets to pregnant women diagnosed with anemia⁴. Serious financial difficulties faced by the overwhelming majority of Armenian families during the last decade and high prices of products rich with iron and protein (particularly, meat products) may be responsible for this increase.

Table 13.1: Prevalence of anemia among pregnant women during pregnancy (% of all pregnancies) and immediately before delivery (rate per 1000 deliveries)

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------------|------|------|------|------|------|------|------|-------|-------|-------|
| % of anemia during pregnancy | 1.3 | 3.7 | 6.7 | 6.5 | 7.3 | 10.4 | 10.8 | 12.6 | 14.0 | 15.3 |
| Late anemia per 1000 deliveries | 9.5 | 37.1 | 45.6 | 65.5 | 73.1 | 58.3 | 44.7 | 115.4 | 110.0 | 121.5 |

Source: Ministry of Health of Armenia

Figure 13-1: Prevalence of anemia among pregnant women (%)



4. Disparities

According to the 1998 survey findings, the prevalence of anemia in non-pregnant women was higher in rural areas than in urban areas. Particularly high prevalence (16.7%) was registered among rural refugees (table 13.2).

Table 13.2: Prevalence of anemia (Hb < 12g/dl) in non-pregnant women aged 15-45 by population strata, 1998

| Total (weighed) | Urban residents (n=541) | Rural residents (n=669) | Urban refugees (n=435) | Rural refugees (n=563) |
|-----------------|-------------------------|-------------------------|------------------------|------------------------|
| 13.07% | 11.83% | 14.8% | 9.66% | 16.69% |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

The prevalence of anemia in pregnant women was higher in urban areas and among refugees (table 13.3). Anemia rates increased as the pregnancy progressed (table 13.4). This is particularly worrisome, since late-stage anemia is a risk factor for hemorrhage during delivery, the most frequent cause of maternal death in Armenia⁴.

Table 13.3: Prevalence of anemia (Hb < 11g/dl) in pregnant women aged 15-45 by population strata, 1998.

| Total (weighed) | Urban residents (n=51) | Rural residents (n=51) | Urban refugees (n=34) | Rural refugees (n=41) |
|-----------------|------------------------|------------------------|-----------------------|-----------------------|
| 15.98% | 17.65% | 11.76% | 20.59% | 21.96% |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Table 13.4: Prevalence of anemia (Hb < 11g/dl) in pregnant women aged 15-45 by stage of pregnancy (weighted percentages for population)

| I trimester | II trimester | III trimester |
|-------------|--------------|---------------|
| 10.77% | 14.04% | 29.09% |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

This increasing tendency of anemia as the pregnancy progresses is not always evident from the Ministry of Health data. The primary sources for this data are maternity hospitals where the overwhelming majority of deliveries occur. The data generated from the maternity hospital's annual reports is provided in table 13.1.

There are considerable regional differences in anemia prevalence. Among non-pregnant women, the prevalence of anemia was the highest in Syunik marz (21.5%) followed by Tavush (19.7%) and Kotayk (17.8%). The lowest prevalence (8-9%) of anemia was registered in Armavir, Vayots Dzor and Yerevan (table 13.5). Among urban regions, Yerevan had the lowest rate of anemia.¹

Table 13.5: Prevalence of anemia (Hb< 12g/dl) in non-pregnant women 15-45 years by Regions of Armenia, 1998

| | |
|-----------------|--------|
| Armenia (total) | 13.14% |
| Yerevan | 9.15% |
| Aragatsotn | 14.58% |
| Ararat | 16.37% |
| Armavir | 8.27% |
| Gegharkunik | 14.55% |
| Lori | 13.92% |
| Kotayk | 17.84% |
| Shirak | 12.98% |
| Syunik | 21.46% |
| Vayots Dzor | 8.37% |
| Tavush | 19.67% |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Regional differences in anemia prevalence among pregnant women are available from the Ministry of Health annual reports. According to this source, again, Syunik is the most affected area. The least affected area is Gegharkunik Marz (table 13.6).²

Table 13.6: Prevalence of anemia (Hb< 11g/dl) during pregnancy and immediately before delivery, 1999

| | During pregnancy (% of all pregnancies) | Before delivery (per 1000 deliveries) |
|-----------------|--|--|
| Armenia (total) | 15.3 | 121.5 |
| Yerevan | 14.1 | 87.1 |
| Aragatsotn | 14.1 | 84.7 |
| Ararat | 15.3 | 147.1 |
| Armavir | 26.3 | 162.5 |
| Gegharkunik | 3.9 | 49.0 |
| Lori | 16.5 | 110.3 |
| Kotayk | 21.6 | 203.1 |
| Shirak | 12.6 | 172.9 |
| Syunik | 20.7 | 190.1 |
| Vayots Dzor | 8.1 | 74.6 |
| Tavush | 14.9 | 71.4 |

Source: Ministry of Health

5. Data Quality/Limitations

The 1998 national study had several methodological limitations, but none that cast doubt on the magnitude of the findings. The Ministry of Health data may be rather incomplete and/or biased because of possible shortcomings during all stages of data gathering and reporting.

6. Comments/Conclusion

The dramatic 12-fold increase in anemia over the decade, both among pregnant and non-pregnant women, is alarming. These increases occurred despite continuous efforts at distributing iron supplements and medications to pregnant women at high risk. These increases are closely related to the increasingly poor diet brought about by the continued bleak economic situation

Anemia-Women: Clearly Unmet

Anemia- Pregnant Women: Clearly Unmet

7. References

1. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.
2. Ministry of Health (direct communication)
3. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.
4. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.

Goal 14. Children and Women: Iodine Deficiency Disorders

- World Summit Goal: Virtual elimination of iodine deficiency disorders.
- Indicators:
 - ✓ Iodized salt consumption: proportion of household consuming adequately iodized salt
 - ✓ Low urinary iodine: proportion of population (school age children or general population) with urinary iodine levels below 10 micrograms/100ml urine
- Target for Armenia:
 - Reaching elimination of iodine deficiency disorders

1. Definitions/Indicators

The definition of iodized salt consumption is consistent with WHO definition.

The definition of “low urinary iodine” as urinary iodine levels below 10 micrograms/100ml is the consistent with the standard, but the population is different: under five children instead of school age children or general population.

2. Data Sources

The only available source of information for above-mentioned indicators was the 1998 national study on the health and nutritional status of children and women in Armenia¹. This was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A representative sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study. In each household, iodine content of salt was evaluated by testing the content of potassium iodate or potassium iodide. Iodine excretion was measured in 10ml urine sample collected in all children 6-59 months of age residing in the household.

3. Trends

According to the 1998 study¹, 70% of households were using iodized salt (table 14.1). However, low values of urinary iodine excretion were observed in 31.7% of the children aged 6-59 months (table 14.2). It is difficult to estimate the dynamics of these indicators because of the lack of comparable previous data.

Table 14.1: Consumption of Iodized Salt by Population Strata (1998)

| Total | Urban residents | Rural residents | Urban refugees | Rural refugees |
|----------------|-----------------|-----------------|----------------|----------------|
| 69.99 % | 68.44 % | 74.82 % | 57.73 % | 62.19 % |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Table 14.2: Urinary Excretion of Iodine in Children 6-59 months of age (n=2596)

| Severe ($<20 \mu\text{g/L}$) | Moderate ($20-49 \mu\text{g/L}$) | Mild ($50-99 \mu\text{g/L}$) | Normal ($100-1000 \mu\text{g/L}$) | Elevated ($>1000 \mu\text{g/L}$) |
|---|---------------------------------------|-----------------------------------|--|---------------------------------------|
| 0.79 % | 8.11 % | 22.81 % | 68.28 % | 0.01 % |
| Total % of children with low iodine excretion 31.71 % | | | | |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

Although goiter prevalence is not recommended for assessing progress toward this goal, this is the only available data from a previous nation-wide study conducted in 1995, which found goiter in 50.4% of pregnant women and in 40% of 6-12 years old children². The 1998 national survey¹ found similar high rates of palpable thyroid in one woman out of four, with 6% of the women having a visible goiter (table 14.3).

Table 14.3: Prevalence of Goitre (palpable) in Women 15-45 years by Marz, Armenia, 1998 (n=2569)

| | |
|------------------------|----------------|
| Armenia (total) | 30.24 % |
| Yerevan | 27.67 % |
| Aragatsotn | 30.95 % |
| Ararat | 29.67 % |
| Armavir | 37.44 % |
| Gegharkunik | 35.75 % |
| Lori | 13.00 % |
| Kotayk | 36.45 % |
| Shirak | 37.58 % |
| Syunik | 48.04 % |
| Vayots Dzor | 43.11 % |
| Tavush | 22.35 % |

Source: The health and nutritional status of children and women in Armenia.

The observed high prevalence of iodine deficiency disorders can be explained by interruptions in salt iodination during the last decade. Iodination of salt in Armenia started in 1974 but was interrupted by the economic collapse in the early 1990s. Only with UNICEF support in 1997 was the Yerevan Salt Factory able to modernize and resume production, this time using potassium iodate instead of potassium iodide. Unfortunately, not all salt available in the marketplace is iodized. And, although legislation exists that prohibits the importing of uniodized salt, enforcement is poor and more than 2000 tons of uniodized salt are imported annually.³

4. Disparities

According to the 1998 survey¹, low excretion of urinary iodine in children 6-59 months of age was more common in rural areas than in urban areas. The prevalence of low excretion rural children was 39%, while among urban residents this prevalence was 27% (table 14.4). The similar, but milder, urban-rural difference in prevalence of low iodine excretion was observed between rural and urban refugees (32% vs. 26%).

Table 14.4 Prevalence of Low Urinary Iodine (<100 microgram/L) in Children <5 years by Population Strata, 1998 (n=2596)

| Total | Urban residents | Rural residents | Urban refugees | Rural refugees |
|-------|-----------------|-----------------|----------------|----------------|
| 31.7% | 27.3% | 39.0% | 26.2% | 32.1% |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

In the majority of studied population only mild iodine deficiency was observed. Less than 1% had severe iodine deficiency (table 14.2). The prevalence of low iodine excretion was lower (29%) in children aged 2-5 years, perhaps, since they are more likely to consume iodized salt as part of the family diet (table 14.5).

Table 14.5 Prevalence of Low Urinary Iodine in Children <5 years by Age, 1998 (n=2596)

| | < 24 months (%) | > 24 months (%) |
|-----------------------|-----------------|-----------------|
| Severe (<20 µg/L) | 1.1 | 0.6 |
| Moderate (20-49 µg/L) | 9.0 | 7.6 |
| Mild (50-99 µg/L) | 26.2 | 20.8 |
| Total | 36.3 | 29.0 |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998.

UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998

With respect to regional differences, the highest prevalence of low urinary excretion of iodine in children 6-59 months of age was observed in northern marzes of Gegharkunik (52%), Tavush (45%), and Shirak (41%), while the lowest prevalence was observed in Yerevan (21%). The relatively low prevalence of iodine deficiency in Southern mountainous regions (less than 30%), perhaps, reflects recent trends of iodized salt consumption to combat what was endemic iodine deficiency. The continued high prevalence of goiter in women residing in these southern regions (Syunik, Vayots Dzor) serve as a reminder that this problem has only recently been addressed (table 14.3).

5. Data Quality/Limitations

The 1998 national study had several methodologic limitations, but none that cast doubt on the magnitude of the findings.

6. Comments/Conclusions

The recent data show that Armenia still has a problem connected with low iodine consumption. According to 1998 survey findings, iodized salt was the main source of iodine for the population, but 30% of domestic salt was not iodized and 31.7% of children aged 6-59 months had low iodine excretion. It is difficult to judge about the trends in iodine consumption levels over the decade because of the lack of comparable data from previous years, although one can assume some improvement during the last years due to rehabilitation of salt iodination system since 1997.

Iodized Salt use: Partially met

Excreted Iodine: Substantially unmet

7. References

1. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.
2. Toromanian, E.N., Alexanian, M.A., Gevorkian, A.A., Narimanyan, N.Z., Prevalence of Iodine Deficiency Disorders in the Republic of Armenia. *Armenian Monthly Public Health Report*. February 1996. Vol. 4 (No. 2)
3. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.

Goal 15. Children and Women: Vitamin A Deficiency & Supplements

- World Summit Goal: Virtual elimination of vitamin A deficiency and its consequences, including blindness
- Indicators:
 - ✓ Children receiving Vitamin A supplements: proportion of children 6-59 months who have received a high dose Vit. A supplement in the last 6 months
 - ✓ Mothers receiving Vit A supplements: proportion of mothers who received a high dose Vit A supplement before infant was 8 weeks old
 - ✓ Low Vit A: Proportion of children 6-59 months with serum retinol below 20 micrograms/100ml)
- Target for Armenia:
 - Maintaining the existing satisfactory situation in terms of vitamin A.

1. Definitions/Indicators

The definition of low vitamin A in the referred source is consistent with the given definition. The remaining two definitions are not in use.

2. Data Sources

Vitamin A deficiency is not considered a public health problem in Armenia,¹ and there is no ongoing surveillance data for this. Information about the first two indicators was obtained from the Ministry of Health.

The only available source of information for the indicator of “low vitamin A” is the 1998 national study on the health and nutritional status of children and women in Armenia². This was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A representative sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

3. Trends

Since Vitamin A deficiency is not considered a problem in Armenia, there is no practice of vitamin A supplementation of children or mothers.² Findings of the 1998 nutritional survey³ confirmed the belief of satisfactory situation with vitamin A in Armenia. They showed that serum retinol in children 6-59 months of age was well within the normal range ($43 \pm 12 \mu\text{g/dL}$), although children's vision impairment at night time was reported by 3% of mothers. Serum retinol values lower than $20 \mu\text{g/dL}$ were observed in less than 1% of the children (table 15.1). Vitamin A deficiency is considered a public health problem when more than 10% of the population has serum retinol below $20 \mu\text{g/dL}$,⁴ so 1% is an acceptable level.

There is no available information on this indicator from early 1990s, which makes the estimation of trends over the decade impossible.

4. Disparities

Findings of the 1998 nutritional survey showed that the prevalence of low serum retinol was significantly lower in urban resident children than in rural residents and refugees. However, it was in normal range in all population groups (table 15.1).

Table 15.1: Proportion of Children 6-59 months with Serum retinol below 20 micrograms/100ml (n=2341)

| Weighted Total | Urban residents | Rural residents | Urban refugees | Rural refugees |
|----------------|-----------------|-----------------|----------------|----------------|
| 0.58 % | 0.20 % | 1.03 % | 0.84 % | 1.04 % |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998. Page 72. (Primary source: nationwide survey, 1998)

There were no gender differences in serum retinol levels (table 15.2).

Table 15.2: Prevalence of Children 6-59 months of age with low Serum Retinol by gender and by Population Strata

| | Boys (n=1258) | Girls (n=1083) |
|---------------------------|---------------|----------------|
| Urban Residents (%) | 0 | 0.45 |
| Rural Residents (%) | 0.58 | 1.49 |
| Urban Refugees (%) | 1.11 | 0.48 |
| Rural Refugees (%) | 0.84 | 1.26 |
| Weighted Total (%) | 0.29 | 0.92 |

5. Data Quality/Limitations

The 1998 national study had several methodological limitations, but none that cast doubt on the magnitude of the findings.

6. Comments/Conclusions

On the basis of available data it might be concluded that there is no vitamin A deficiency in under-five children in Armenia currently. However, lack of well-balanced diet and limited variety of food items consumed by the majority of Armenian families during the recent years⁵ could eventually lead to deterioration of the vitamin A situation.

Supplementation-Children: N/A

Supplementation-Mothers: N/A

Low Vitamin A: Clearly met

7. References

1. *Situation Analysis of Children and Women in Armenia*. Government of Armenia, UNICEF, 1994.
2. Communication with Ministry of Health, RA
3. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.

4. *Indicators for Assessing Vitamin A Deficiency and their Application in Monitoring and Evaluating Intervention Programmes. Micronutrient Series.* WHO/NUT/96.10. WHO, Geneva
5. *Social Snapshot of Poverty, National Report.* Ministry of Statistics of Armenia, World Bank, Republic of Armenia, 1996.

Goal 16. Breastfeeding: Rates, Lengths of Time, & Numbers of BFHI

- World Summit Goal: Empowerment of all women to breast-feed their children exclusively for 4-6 months and to continue breast feeding, with complementary food, well into the second year.
- Indicators:
 - ✓ Children exclusive breast feeding rate: proportion of infants less than 4 months who are exclusively breast fed
 - ✓ Timely complementary feeding rate: Proportion of infants 6-9 months who are receiving breast milk and complementary food
 - ✓ Continued breast feeding rate: proportion of children 12-15 months and 20-23 months who are breast feeding
 - ✓ Number of baby-friendly facilities: Number of hospital and maternity facilities which are designated as baby-friendly according to BFHI criteria
- Target for Armenia:
 - Overall access to essential support and information for all mothers enabling them to breast feed their children exclusively for 4-6 months and to continue breast feeding, with complementary food, well into the second year

1. Definitions/Indicators

Definition of exclusive breastfeeding in Armenia is consistent with the WHO definition. This definition was used in the National Survey and Comparative Study of Infant Feeding Practices in Armenia (1993 and 1997).^{1,2} However, there are no official statistics on under-four months exclusive breastfeeding rate. Instead, data on proportion of children who receive full breastfeeding for at least four months (out of all children who complete their first year of life during the given year), is available from the Ministry of Health annual reports. This indicator was included in the annual report forms since 1995. Before that time a slightly different indicator of “natural feeding for at least four months” was in use. While definition of “full breastfeeding” is consistent with WHO definition and includes both exclusive breastfeeding and predominant breastfeeding (breast milk plus water and/or other non-nutritive liquids), definition of “natural breastfeeding” is somewhat different. It includes full breastfeeding and/or full breastfeeding plus a small proportion (<one fifth of milk volume per day) of milks other than breastmilk. In this sense, official data on breastfeeding during the first half of the decade is not completely comparable with the data after 1995.

The definition of timely complementary feeding rate used in the above-mentioned surveys^{1,2} is consistent with WHO definition. No official surveillance data on this indicator is available.

The definition of continued breastfeeding rate is almost the same as WHO definition, with the only difference in age range. In Armenia, it is defined as the proportion of children who were still breastfeeding at 12 months of age out of all children of this age. Data on this indicator is available from both official surveillance (Ministry of Health annual reports) and aforementioned surveys.^{1,2} However, information is available only for one-year duration of breastfeeding. There is no available information on two-year duration.

Criteria for Baby-Friendly Hospitals are the same as WHO criteria.

2. Data Sources

Ministry of Health annual report data is the main official source on breastfeeding indicators. These data are retrospective and based on medical records in well-child record forms. Its accuracy depends on both accuracy/completeness of recording and quality of annual data reporting.

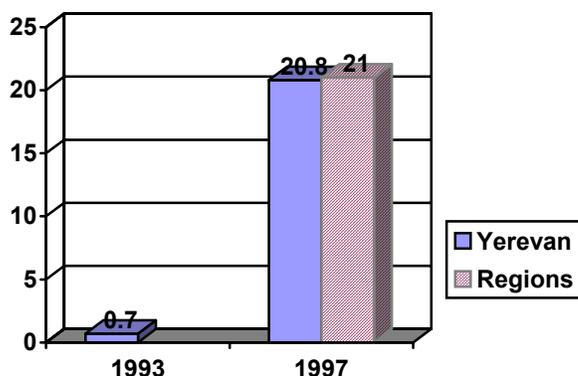
Surveys are another source of information that may be used also to validate the annual report data. Progress in breastfeeding promotion in Armenia was evaluated by two surveys of Infant Feeding Practices carried out in 1993 (before the initiation of National Breastfeeding Promotion Program) and in 1997 (after four years of implementation of the National Breastfeeding Promotion Program). The USAID mission in Armenia funded the 1993 survey¹. A sample of 482 mothers (of infants aged 0-12 months) selected by random sampling procedure from Yerevan was interviewed. The 1997 survey was funded by UNICEF, but utilized the same survey instrument and was carried out by the same principal investigator (K. Hekimian). A randomly drawn sample of 400 mothers of infants from Yerevan and 300 mothers of infants from different regions of Armenia was enrolled in this survey. The data were used to detect differences both between 1993 and 1997 data for Yerevan and between Yerevan and the regions outside Yerevan for 1997.

The third source is the 1998 national study on the health and nutritional status of children and women in Armenia,³ which was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A representative sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

3. Trends

As previously mentioned above, the only available source of information on exclusive breastfeeding rate is the survey data.^{1,2} According to the findings of these surveys, the proportion of infants less than 4 months who were exclusively breast fed was only 0.7% in Yerevan in 1993. In 1997 this proportion increased to 20.8%. Meanwhile, proportion of infants less than 4 months who were exclusively breastfed was almost similar in Regions - 21.0% (figure 16.1). Similarity of this value in Yerevan and in the outlying regions allows us to use it as an estimate of the nationwide prevalence. The observed 30-fold increase of this proportion can be explained by the fact that an abrupt change of recommended infant-feeding practices (particularly, in terms of the time of introduction of water into infant's diet) took place during this period. Thus, the projection of this increase over the decade is not reasonable. One can expect that this increasing trend will abate over time without reinforcement.

: Exclusive Breastfeeding Rates (National



In this sense, the full breastfeeding rate could be more informative for evaluating the progress that took place in the sphere of breastfeeding practices. According to official statistics,⁴ a consistent and stable increase of the rate of full breastfeeding at 4 months of age was observed since 1994, after an abrupt decline of breastfeeding rates during the early 90s (table 16.1). Since the WHO definition of full breastfeeding was introduced into Ministry of Health official statistics in 1995, the dynamics of these data was estimated through regression line for the five-year period of 1995-1999 (figure 16.2). According to this line, an increase of the full breastfeeding rate by 65.8% of the initial (1995) level or by an absolute proportion of 22.1% was observed (55.7% - 33.6% = 22.1%). However, continuous efforts should be made to maintain this increase during the coming years.

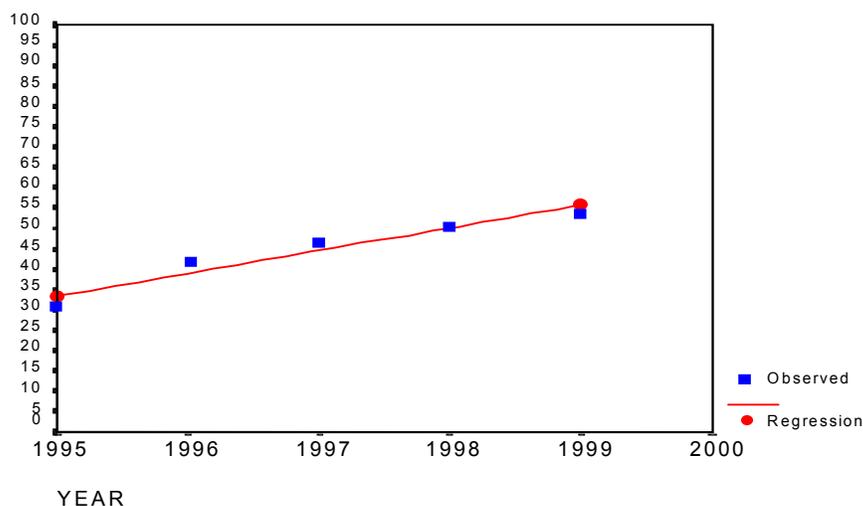
Table 16.1: Full (exclusive + predominant), Partial, and Continued (>12 months) Breast Feeding Rates (% of all children who became 12 months old during the given year)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|
| Full Breast Feeding at 4 months | 57.0* | 47.6* | 37.0* | 23.0* | 20.0* | 30.6 | 41.7 | 46.5 | 50.3 | 54.0 |
| Partial Breast Feeding at 4 months | - | - | - | - | - | 34.4 | 32.6 | 31.1 | 33.2 | 31.2 |
| Continued Breast Feeding (>12 months) | - | - | - | - | - | 9.2 | 9.9 | 11.7 | 16.4 | 21.2 |

Source: Ministry of Health Annual Reports (primary source: well child record forms)

* Data for 1990-1994 reflect the situation with “natural feeding” (Soviet definition of breastfeeding that includes full breastfeeding + a small proportion (<one fifth of milk volume per day) of milks other than breastmilk. WHO definition of full breastfeeding was adopted and included in the annual report forms in 1995.

Figure 16-2: Full Breast Feeding Rate at 4 months (%)

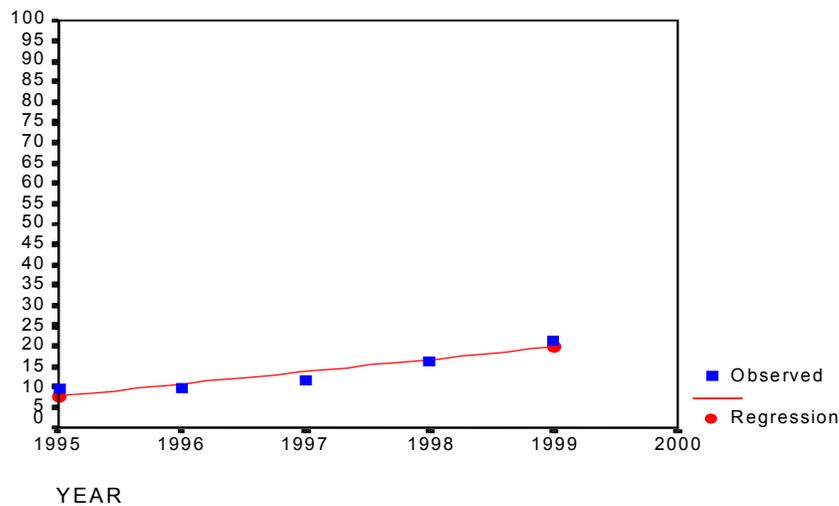


The only source for timely complementary feeding rate is the aforementioned surveys of infant feeding practices.^{1,2} According to their findings, the rate of complementary feeding in Yerevan was 22% (29 out of 130) in 1993 and 34% (33 out of 96) in 1997. Thus, an absolute increase of 12% (or 54.5% relative increase over the initial level) was observed between 1993 and 1997. This increased rate was still rather low in 1997, indicating a need for further improvement.

Continued breast feeding rate for one-year duration is available both from the surveys^{1,2} and from the official statistics. The dynamics of this rate, according to the Ministry of Health data⁴ is shown in table 16.1 and in figure 16-3. In the last, the regression line shows an increase by 159.2% of the initial level or by absolute proportion of 12.1% (7.6%- 19.7%) over the actual period of 1995-1999. Again, the projection of this increasing trend over the decade seems unreasonable because of short duration of the reporting and inherent variability of this rate. It is interesting to mention that the findings of 1998 nutritional survey³ detected an opposite tendency of very early introduction of complementary foods in children's diet (mean age of introduction of cow's milk, crushed fruits and vegetables, porridges, potatoes, and biscuits was 3- 5 months).

The survey data^{1,2} shows more than three-fold increase of the continued breast feeding rate from 1993 to 1997. According to these surveys, in 1993 only 11% of mothers reportedly still breastfed their infants at 12 months of age, while in 1997 this proportion increased to over 37%. The higher proportions of still breastfeeding at 12 months observed in these surveys (when comparing with the Ministry of Health data) may indicate a considerable underestimation of these rates in the official annual reporting. This may be partially explained by relatively poor recording of infants' feeding practices in well-child record forms at 12 months of age. The findings of 1998 nutritional survey³ show a value of continued breastfeeding rate (22.3%) that is between the official numbers and the data of 1997 survey² of Infant Feeding Practices.

Figure 16-3: Continued Breast Feeding at 1 year (%)



As previously mentioned, continued breast feeding rate for two-year duration is not available.

With respect of number of Baby Friendly facilities, two Maternity Hospitals, both located in Yerevan, reached this status during 2000. Several other hospitals have declared their intention to become Baby Friendly.⁴

4. Disparities

Ministry of Health data for 1999 showed regional disparities in full breastfeeding rates and in continued breastfeeding rates (over 12 months). The data are summarized in table 16.2. The differences between marzes are considerable in terms of breast-feeding duration, with more than three-fold difference between the highest and lowest rates (31.1% in Vayots Dzor and 9.8% in Shirak).

Breastfeeding rates were slightly higher for female infants than male infants.

The highest prevalence (33.6%) of continued breastfeeding rate (over 12 months) was observed in rural refugees, while other population groups (urban residents, rural residents and urban refugees) were not significantly different from each other in terms of this rate.

Mean age of introduction of complementary foods was not different between urban and rural areas or between residents and refugees.³

5. Data Quality/Limitations

Although each single source has its limitations that affect the quality of data, the combination of these sources yields a realistic picture of the situation with breastfeeding in Armenia.

6. Comments/Conclusions

Available data show that considerable improvement in breastfeeding rates took place during the second half of the decade in Armenia as a result of the implementation of National Breastfeeding

Promotion Program. However, some important indicators such as exclusive breastfeeding rate, timely complementary feeding rate, and continued breastfeeding rate are still low and should be targeted for further improvement. Mothers still do not receive sufficient help and support to overcome the problems that they may face during breastfeeding. The majority of health professionals are still not skilled enough to provide necessary help to lactating women. Movement towards Baby Friendly Hospital Initiative implementation also needs to be enforced.

Exclusive Breastfeeding: Partially Met
Timely Complementary Feeding: Partially Met
Continued Breastfeeding: Partially Met
Baby Friendly Hospitals: Substantially Unmet

7. References

1. Hekimian, KM, *Infant Feeding Practices in Armenia: A study of Breastfeeding, Formula Use and Feeding During the Episodes of Diarrhea*. October 31, 1993.
2. Hekimian, KM, *Infant Feeding Practices in Armenia: Report on Comparative Study and National Survey*. American University of Armenia Center for Health Services Research, Funded by UNICEF/Armenia, June, 1997.
3. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.
4. Communication with Ministry of Health, RA

Goal 17. Growth Promotion and Monitoring

- World Summit Goal: Growth promotion and its regular monitoring to be institutionalized in all countries by the end of the 1990s.
- Indicators: No specific indicator

1. Definitions/Indicators

As no indicators were specifically defined, the following were selected: a) Coverage by primary care services; and b) Compliance with growth monitoring standards.

2. Data Sources

The main source of information was Ministry of Health, which provided an update of existing situation and trends in growth monitoring.¹

A second source of information was an evaluation of clinical practice guidelines related to improving well-child care.² The pre-post design evaluation was conducted in one Yerevan and one Regional primary health care facility. Medical records, direct observations, and interviews with health care providers and patients were used to gather data. The assessment of quality was done by calculating a performance score based on the percentage of certain items performed during the visit, including growth measurement and recording.

3. Trends

According to the available information from Ministry of Health, almost 100% of children in the Republic are served by primary health care services. Well-child care is an important component of this service that assumes both regular visits to primary care units by the child and home visits made by health care provider.

According to existing rules (MOH decree No. 60), children should be weighed monthly during the first year of life, four times during the second year, two times during the third year and once a year thereafter.¹ The table of normal weights (heights) used to judge appropriate growth is included as table 17.1. Practice, however, routinely deviates from these standards as indicated by a recent evaluation of well-child care in primary health care units. One unit each in Yerevan and Artashat Region² were assessed. The average number of well-child visits was 9.7 during the first year of life, falling short of the recommended 14. The average for the Yerevan clinic was lower than for the Regional clinic (8.4 vs. 10.6). The same study revealed that child weight was recorded only in 61% of those well-child visits, with a higher proportion in the Yerevan clinic (74% versus 24-28%). Despite the quite limited generalizability of these findings, they can serve as evidence of non-compliance with existing policies.

Table 17.1: Average growth of weight and height during the first year of life (for children born with normal weight).

| Age (months) | Monthly weight growth (gram) | Weight growth during the whole previous period (gram) | Monthly height growth (cm) | Height growth during the whole previous period (cm) |
|--------------|------------------------------|---|----------------------------|---|
| 1 | 600 | 600 | 3 | 3 |
| 2 | 800 | 1400 | 3 | 6 |
| 3 | 800 | 2200 | 2.5 | 8.5 |
| 4 | 750 | 2950 | 2.5 | 11 |
| 5 | 700 | 3650 | 2 | 13 |
| 6 | 650 | 4300 | 2 | 15 |
| 7 | 600 | 4900 | 2 | 17 |
| 8 | 550 | 5450 | 2 | 19 |
| 9 | 500 | 5950 | 1.5 | 20.5 |
| 10 | 450 | 6400 | 1.5 | 22 |
| 11 | 400 | 6800 | 1.5 | 23.5 |
| 12 | 350 | 7150 | 1.5 | 25 |

Source: Studenikin, M.Yu., Ladodo, K.S.: Nutrition of Young Children, Moscow, 1991

There are no hard data regarding how often children are currently being seen after infancy. Utilization of primary care services, especially those not covered under the basic benefits package, has dropped in recent years. It is assumed that some parents avoid using health care services for well-child visits due to the perceived necessity to make informal payments.³ Current efforts of the Ministry of Health, supported by international development organizations, specifically target developing the primary care and family medicine infrastructure.

Use of growth charts instead of tables are needed as the charts are considered better visual tools to judge the dynamics and patterns of child growth.⁴ Several attempts have been made by different child health promotion programs to introduce the WHO prototype growth chart⁵ in primary pediatric care services, including the National Breastfeeding Promotion Program⁶, Program of Healthy Child implemented by Armenian Red Cross Society and MOH in Gegharkunik (Vardenis Region)⁷, Program on Mother and Child Food Security implemented by IESP South Armenia (GTZ) and the Armenian Family Health Association in Syunik (Sisyan Region)⁸, among others.

One major effort to improve the quality and efficiency of well-child care visits was the initiation of the Primary Pediatric Care Pilot Project (1997) developed through the joint efforts of the Ministry of Health and AmeriCares. The project was implemented in several primary health care facilities with UNICEF support. Evaluation of the quality of care in two facilities involved in this project showed a substantial increase in providers' performance scores from 28 (out of 100) at baseline to 63 at post-test.² The Ministry of Health is currently considering expansion of this project nation-wide, in concert with on-going health care reforms focusing primary health care.³

The project introduced a new set of well-child care protocols that included lowering the recommended number of well-child visits while raising the quality of health care provision at each visit.⁹ According to these protocols, children should be weighed 8 times during the first year

of life, three times during the second year, and once a year thereafter. The revised protocol called for the implementation of combined growth charts that contain graphs for weight for age, length for age, weight for length, and head circumference for age both for girls and for boys.¹⁰ A concern with the use of growth charts is a lack of national norms. The current economic climate and multitude of competing priorities make development of an Armenian normative chart quite impractical.

4. Disparities

No data.

5. Data Quality/Limitations

The available data is of reasonable quality.

6. Comments/Conclusions

There is ongoing growth-monitoring system in the Republic. Tables of normal growth patterns are used as standards for comparison. Although almost all children are served by the primary health care system, parents and clinicians do not adhere to compliance with established standards. Several attempts have been made to introduce more appropriate growth charts, but even these new charts lacked a normative Armenian population, bringing into questions its validity.

Coverage by Primary Care Services: Substantially Met [geographic and financial barriers are an increasing concern]

Compliance With Growth Monitoring Standards: Partially Met

7. References

1. Communication with Ministry of Health, RA
2. McPherson, R.A. *The Use of Clinical Practice Guidelines to Improve Provider Performance of Well-child Care in Armenia* (PhD Dissertation) Johns Hopkins University, Baltimore, Maryland, 1999.
3. Situation Analysis of Children and Women in Armenia. Government of Armenia, UNICEF, 1994.
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5. Growth Chart, A tool for use in infant and child health care. World Health Organization, Geneva, 1986.
6. *Breastfeeding Counselling: A Training Course*. World Health Organization, UNICEF, WHO/CDR/93.4, UNICEF/NUT/93.2
7. Healthy Infant Feeding Practices and Growth Monitoring, A Training Manual for Nurses. Armenian Red Cross Society, MOH, 1998 (in Armenian).
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10. Hamill, PVV, Drizd TA, Johnson, CL, Reed RB, Roche AF, Moore WM. Physical growth: National Center for Health Statistics percentiles. *American Journal of Clinical Nutrition*, 32:

607-629, 1979. (Data from the National Center for Health Statistics (NCHS) Hyattsville, Maryland).

11. Studenikin, M.Yu., Ladodo, K.S.: *Nutrition of Young Children*, Moscow, 1991.

Goal 18. Food Security

- World Summit Goal: Dissemination of knowledge and supporting services to increase food production to ensure household food security
- Indicator: No specific indicator

1. Definitions/Indicators

As no specific indicators were defined, two relevant, available indicators were selected: a) Actual consumption vs. Minimal Subsistence Budget; and b) Actual consumption of food (dollars and/or calories).

2. Data Sources

Several Ministry and International Agency sponsored reports provide an accurate depiction of the economic and food status of the population. Among these are the 1999 Human Development Report¹ and a Social Snapshot of Poverty² report.

3. Trends

It is widely known that the amount and structure of consumption are key indicators of the population's living standards and quality. The available data show that during the last decade the Armenian population's well being, once judged against the standards of developed countries, has deteriorated to a general poverty level comparable to developing nations. In 1988 the average consumption of the population was 147% of the minimal subsistence budget (MSB), the minimal budget needed to secure rational consumption. In 1998, consumption had dramatically declined to only 38% of MSB.¹ Corresponding to this decline was the increasing percentage of consumption spent on food: rising from 47% in 1988 to 72% in 1998 (table 18.1). The average salary amounts to about half of the MSB. Minimal salaries and pensions are 8-11% of the MSB.

Table 18.1: Percentage of actual consumption spent on food in Armenia

| | 1988 | 1993 | 1998 |
|---|------|------|------|
| Minimal Subsistence Budget in USD (per month per capita) | 55 | 55 | 66 |
| Actual consumption in USD (per month per capita) | 81 | 13 | 25 |
| Percentage of actual consumption spent on food (%) | 47 | 87 | 72 |
| Ratio of actual consumption to MSB (%) | 147 | 24 | 38 |

Source: Human Development Report, Armenia, 1999, Five Years of Human Development in Armenia

In the mid-1980s, in the relative prosperity of the Soviet period, food consumption met or exceeded norms. Consumption of these products drastically declined during the ensuing transition to a free market economy, but not uniformly across the population. This imbalance in consumption has further deteriorated in recent years. According to the data of Household Budget Survey,² consumption of meat products, dairy products, fruits, fish products, eggs and vegetables was several times less than the defined rational norms. In 1991, daily energetic value of consumed food totaled 2181 kilocalories, while in 1994 it was only 1599, well below recommended levels.

An attempt to study the situation of food security was initiated in 1996 by the Department of Statistics with technical assistance from the World Bank. Included in this survey were 5000 randomly selected households from all Marzes. According to the results, the largest proportion of household expenditures, 37% of the total food expenditures, went to purchase bread and cereals. There was a positive association between the extent of poverty and the proportion of expenses on bread to total expenditures. This proportion reached the level of 73% among the extremely poor and was 31% among the most prosperous.

4. Disparities

The Department of Statistics study revealed that rural population produced a majority (65-70%) of the food they consumed. The population traditionally eats seasonal foodstuffs, preserving (canning, drying, etc) excess foodstuffs for the winter. Bread and bread products, potatoes, oil and lard were the most frequently consumed food products. Consumption of products such as meat, dairy products, fruits and vegetables was very low. Aggregated energetic value of the typical diet totaled 2100 kilocalories, 65% of which was attributed to bread and bread products. In the poorest group of population this value was as low as 1395 kilocalories per capita, per day.³

A recent large-scale nation-wide study "The Health and Nutritional Status of Children and Women in Armenia" conducted in 1998 confirmed these findings. This study also revealed that the main food in Armenian diet is bread, although it was consumed more often in rural residents than in urban residents or in refugees. Milk, dairy products, and vegetables were consumed every second day, more in rural than in urban areas. Meat was consumed only once-twice a week. Generally, refugees were more disadvantaged in this sense than residents. The consumption of key foods affecting the quality of the diet (meat, fruit and vegetables) was uneven in the four strata, with rural residents consuming them more often than any of the three other strata. A considerable proportion of respondents, and particularly refugees, reported that they had had to skip meals during the last week (table 18.2).

Table 18.2: Households reporting Skipping Meals in the Last Week by Population Strata

| | Skipping Meals | |
|--------------------------------|----------------|--------------|
| | Yes | No |
| Urban Residents (n=794) | 12.0% | 88.0% |
| Rural Residents (n=742) | 9.4% | 90.6% |
| Urban Refugees (n=533) | 21.0% | 79.0% |
| Rural Refugees (n=638) | 24.6% | 75.4% |
| Weighted Total | 11.9% | 88.1% |

Source: Branca F. et al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition, UNICEF, UNHCR, WFP, MOH-Armenia, 1998

According to the Ministry of Statistics,⁴ a considerable proportion of food products is being imported into Armenia. For instance, in 1996, 40% of flour and 32% of meat were imported to Armenia. By 1998, the proportion of imported flour had increased to 56%.

5. Data Quality/Limitations

While limited in scope, the available data paint a consistent, grim picture of a growing divide between the have and the have-nots.

6. Comments/Conclusions

These studies show a considerable variety in terms of access to food between regions and socio-economic groups, so that the aggregate figures for food consumption tend to mask the disastrous situation of the poorest. In these families the only food, if any, is bread. Lack of food is the main reason given by parents who place their children in institutions.⁵

In 1999, a Food Security Policy and Plan of Action was adopted by the Government of Armenia aimed to ensure a sustainable local production of sufficient variety of food products with joint effort of several ministries and agencies. No data has yet been reported on the success of this effort.

Lack of a proper diet represents a significant public health problem that will ultimately manifest itself across a number of indicators from the physical to the developmental. The increasing severity of this problem demands immediate attention.

Actual Consumption vs. MSB: Clearly unmet [in terms of food security]

Actual Consumption - Dollars: Clearly unmet [in terms of food security]

Actual Consumption-Calories: Clearly unmet [in terms of food security]

7. References

8. *Human Development Report, Armenia, 1999, Five Years of Human Development in Armenia.* Republic of Armenia, 1999.
9. *Social Snapshot of Poverty, National Report.* Ministry of Statistics of Armenia, World Bank, Republic of Armenia, 1996.
10. *Poverty of Vulnerable Groups in Armenia.* UN Coordinator Fund, UNHCR, UNDP, Yerevan, 1999.
11. *Socio-economic Situation of the Republic of Armenia, January-December 1999, Information-Analytical Monthly Report.* Ministry of Statistics State Registry and Analysis. Yerevan, 2000.
12. *Situation Analysis of Children and Women in Armenia 1998.* Government of Armenia, UNICEF, Save the Children, 1999.

Goal 19. Poliomyelitis Cases

- World Summit Goal: Global eradication of poliomyelitis by the year 2000
- Indicators:
 - ✓ Polio cases: annual number of cases of polio
- Target for Armenia: Global eradication of poliomyelitis

1. Definitions/Indicators

The local definition of polio cases is consistent with the given definition.

2. Data Sources

The main data source for this indicator is the Ministry of Health annual reports based on the information received from health facilities. Supplemental data is provided by the Republican Center of Hygiene and Epidemiologic Control, which receives information about each new case of polio infection from health facilities as soon as the diagnosis of the case is confirmed.

3. Trends

In 1990, 12 cases of polio were registered in the country, followed by few cases annually until 1996. Since 1995, Armenia has participated in the wide-scale interventions MECACAR and MECACAR PLUS directed at eradicating wild poliovirus. No cases of polio were registered in Armenia since 1996.^{1,2} Thus, the goal of polio eradication, formulated as no cases of polio for three consecutive years, was reached in Armenia two years ago (table 19.1, figure 19-1). Starting from 1996, a surveillance of acute indolent paralysis was implemented in the country (table 19.1).³

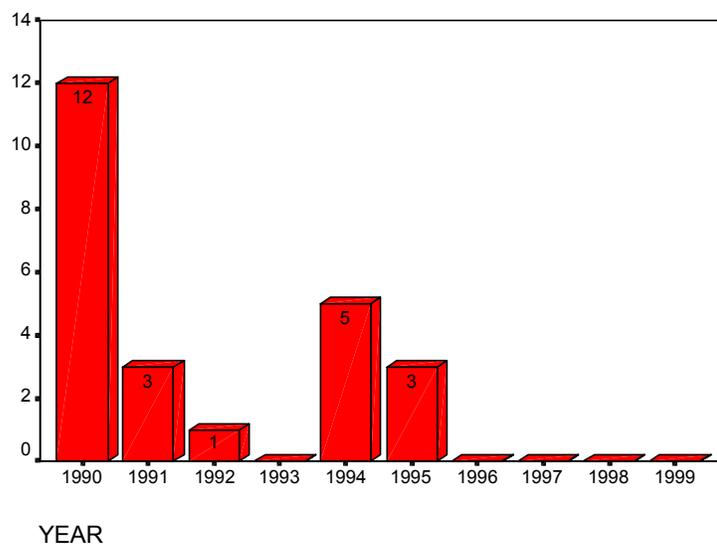
Table 19.1: Annual number of cases of poliomyelitis and acute indolent paralysis

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|
| Cases of polio | 12 | 3 | 1 | 0 | 5 | 3 | 0 | 0 | 0 | 0 |
| Acute indolent paralysis* | - | - | - | - | - | - | 8 | 15 | 19 | 22 |

* - Surveillance of acute indolent paralysis was implemented in Armenia since 1996.

Source: Health and Care of Public Health. Statistical Collection, Ministry of Health of Armenia, Armenia, 1999.

Figure 19-1: Annual Cases of Poliomyelitis, Armenia



In October 2000, the European Regional Accreditation Committee reviewed the situation in the Republic and certified Armenia as an area free of poliovirus.¹

4. Disparities

None

5. Data Quality/Limitations

Both Ministry of Health data and the data from Republican Center of Hygiene and Epidemiologic Control on the cases of polio can be considered reliable.¹

6. Comments/Conclusion

Since October 2000, Armenia is certified as an area free of poliovirus. This is a significant achievement of the National Immunization Program.

Eradication of Poliomyelitis: Clearly Met

7. References

1. Ministry of Health (direct communication)
2. Statistical and Analytical Materials of the Republican Center of Hygiene and Epidemiologic Control, 1990-1999
3. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.

Goal 20. Neonatal Tetanus

- World Summit Goal: Elimination of neonatal tetanus by 1995
- Indicator:
 - ✓ Neonatal tetanus cases: annual number of cases of neonatal tetanus
- Target for Armenia: Maintain the existing situation on neonatal tetanus.

1. Definitions/Indicators

The local definition for neonatal tetanus is consistent with the international one.

2. Data Sources

The main data source is Ministry of Health annual reports that collect this information annually from the all health care facilities in Armenia.

3. Trends

No cases of neonatal tetanus have been registered in Armenia over the last 20 years.^{1,2} Expectant mothers are not currently immunized, though immunizations were practiced in prior decades. Successful elimination of neonatal tetanus was primarily achieved, however, by ensuring clean conditions at delivery and in the days following, which primarily takes place in maternity hospitals (97.3% in 1999).¹

4. Disparities

N/A

5. Data Quality/Limitations

Data of Republican Center of Hygiene and Epidemiologic Control on the status of neonatal tetanus can be considered reliable.

6. Comments/Conclusion

The favorable situation with neonatal tetanus is one example of successful implementation of the National Immunization Program in Armenia.

Neonatal Tetanus: Clearly Met

7. References

1. Ministry of Health (direct communication)
2. Statistical and Analytical Materials of the Republican Center of Hygiene and Epidemiologic Control, 1990-1999.

Goal 21. Children Under Five-Years: Measles

- World Summit Goal: Reduction by 95 percent in measles deaths and reduction by 90 percent of measles cases compared to pre-immunization levels by 1995, as a major step to the global eradication of measles in the longer run
- Indicators:
 - ✓ Under-five deaths from measles: annual number of under-five deaths due to measles
 - ✓ Measles cases: annual number of cases of measles in children under five-years
- Target for Armenia:
 - By the year 1995, to reach a level of measles cases less than 1000 per year, and reach the global eradication of measles in the longer run
 - Maintain the existing situation of no deaths caused by measles

1. Definitions/Indicators

The local definition in measles indicators differs from the international definitions in terms of age range. Data on measles cases is available for the age group 0-6 rather than 0-5.

2. Data Sources

The main data source for this indicator is the Ministry of Health annual reporting based on the information received from health facilities.^{1,2} Another data source is the disease surveillance report available from the Republican Center of Hygiene and Epidemiologic Control.³

Data on immunization coverage against measles from the 1998 national study⁴ and from the 1999 National Immunization Program Evaluation⁵ study was used along with the official data on immunization coverage available from the above-mentioned sources.

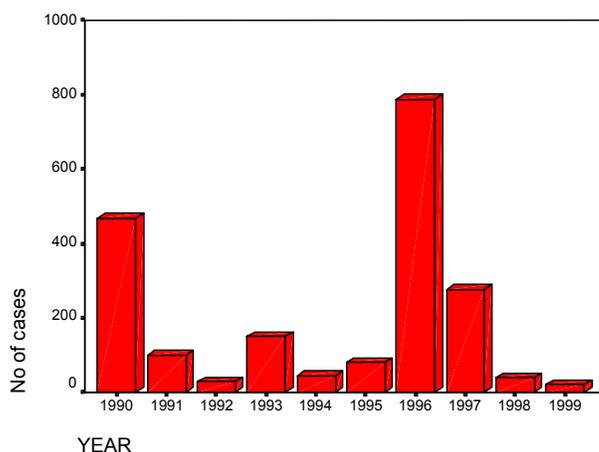
The 1998 national nutritional study was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

The Ministry of Health and UNICEF carried out the Evaluation of the National Immunization Program of the Republic of Armenia from April to December 1999. A national multi-stage stratified randomized cluster sampling procedure was applied to evaluate vaccination coverage among children, and 2 145 children aged 15-26 months from all Regions of Armenia were enrolled in the study.

3. Trends

There have been no measles-related deaths in Armenia since 1986.^{1,3} In the early 1970s, when measles immunization efforts started, there were more than 10 000 annual cases of registered measles. By the mid 1990s an almost 50-fold decrease was observed: only 187 cases of measles were registered in 1995, of which 80 cases were in children under 6 years old.³ Although periodic increases in measles cases have been observed over the decade (figure 21-1), no major outbreaks occurred. Thus, the goal of reduction of measles cases by 1995 was reached.

Figure 21-1: Cases of measles in children under 6 years



According to the available data from official sources, measles immunization coverage for 2 year-old children was high (90% and higher) and rather stable over the decade (table 21.1). However, the coverage was not as high in younger children¹. According to the 1998 national survey findings⁴, the measles immunization coverage rate among 15-18 months old children was 72.4%. This rate was even lower (60.6%) among children aged 15 months according to the results of the Evaluation of National Immunization Program carried out in 1999. However, the Evaluation revealed much higher crude coverage rates (among all enrolled children irrespective to age) of 84.1% for measles which is comparable to the official data of 91%.⁵

Table 21.1: Measles immunization coverage of children under 2 years

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|------|------|------|------|------|------|------|------|------|------|
| % | 95.2 | 93.3 | 93.1 | 95.2 | 95.0 | 96.0 | 89.0 | 91.5 | 93.5 | 91.1 |

Source: Ministry of Health, RA

4. Disparities

Most childhood measles cases now occur in children 0-2 (table 21.2). While this can be partially explained by late immunization reaching high levels of coverage by age 2, the role of decreasing financial access to health care services where only the more severe, and hence younger, cases refer to health facilities and are registered. The distribution of registered measles cases among Regions (table 21.3) shows higher prevalence of the disease in Yerevan and Shirak. This finding supports the contention of predominantly severe cases being regions. Thus, the age distribution of cases, possibly, reflects a severity distribution more so than a rather frequency distribution.

Table 21.2: Annual number of cases of measles in Armenia by age

| Age | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--------------------------|------------|------------|-----------|------------|-----------|-----------|------------|------------|-----------|-----------|
| 0-2 years | 177 | 45 | 14 | 56 | 18 | 29 | 304 | 142 | 19 | 14 |
| 3-6 years | 290 | 55 | 14 | 93 | 26 | 51 | 484 | 134 | 20 | 7 |
| Total (0-6 years) | 467 | 100 | 28 | 149 | 44 | 80 | 788 | 276 | 39 | 21 |

Source: Statistical and Analytical Materials of the Republican Center of Hygiene and Epidemiologic Control, 1990-1999

¹ According to the Routine Immunization Schedule adopted in Armenia, children should receive the first dose of vaccine against measles at 12 months of age.

Table 21.3: Number of cases of measles in children under 6 years by Marzes

| | 1990 | 1995 | 1999 |
|------------------------|------------|-----------|-----------|
| Armenia (total) | 467 | 80 | 21 |
| Yerevan | 119 | 4 | 10 |
| Aragatsotn | 37 | 0 | 0 |
| Ararat | 38 | 5 | 0 |
| Armavir | 26 | 6 | 0 |
| Gegharkunik | 28 | 1 | 0 |
| Lori | 20 | 26 | 3 |
| Kotayk | 40 | 0 | 2 |
| Shirak | 94 | 31 | 6 |
| Syunik | 33 | 1 | 0 |
| Vayots Dzor | 0 | 3 | 0 |
| Tavush | 32 | 3 | 0 |

Source: Ministry of Health, RA

5. Data Quality/Limitations

Data on under-five deaths from measles are considered rather reliable.¹ With respect to measles cases, the registration of cases depends from many interconnected factors such as the accessibility of health care services, the frequency of referrals, the severity of cases, the accuracy of diagnosis, registration and reporting. Since many studies have shown decreased accessibility of health care services over the decade⁶, the number of registered cases could reflect their severity rather than the frequency of their occurrence. However, the magnitude of the reduction in measles cases should not be in question.

6. Comments/Conclusion

As a result of implementation of the universal immunization of children against measles starting from early 1970s, a considerable reduction of measles cases and elimination of deaths due to measles were achieved. The goals of elimination of deaths caused by measles and reduction by 90% of measles cases compared to pre-immunization levels by 1995 was completely reached in Armenia. Eradication of measles through increasing the timely immunization coverage is considered the next step for the National Immunization Program.

Under five deaths from measles: Clearly met

Measles cases: Clearly met

7. References

1. Direct communication with Ministry of Health
2. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.
3. Statistical and Analytical Materials of the Republican Center of Hygiene and Epidemiologic Control, 1990-1999

4. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.
5. *Evaluation of the National Immunization Program of the Republic of Armenia*. Ministry of Health of the Republic of Armenia and UNICEF/Armenia, December 1999.
6. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.

Goal 22. Children and Women: Immunization coverage

- World Summit Goal: Maintenance of a high level of immunization coverage (at least 90% of children under one year by the year 2000) against diphtheria, pertussis, tetanus, measles, poliomyelitis, tuberculosis and against tetanus for women of child-bearing age
- Indicators:
 - ✓ DPT immunization coverage: proportion of one-year olds immunized against DPT
 - ✓ Measles immunization coverage: proportion of one-year olds immunized against measles
 - ✓ Polio immunization: Proportion one-year old immunized against polio
 - ✓ Tuberculosis immunization coverage: proportion of one-year olds immunized against TB
 - ✓ Children protected against neonatal tetanus: proportion of one-year olds protected against neonatal tetanus through immunization of their mother
- Target for Armenia: Maintenance of at least 90% immunization coverage against diphtheria, pertussis, tetanus, measles, poliomyelitis, tuberculosis

1. Definitions/Indicators

The officially accepted definitions for DPT, Polio, and Tuberculosis are consistent with the given definitions. Measles immunization coverage is defined as the proportion of two- years olds immunized against measles, though the recommended age of immunization against measles is 12 months old in Armenia. The definition of children protected against neonatal tetanus is the same, but this indicator is not used in official statistics.

2. Data Sources

The main official data source for this indicator is the Ministry of Health annual report based on information received from health facilities.^{1,2} Another data source is the immunization coverage surveillance report available from the Republican Center of Hygiene and Epidemiologic Control.³

Another source of information is the evaluation of the National Immunization Program (NIP) conducted by the Ministry of Health and UNICEF from April to December 1999.⁴ A national multi-stage stratified randomized cluster sampling procedure was applied in this study to evaluate vaccination coverage among children, and 2 145 children aged 15-26 months from all regions of Armenia were enrolled in the study. Data on coverage was gathered from a variety of sources including children's guardians' reports and a review of children's medical records and other facility-based immunization records.

Data on immunization coverage against measles from a 1998 national study⁵ was used to characterize gender and social group disparities. This study was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study. Data on measles immunization coverage was based on guardian's recall only.

3. Trends

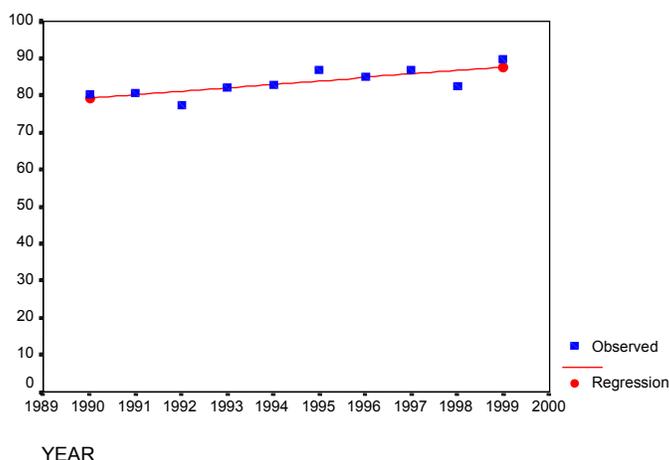
The trend of immunization coverage rates over the decade was available only from the official Ministry of Health statistics.¹⁻³ According to these sources, DPT immunization coverage among one year olds was approximately 80% in early 1990s and close to the goal of 90% in 1999 (table 22.1). According to the regression line in figure 22-1 an estimated absolute increase of 8.3% (or by 10.5% of its initial level) of the DPT immunization coverage rate was observed during the decade, reaching 87.6% and falling just short of the target.

Table 22.1: DPT immunization coverage of one-year old children (%)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------|------|------|------|------|------|------|------|------|------|------|
| DPT (%) | 80.4 | 80.7 | 77.4 | 82.1 | 83.0 | 87.0 | 85.0 | 86.9 | 82.6 | 89.6 |

Source: Ministry of Health of Armenia, Republican Center of Hygiene and Epidemiological Control

able 22-1: DPT vaccination coverage of one year old children



According to official statistics, the rate of measles immunization coverage among two-year olds was above 95% during the whole decade (table 22.2). This rate was rather stable. The regression line in figure 22-2 estimates only a slight absolute decrease of 3.4% of the measles immunization coverage rate over the decade dipping to 91.6%.

Table 22.2: Measles immunization coverage of two-year old children (%)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|------|------|------|------|------|------|------|------|------|------|
| % | 95.2 | 93.3 | 93.1 | 95.2 | 95.0 | 96.0 | 89.0 | 91.5 | 94.2 | 91.1 |

Source: Ministry of Health of Armenia, Republican Center of Hygiene and Epidemiological Control

With respect to polio immunization coverage, this rate was also above the World Summit goal of 90% during the decade (table 22.3) and showed an increasing trend. The regression line in figure 22-3 estimates an increase of 5.9% of the polio immunization coverage over the decade reaching 96.7%.

Table 22.3: Polio immunization coverage of one-year old children (%)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--------------------------|------|------|------|------|------|------|------|------|------|------|
| % of vaccinated children | 91.9 | 91.8 | 91.9 | 91.9 | 92.0 | 93.0 | 98.0 | 94.6 | 96.4 | 96.7 |

Source: Ministry of Health of Armenia, Republican Center of Hygiene and Epidemiological Control

Figure 22-2: Measles immunization coverage of under-2

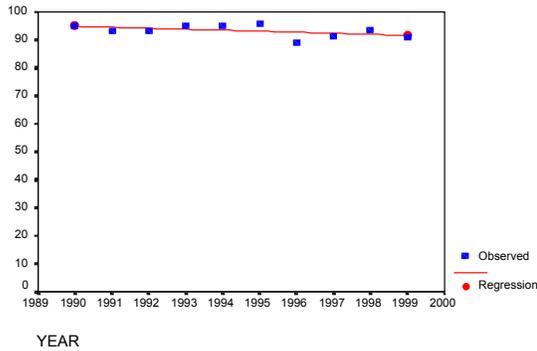
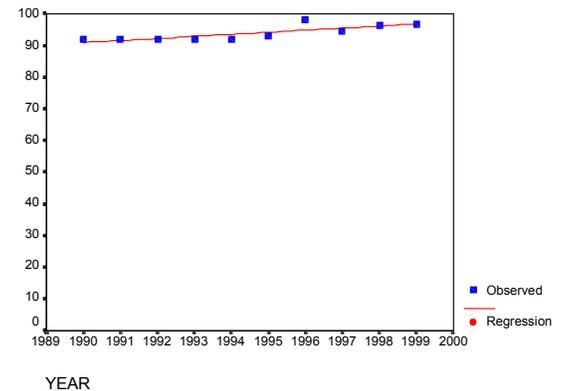


Figure 22-3: Polio vaccination coverage of children <1



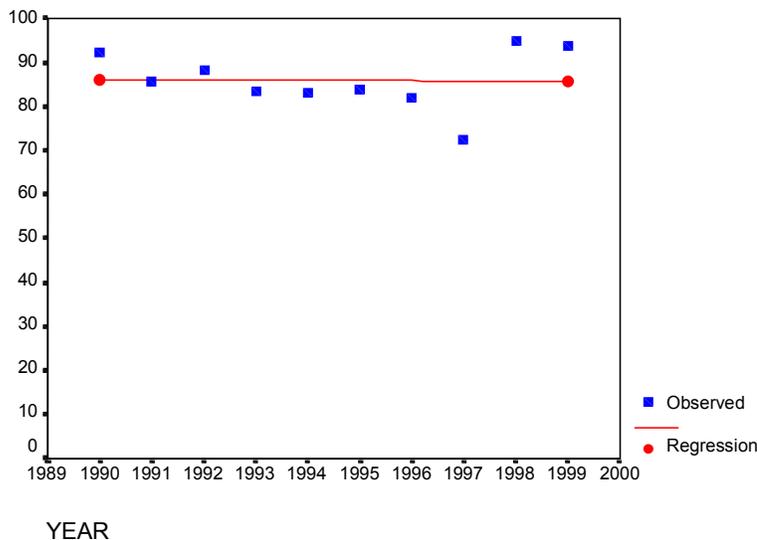
Tuberculosis immunization coverage was also high and exceeded the accepted level of 90% during the years of 1990, 1998 and 1999 (table 22.4). However, in other years, this rate was more typically around 80%. The net effect of this variability was an estimated stable trend of roughly 86% across the decade (figure 22-4). Thus, the tuberculosis immunization coverage rate is still slightly below the goal of 90%.

Table 22.4: BCG immunization coverage of one-year old children (%)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--------------------------|------|------|------|------|------|------|------|------|------|------|
| % of vaccinated children | 92.3 | 85.6 | 88.2 | 83.5 | 83.0 | 84.0 | 82.0 | 72.3 | 94.7 | 93.6 |

Source: Ministry of Health of Armenia, Republican Center of Hygiene and Epidemiological Control

Figure 22-4: BCG vaccination coverage of children <1



The proportion of children protected against tetanus according to the given definition is difficult to obtain, as data on the mothers' immunization is not readily available from official sources. It is assumed that all the population groups in Armenia receive 5 injections of tetanus toxoid by age 7, and one injection in each 10 years thereafter in accordance with the routine immunization schedule (table 22.5). The complete absence of neonatal tetanus in Armenia for more than 20 years serves as confirmation of this assumption. However, the data on the proportion of mothers who had received complete immunization against tetanus according to the official schedule is not available.

Table 22.5: Routine Immunization Schedule, Republic of Armenia, 2000

| | In 24 hours after birth | 1.5 mo. | 3 mo. | 4.5 mo. | 6 mo. | 12 mo. | 15 mo. | 18-24 mo. | 3.5-4 yrs | 6-7 yrs | 16 yrs | Every 10 years |
|----------------|-------------------------|---------|-------|---------|-------|--------|--------|----------------|----------------|----------------|--------|----------------|
| BCG | X | | | | | | | | | X ³ | | |
| HBV | X | X | | | X | | | | | | | |
| DTP | | | X | X | X | | | X | | | | |
| DT-M | | | | | | | | | | X | X | X |
| OPV | | | X | X | X | | | X ¹ | | X | | |
| Measles | | | | | | X | | | X ² | | | |
| Mumps | | | | | | | X | | | | | |

Source: Republican Center of Hygiene and Epidemiological Control of the Republic of Armenia

¹ Two-fold OPV revaccination

² Adminstrated not earlier than two years after vaccination

³ Adminstrated to those who do not have a scar

The discussion above was based on official Ministry of Health data. A recent evaluation conducted by UNICEF and Ministry of Health in 1999⁴ only partially confirmed the official data. The study findings on immunization coverage were based on guardians' report and/or medical documentation. The coverage rates based on guardians' report or documentation were obtained for the whole sample of 15-26 months old children. The coverage rates for one-year old children (15 months old for measles) were obtained only from medical documentation. These two sources paint a different picture of immunization coverage. While the coverage rates were very high (97.7% for DPT, 99.4% for polio, 87.2% for measles and 95.7% for tuberculosis) according to data based on guardian's report or documentation, these rates were much lower (63.4% for DPT, 60.6% for measles, 81.6% for polio, and 86.9% for tuberculosis) according to medical documentation only (tables 22.6 and 22.7).

Table 22.6: DPT, Measles, Polio, Tuberculosis (BCG) immunization coverage of children 15-26 months old according to documentation, guardian's report or vaccination scar for BCG, 1999 (n=2 145)

| | DPT (%) | Measles (%) | Polio (%) | Tuberculosis (%) |
|---|-------------|-------------|-------------|------------------|
| Aragatsotn | 98 | 92 | 99 | 91 |
| Ararat | 98 | 90 | 100 | 98 |
| Armavir | 100 | 95 | 100 | 99 |
| Gegharkunik | 96 | 84 | 100 | 90 |
| Kotayk | 98 | 90 | 99 | 97 |
| Lori | 95 | 81 | 98 | 85 |
| Shirak | 99 | 94 | 99 | 98 |
| Syunik | 92 | 73 | 97 | 96 |
| Tavush | 99 | 87 | 99 | 99 |
| Vayots Dzor | 97 | 84 | 99 | 97 |
| Yerevan | 98 | 85 | 100 | 98 |
| Armenia (weighted national estimate) | 97.7 | 87.2 | 99.4 | 95.7 |

Source: Evaluation of the National Immunization Program of the Republic of Armenia. MOH Armenia, UNICEF/Armenia, December 1999

Table 22.7: DPT, Measles, Polio, Tuberculosis (BCG) immunization coverage of one-year old children (15 months-old for measles) according to documentation, 1999 (n=2 145)

| | DPT (%) | Measles (%) | Polio (%) | Tuberculosis (%) |
|---|-------------|-------------|-------------|------------------|
| Aragatsotn | 74 | 68 | 84 | 86 |
| Ararat | 69 | 66 | 89 | 95 |
| Armavir | 82 | 77 | 96 | 92 |
| Gegharkunik | 45 | 49 | 74 | 74 |
| Kotayk | 72 | 66 | 87 | 95 |
| Lori | 60 | 59 | 71 | 66 |
| Shirak | 74 | 78 | 90 | 96 |
| Syunik | 30 | 27 | 68 | 88 |
| Tavush | 63 | 57 | 72 | 91 |
| Vayots Dzor | 62 | 57 | 78 | 86 |
| Yerevan | 59 | 54 | 79 | 88 |
| Armenia (weighted national estimate) | 63.4 | 60.6 | 81.6 | 86.9 |

Source: Evaluation of the National Immunization Program of the Republic of Armenia. MOH Armenia, UNICEF/Armenia, December 1999

Several arguments can explain these differences. The first one is that guardians were not asked if their child had received each of the vaccinations that are given in series of DPT and polio. As a result, these indicators essentially measured of whether the child received first DPT or first OPV, while the indicators based on documentation measured the complete vaccination of DPT and OPV. Thus discrepancies arise between conflicting up-to-date and on-time definitions. The second argument is that cases of late immunization (after 1 year for DPT, polio and tuberculosis

and after 15 months for measles) were included in the proportions based on both sources, while they were excluded from the proportions based on documentation. The third argument is the possibility of incomplete recording of vaccination in medical documentation, which may have occurred in some facilities. Additionally, the cluster sampling technique may have over-represented clusters of low immunizations within the sampled communities.

While the evaluation calls the official data into question, the lack of additional data confirming either the official statistics or the evaluation assessment makes a consensus assessment difficult. Furthermore, the evaluation data represents a single cross-sectional period and does not permit trend assessments. Consequently, the Ministry of Health data was used, noting the potential limitations of the data.

4. Disparities

Regional disparities according to the different sources are given in table 22.8 (official data), table 22.6 (study data based on guardians' report or documentation), and table 22.9 (study data based on documentation only). As shown in these tables, there are coverage differences among the marzes. The estimated magnitude of these disparities, however, also varies widely from study to study. According to the documentation study, the lowest coverage rates of DPT and measles immunization are Syunik (30% and 27% respectively) and Gegharkunik (45% and 49% respectively) marzes. These proportions are inconsistent with the relevant proportions reported from the other sources and thus, may possibly reflect the poor state of medical documentation and the low rates of timely coverage in these areas rather than truly low levels of crude immunization coverage.

Table 22.8: DPT, Measles, Polio, Tuberculosis (BCG) immunization coverage of one-year old children (2 year-olds for measles) according to Ministry of Health, 1998-99, by Marz

| | DPT (%) | | Measles (%) | | Polio (%) | | Tuberculosis (%) | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|-------------|
| | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 |
| Aragatsotn | 93.3 | 94.8 | 99.2 | 98.3 | 96.7 | 99.4 | 98.3 | 96.2 |
| Ararat | 95.9 | 94.6 | 98.2 | 91.0 | 98.9 | 97.9 | 98.1 | 91.7 |
| Armavir | 82.7 | 96.5 | 96.6 | 93.8 | 99.6 | 98.8 | 99.8 | 94.7 |
| Gegharkunik | 67.3 | 94.9 | 85.4 | 91.6 | 86.5 | 96.3 | 81.4 | 93.1 |
| Lori | 72.7 | 85.0 | 94.3 | 89.4 | 94.2 | 96.4 | 90.3 | 97.4 |
| Kotayk | 82.3 | 91.6 | 96.0 | 93.9 | 97.3 | 95.7 | 97.9 | 77.6 |
| Shirak | 82.6 | 87.9 | 91.8 | 87.4 | 97.3 | 95.4 | 97.6 | 98.4 |
| Syunik | 86.8 | 83.0 | 95.7 | 88.1 | 96.9 | 94.7 | 93.0 | 99.0 |
| Vayots Dzor | 93.2 | 84.3 | 92.3 | 85.8 | 96.3 | 95.7 | 96.6 | 92.3 |
| Tavush | 89.5 | 84.6 | 92.9 | 91.8 | 97.7 | 94.0 | 97.8 | 92.3 |
| Yerevan | 82.4 | 87.0 | 94.5 | 90.1 | 97.7 | 96.3 | 94.4 | 94.4 |
| Armenia | 82.6 | 89.6 | 94.2 | 91.1 | 96.4 | 96.7 | 94.7 | 93.6 |

Source: Ministry of Health, Republican Center of Hygiene and Epidemiologic Control

Table 22.8: Proportions of children who received BCG immunization within the first year of life according to documentation, and proportion of 15-26 months old children with BCG scar

| | Proportion of immunized within the first year of life (n=2139) | Children 15-26 months old with BCG scar (surveyor's observation, n=1924) |
|---|--|--|
| Armenia (weighted national estimate) | 86.9 % | 58.5 % |
| Armenia (total) | 86.9 % | 55.6 % |
| Yerevan | 88 % | 68 % |
| Aragatsotn | 86 % | 45 % |
| Ararat | 95 % | 56 % |
| Armavir | 92 % | 61 % |
| Gegharkunik | 74 % | 64 % |
| Lori | 66 % | 52 % |
| Kotayk | 95 % | 50 % |
| Shirak | 96 % | 48 % |
| Syunik | 88 % | 63 % |
| Vayots Dzor | 86 % | 42 % |
| Tavush | 91 % | 64 % |

Source: Evaluation of the National Immunization Program of the Republic of Armenia. MOH Armenia, UNICEF/Armenia, December 1999

Gender and social group differences in immunization coverage are available only for measles from the 1998 national nutritional study.⁵ According to this source, immunization rates of 15-18 month old boys and girls were comparable (73.3% and 71.2% respectively). Interestingly, measles immunization coverage rates were higher in rural, than in urban areas. The highest coverage rate (85.7%) was observed in rural refugees (table 22.10).

Table 22.9: Measles immunization coverage of 15-18 months old children (1998 national household survey data)

| | Total weighted | Urban resid. | Rural resid. | Urban refug. | Rural refug. |
|--------------|----------------|---------------|---------------|---------------|---------------|
| Boys (n=87) | 73.3 % | 66.7 % | 80.6 % | 73.3 % | 85.0 % |
| Girls (n=68) | 71.2 % | 71.4 % | 69.2 % | 66.7 % | 86.4 % |
| Total | 72.4 % | 68.6 % | 75.4 % | 71.4 % | 85.7 % |

Source: The health and nutritional status of children and women in Armenia. UNICEF, UNHCR, WFP, MOH Armenia, Sept 1998

5. Data Quality/Limitations

The Ministry of Health official data on immunization coverage can be considered relatively reliable, although it is subject to the normal shortcomings that may happen in data recording, collecting, reporting and synthesizing. The main limitation of the official data is that the routine MOH coverage monitoring system generates indicators that measure coverage levels for children from 12 to 23 months of age, rather than among children on the completion of 12-months of age. Thus, these indicators do not allow monitoring the progress towards achieving timely coverage goals.⁴

Another deficiency of the official data is that vaccination levels do not always reflect the true levels of immunization coverage, as vaccines are not kept appropriately (e.g. failure to maintain the cold chain). Such breakdowns are not rare in Armenia because of frequent power interruptions. The difference between the vaccination levels against tuberculosis (86.9%) and the proportion of children with post-vaccination scar (58.5%) support this assertion (table 22.8).

The findings of the Evaluation study showed crude coverage rates rather close to the official data. Unlike this, immunization coverage according to documentation was much lower. The main explanation for this is the widespread practice of late immunization⁴ as well as the arguments noted in the previously.

6. Comments/Conclusion

The World Summit goals for immunization coverage of at least 90% were reached for polio and measles. For DPT and Tuberculosis the coverage rates were between 85-90%. However, one should bear in mind that these rates do not necessarily show timely immunization coverage rates for these diseases. In this sense, the findings of the NIP Evaluation survey showed that timely NIP coverage targets of 90% (according to documentation) for BCG, OPV3, and DPT3 before 12 months of age (and measles before 15 months of age) were not achieved, although timely BCG and OPV3 coverage rates were both above 80%.

DPT Immunization Coverage: Substantially met [not timely]

Measles Immunization Coverage: Clearly met [not timely]

Polio Coverage: Clearly met

TB Immunization Coverage: Substantially met

Neonatal Tetanus: Clearly met [No specific data on maternal immunization; no cases in 20 years]

7. References

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2. *Health and Care of Public Health, Statistical Collection*. Ministry of Health of Armenia. Armenia, 1999.
3. *Statistical and Analytical Materials of the Republican Center of Hygiene and Epidemiologic Control, 1990-1999*.
4. *Evaluation of the National Immunization Program of the Republic of Armenia*. Ministry of Health of the Republic of Armenia and UNICEF/Armenia, December 1999.
5. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.

Goal 23. Children Under-Five Years: Diarrhea

- World Summit Goal: Reduction by 50% in the deaths due to diarrhea in children under the age of 5-years and 25% reduction in the diarrhea incidence rate
- Indicators:
 - ✓ Under five deaths from diarrhea: annual number of under 5 deaths due to diarrhea
 - ✓ Diarrhea cases: average annual number of episodes of diarrhea per child under five years of age
 - ✓ ORT use: Proportion of children 0-59 months of age who had diarrhea in the last 2-weeks who were treated with oral rehydration salts or an appropriate household solution
 - ✓ Home management of diarrhea: proportion of children 0-59 months of age who had diarrhea in the last two weeks and received increased fluids and continued feeding during the episode
- Target for Armenia: Reduction of infant mortality rate due to diarrhea by 50% i.e., reaching the level of 1.1 deaths of infants due to diarrhea per 1000 live births.

1. Definitions/Indicators

There are no official statistics on under-five deaths due to diarrhea in Armenia. Traditionally, the rate of under-one deaths due to diarrhea (per 1000 live births) was considered an important measure of diarrhea management, since the most severe cases of diarrhea usually occur during the period of infancy causing over 85% of all under-five deaths due to diarrhea in Armenia¹. Thus, the locally accepted measure for this indicator is infant mortality rate (IMR) due to diarrhea, which is defined as the annual number of infant deaths due to diarrhea per 1000 live births. Consequently, the decade-target for Armenia could be formulated as reduction of infant mortality rate due to diarrhea by 50% (which is even more challenging because of the higher severity of diarrhea episodes in this particular age group).

The indicator of diarrhea cases is defined as the average annual number of episodes of diarrhea per 10,000 under-five children. This indicator is not included in measures of effectiveness of the National Program against Childhood Diarrheal Diseases (CDD), since many factors other than those targeted by this program may affect the morbidity indicator (such as access to safe food and drinking water). Thus, there is no predetermined target for reduction of diarrheal morbidity in under-five children in Armenia.

It is worth mentioning that there is no morbidity data on so called “diarrhea” available from the MOH official statistics (annual reports). Traditionally, “diarrhea” was considered a syndrome that accompanied many diseases, and thus, the names of those diseases (such as acute intestinal infections; non-infectious enterocolitis; etc.) were included in statistical reports, rather than the name of the syndrome (diarrhea). Also, these data are separately recorded in annual record forms only for children under-one year of age. Thus, under-five data is not available.

The indicators of ORT use and home management of diarrhea were defined in the same way by CDD program and were implemented during the National survey of caretakers’ knowledge, treatment practices and care-seeking practices for ARI and CDD carried out in 1997².

2. Data Sources

The main source of information for the data on diarrheal mortality and morbidity is the Ministry of Health. These data are collected through annual reports submitted to the MOH at the end of each year by local health care officials.

A second source of information is the National CDD program monitoring data, such as data from CDD/ARI statistical report forms used in children’s primary health care services³.

A third source of information is the 1997 National survey². Two separate 30-cluster surveys were conducted, one – in Yerevan, and one – in the Regions. Mothers of 1577 under-five children from different urban and rural areas of the republic were enrolled in the survey. The survey questionnaire was almost identical to the “Core ARI” and “Core DD” questionnaires contained in the “Household Survey Manual: Diarrhea and Acute Respiratory Infections” published by the Division for the control of Diarrhea and Acute Respiratory Disease of the WHO in 1994.

A fourth source of information was the summer, 1993 study of breastfeeding, formula use and feeding during episodes of diarrhea, carried out among representative sample of 482 mothers of infants residing in Yerevan.⁵

3. Trends

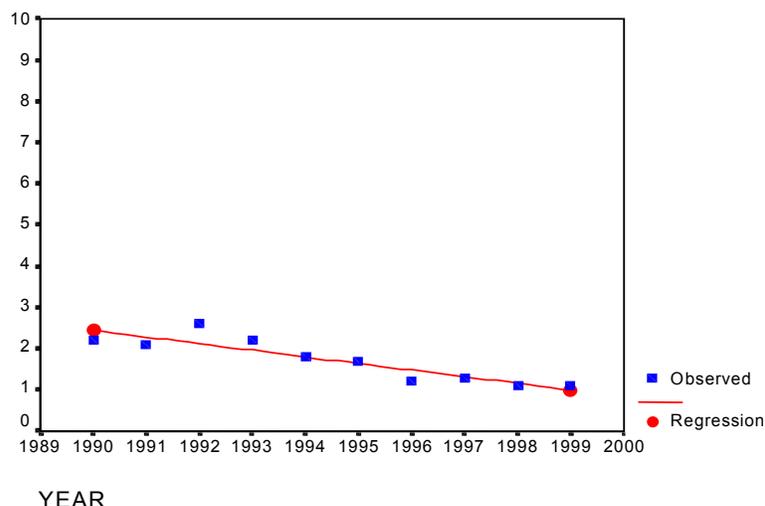
MOH data show that infant mortality rate due to acute diarrhea was consistently higher than 2.0 per thousand live births during the early 1990s (Table 23.1). Since 1994, this rate has decreased in parallel with implementation of the National CDD/ARI Program. According to the regression line in Figure 23.1, infant mortality rate due to diarrhea decreased to 1.4‰ or by 58.3% of its initial value over the decade. Thus, the reduction exceeded the target of reduction by half, stated in the World Summit goal. This considerable reduction of diarrheal mortality was a significant contributor to the reduction of overall infant mortality rate observed during the same period.

Table 23.1: Dynamics of Infant Mortality Rate due to Acute Diarrhea (per 1000 live births)

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|
| IMR due to Acute Diarrhea | 2.2 | 2.1 | 2.6 | 2.2 | 1.8 | 1.7 | 1.2 | 1.3 | 1.1 | 1.1 |

Source: Ministry of Health Annual Reports

Figure 23-1: IMR due to Acute Diarrhea (per 1000 live births)



Data on annual diarrhea cases in under-five children are presented in table 23.2 for 10 marzes of Armenia. These data were obtained as a result of National CDD program implemented in 1998. The primary sources were the “CDD/ARI statistical report forms” introduced in the children’s primary health care services. In some cases, these data were supplemented with information obtained from well-child record forms. Unfortunately, data were not obtained for Yerevan. Also, the accuracy of the data is somewhat questionable, since only those cases referred to medical services were included. Not surprisingly, the average annual number of episodes of diarrhea per child under five years of age, according to these data, was rather low (0.1).

Table 23.2: Diarrheal Morbidity in Under-five Children, 1998

| | | d | |
|--|------|------|------|
| | 1110 | 0.1 | 7.1 |
| | 900 | 0.09 | 16.2 |
| | 900 | 0.09 | 5.4 |
| | 2000 | 0.2 | 3.6 |
| | 1000 | 0.1 | 11.8 |
| | 1000 | 0.1 | 16.9 |
| | 1200 | 0.12 | 13.4 |
| | 1300 | 0.13 | 16.2 |

| | | | |
|---|------|------|------|
| | | | |
| | 2600 | 0.26 | 6.4 |
| — | | | |
| | 400 | 0.04 | 41.2 |

—:

CDD/ARI

f

However, according to 1997 National Survey that was carried out in March, 10% of mothers in Yerevan (n=768) and 11% of mothers in Regions (n=809) reported that their under-five children had had diarrhea during the previous two weeks. Another survey, carried out among mothers of infants (n=482) in Yerevan during summer, 1993⁵, revealed an even higher proportion (18.2%) of children having had diarrhea during the previous two weeks, though a seasonal increase of the illness may explain this discrepancy. Even when taking into consideration the seasonal variations in morbidity with diarrhea and the possible over-reporting of diarrhea cases by mothers, the real number of episodes of diarrhea per child could be 10-20 fold higher than the registered number of 0.1.

According to the 1998 Situation Analysis of Children and Women in Armenia, the reported incidence of diarrhea (number of registered cases in the health facility) for children under-five has remained roughly stable during the 1990s⁴. However, according to the Ministry of Health official numbers, the incidence rate of acute intestinal infections (with confirmed ethiological agent) among infants showed a decreasing tendency (table 23.3).

Table 23.3: Number of confirmed cases of acute intestinal infections in infants in Armenia per 1000 live births, 1992-99

| | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|------|------|------|------|------|------|------|------|
| intestinal infections in infants | 54.7 | 55.8 | 54.5 | 57.6 | 31.9 | 33.1 | 34.3 | 34.1 |

Source: Ministry of Health Annual Reports

The data from the 1997 National Survey on Caretakers' knowledge and practices showed that 33% of under-five children who had diarrhea during the last two weeks were treated with oral rehydration salts; 49% of them had received more fluids during the illness; 63% of children received continued feeding. Both more fluids and continued feeding were given to 30% of children. Meanwhile, out of all interviewed caretakers, 66% knew to give more fluids and 45% knew to give the same amount of food to the child during diarrhea³.

According to the findings of the 1993 Yerevan study on breastfeeding, formula use and feeding during episodes of diarrhea, 51.7% of mothers reported giving more fluids, and 50.3% reported giving Oral Rehydration Solution to their infants with diarrhea. However, this data is not comparable with the findings of 1997 survey because of a differing age range for children.

4. Disparities

Regional disparities in IMR due to diarrhea are presented in table 23.4. The data varies widely, ranging from 0.27 in Yerevan to 4.3 in Vayots Dzor. Similar variability of diarrheal morbidity among marzes was observed, ranging from 400 to 2600 (table 23.5). Interestingly, the highest IMR due to diarrhea is registered in the marz (Vayots Dzor) with the lowest number of registered average annual cases of diarrhea per child, showing a possible association between low referrals and poor outcomes. A similar conclusion could be made from the proportion of hospitalized cases (the highest – in Vayots Dzor) shown in table 23.4 and 23.5

Table 23.4: IMR due to Acute Diarrhea in Marzes of Armenia, 1999

| | |
|---|------|
| e | – |
| | 0.5 |
| | 1.0 |
| | 0.9 |
| | 1.3 |
| | 1.6 |
| | 1.4 |
| | 2.1 |
| | 1.1 |
| | 4.3 |
| | 1.7 |
| | 0.27 |
| | 1.1 |

Source: Ministry of Health Annual Reports

Table 23.5: IMR due to Diarrhea in urban and rural children's population, 1997

| | | IMR |
|--|-----|-------|
| | | 3.9% |
| | | 12.9% |
| | 1.3 | 8.7% |

| | | |
|--|--|--|
| | | |
|--|--|--|

Source: Ministry of Health Annual Reports

Comparison of disease-specific mortality data between urban and rural children's populations shows significantly higher level of mortality in rural areas (table 23.5). Also, according to 1997 National survey results, the Yerevan population showed somewhat higher levels for selected knowledge indicators than the population in regions². In terms of ORS usage and home management of diarrhea, there were no differences between Yerevan and Regions.

5. Data Quality/Limitations

The quality of data on infant mortality due to diarrhea varied over the decade. The early 1990s data on diarrhea-specific infant mortality could be seriously underestimated, since many cases of diarrhea were treated under diagnoses other than diarrhea to avoid compulsory hospitalization of those diarrhea cases into infectious hospitals/departments. (Hospitalization for diarrhea was required by Soviet rules, but parents were reluctant to take their children to infectious hospitals due to fears of cross-infection.) Data from the late 90s is subject to some inaccuracy, which, according to estimations, should be no more than 15%¹. Thus, the decreasing trend of diarrhea-specific infant mortality could be even stronger than the available data demonstrate.

Official data on diarrhea morbidity are incomplete because of significant under-registration of cases, and, to a lesser extent, because of reporting deficiencies. Morbidity data obtained through program monitoring efforts could be considered more complete in terms of demonstrating differences in referrals between regions. However, some organizational difficulties of data collection and reporting make the accuracy of this source somewhat questionable.

Data from household surveys have some limitations such as small sample sizes of children who had diarrhea during the last two weeks (1997 National survey: n = 74 in Yerevan and n = 89 in Regions; 1993 Yerevan survey: n = 87). However, their findings can be considered accurate and informative.

6. Comments/Conclusion

The infant mortality rate due to diarrhea decreased by 58% over the decade, exceeding the 50% target. There is no accurate data on diarrheal morbidity. Also, the reduction of diarrheal morbidity was never considered as an objective for CDD program, taking into consideration the large variety of factors other than effective management of cases that may influence this indicator.

Implementation of practices of ORT usage and correct home management of diarrhea were the factors that largely contributed to above-mentioned significant reduction of disease-specific infant mortality. However, these are not universally adopted practices, and further efforts should be considered to enforce them.

Under 5 Diarrheal Deaths: N/A

Diarrhea-specific IMR Reduction: Clearly Met

Diarrhea Cases: Unable to Assess

ORS Usage: Partially Met

Home Management: Partially Met

7. References

1. Direct Communication with Ministry of Health (with CDD/ARI program manager).
2. Caretakers' knowledge, treatment practices and care-seeking practices for Acute Respiratory Infections and Diarrheal Disease in Children aged 0-5 in Armenia, Report on National Survey. American University of Armenia Center for Health Services Research, funded by UNICEF/Armenia, June, 1997.
3. Data of supervision and monitoring of ARI/CDD program, 1999 (unpublished, report submitted to UNICEF, 1999).
4. Situation Analysis of Children and Women in Armenia 1998. Government of Armenia, UNICEF, Save the Children, 1999.
5. Hekimian, KM, *Infant Feeding Practices in Armenia: A study of Breastfeeding, Formula Use and Feeding During the Episodes of Diarrhea*. October 31, 1993.

Goal 24. Children Under-Five Years: Acute Respiratory Infections

- World Summit Goal: Reduction by one-third in the deaths due to acute respiratory infections in children under 5-years
- Indicators:
 - ✓ Under-five deaths from acute respiratory infection: annual number of under-five death due to acute respiratory infections (ARI)
 - ✓ Care seeking for acute respiratory infections: proportion of children 0-59 month who had ARI in the last 2-weeks and were taken to an appropriate health provider
- Target for Armenia: Reduction of infant mortality rate due to acute respiratory infections by one-third, e.g. reaching the level of 2.8 deaths of infants due to ARI per 1000 life births.

1. Definitions/Indicators

The definition of under-five deaths from acute respiratory infections is formulated as the annual number of under-five deaths due to acute respiratory infections per 1000 live births. It should be mentioned that for the official statistics only the data on cause-specific *infant* mortality is being analyzed and reported. And, since the overwhelming majority of under-five deaths due to ARI occur during infancy¹, the target for the National ARI Control Program was formulated as reduction of *infant* mortality due to ARI by one-third, which is even more challenging because of higher severity of ARI cases in infants.

The definition of care seeking for ARI is the same as the given definition.

2. Data Sources

The main data source for both ARI-specific infant mortality rate and ARI-specific under-five mortality rate is the Ministry of Health data from health facilities' annual reports.

Another source of information is the National Survey on Caretakers' Knowledge, Treatment Practices and Care-seeking Practices for ARI and Diarrheal Diseases in Children Aged 0-5 year in Armenia². This household survey was conducted in 1997. Two separate 30-cluster surveys were conducted, one in Yerevan, and one in the regions. Mothers of 1 577 under-five children from different urban and rural areas of the republic were enrolled in the survey. The survey questionnaire was almost identical to the "Core ARI" and "Core DD" questionnaires contained in the "Household Survey Manual: Diarrhea and Acute Respiratory Infections" published by the Division for the control of Diarrhea and Acute Respiratory Disease of the WHO in 1994.

3. Trends

According to the MOH data, infant mortality due to acute respiratory infections was consistently higher than 4.0 per thousand live births during the early 1990s (table 24.1). Since 1993, a decreasing trend has emerged. During the years of 1997-1998 the level of ARI-specific infant mortality was lower than 3 per thousand live births. The observed increase of the rate in 1999 could be connected with an outbreak of influenza in January-March of 1999. As shown in Figure 24-1, the regression line estimates an absolute decrease of 1.8‰ to a rate of 2.7‰, a reduction of ARI-specific infant mortality by 40% of the initial level over the decade.

Table 24.1: Dynamics of Infant and Under-five Mortality Rates due to ARI (per 1000 live births)

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--|------|------|------|------|------|------|------|------|------|------|
| Infant mortality due to ARI (per 1000 live births) | 4.2 | 3.8 | 4.8 | 4.6 | 3.8 | 3.2 | 3.3 | 2.6 | 2.5 | 3.2 |
| Under-5 mortality due to ARI (per 1000 live births) | 6.61 | 5.63 | 6.43 | 6.49 | 5.67 | 4.80 | 4.63 | 4.05 | - | 4.26 |

Source: Ministry of Health Annual Reports

The same dynamic is evident from the data on ARI-specific under-five mortality rate (table 24.1 and figure 24-2). As shown in the Figure 24-2, there is decrease of 2.6‰ over the decade, which is equal to reduction by 39.4%. Thus, the World Summit goal for this indicator was also reached.

Figure 24-1: Dynamics of Infant Mortality Rate (per 1000 live births) due to ARI in Armenia

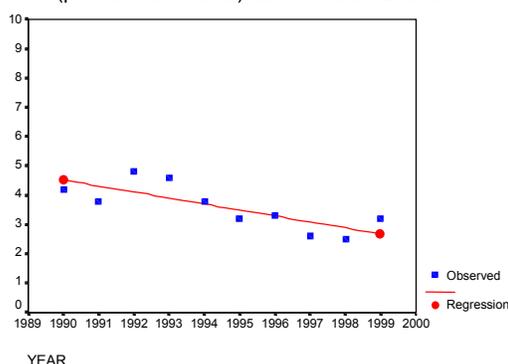
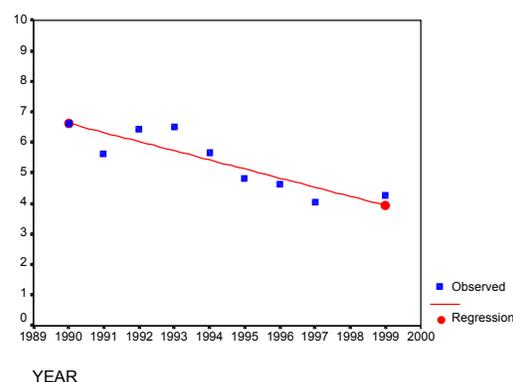


Figure 24-2: Dynamics of Under-five mortality due to ARI



Along with reduction of diarrhea-specific infant deaths, a decrease of ARI-specific infant mortality largely contributed to the reduction of infant mortality rate observed over the decade despite the serious socio-economic difficulties faced by the country.

Data from the 1997 survey on care-seeking practices showed that only 49% of caretakers sought care for their children with ARI needing assessment outside the home. All of them sought care from an appropriate provider (defined as a nurse, feldsher, or physician). Meanwhile, only 36% of caretakers sought care outside the home for their children with cough; 97% of them sought care from an appropriate provider. The survey revealed that caretakers' knowledge regarding when to seek care for ARI needing assessment was low. Only about 5% of them knew the necessity of seeking medical care for a child with cough and fast breathing. Caretakers were routinely self-treating their children with ARI.²

The survey of ARI case management in first-level health facilities showed the advantages and weakness of case management. Although 92% of all cases were correctly classified, rates of correct treatment were quite low due to poor performance in communicating health messages. When the communication component was removed from the criteria, 76% of all cases received the correct treatment. In cases of non-pneumonia where an antibiotic was not required, 78% of

cases were appropriately treated without an antibiotic. This indicator can be compared with data of observations before the implementation of the program, conducted by the IFRC in April of 1995, when the level of appropriate use of antibiotic in non-pneumonia cases was only 3%.

Since 1997, many activities were undertaken to address the problems revealed by the above-mentioned survey. Unfortunately, no recent data are available to estimate the impact of these efforts on caretakers' knowledge and practices.

4. Disparities

Data on disparities between regions are presented in table 24.2. According to the 1999 data, the lowest level of ARI-specific infant mortality (0.6‰) was registered in Yerevan, the highest (7.9‰) – in Gegharkunik. This 13-fold difference underscores the importance of further studies directed to assess the various risk factors in different regions for targeting interventions accordingly.

Table 24.2: Infant Mortality Rate due to ARI by Marz, Armenia, 1999

| Marz | Indicator per 1000 live births |
|-----------------------------|--------------------------------|
| Aragatsotn | 5.9 |
| Ararat | 2.6 |
| Armavir | 3.5 |
| Gegharkunik | 7.9 |
| Kotayk | 3.5 |
| Lori | 2.8 |
| Shirak | 4.2 |
| Syunik | 4.3 |
| Vayots Dzor | 1.4 |
| Tavush | 6.4 |
| Yerevan | 0.6 |
| Total IMR due to ARI | 3.2 |

Source: Ministry of Health Annual Reports

Urban/rural differences of ARI-specific infant mortality rate for 1997 are provided in table 24.3. As is evident from the table, this rate is almost two times higher in rural areas, than in urban. The survey on ARI case management³ conducted in 1998, showed significantly better management of ARI cases in urban polyclinics than in rural ambulatories, thus, partially explaining the above-mentioned urban/rural differences in disease-specific mortality.

Table 24.3: The ARI-caused mortality rates among infant populations of main cities and rural district's in Armenia, 1997

| Population | IMR rate due to ARI (per 1000 live births) | Proportion in general IMR (%) |
|-----------------|--|-------------------------------|
| Cities | 1.7 | 9.5 |
| Rural districts | 3.2 | 24.4 |
| Total | 2.6 | 17.3 |

Source: Ministry of Health Annual Reports

5. Data Quality/Limitations

Different factors may influence the accuracy of data from Ministry of Health Annual Reports. However, this source is considered relatively reliable for data on infant mortality.

Data from the 1997 household survey have some limitations, such as small sample size of children who had ARI needing assessment during the last two weeks (n = 29 in Yerevan and n = 41 in Regions) or difficulties in terminology used during interviews (for instance, lack of explanation for *difficult* breathing). However, the survey findings can generally be considered accurate.

6. Comments/Conclusion

Both infant and under-five mortality rate due to acute respiratory infections decreased by almost 40% over the decade, thus, exceeding the target stated by the World Summit goal. Despite some perceived inaccuracy of the official data, this decrease is not a subject of suspicion. However, there are large between-regional differences of this indicator that should be addressed accordingly.

Care seeking practices for acute respiratory infections could not be considered as sufficient. Both low level of caretakers' knowledge and low accessibility of health care services could be responsible for this deficiency.

Under 1 ARI-specific IMR: Clearly Met [with disconcerting regional disparities]

Under 5 Deaths: Clearly Met [with disconcerting regional disparities]

Care Seeking Behavior: Partially Met

7. References

1. Direct Communication with Ministry of Health (with CDD/ARI program manager).
2. *Caretakers' knowledge, treatment practices and care-seeking practices for Acute Respiratory Infections and Diarrheal Disease in Children aged 0-5 in Armenia, Report on National Survey*. American University of Armenia Center for Health Services Research, funded by UNICEF/Armenia, June, 1997.
3. *Assessment of case Management of ARI in Children in Armenia, Final Report on National Survey*. UNICEF/Armenia and American University of Armenia Center for Health Services Research, April 1998

Goal 25: Guinea-worm (dracunculiasis)

- World Summit Goal: Elimination of guinea-worm (dracunculiasis) by the year 2000
- Indicators:
 - ✓ Dracunculiasis cases in the total population

N/A: Armenia is certified as free of dracunculiasis by the World Health Organization.

Goal 26. Early Childhood Educational Programs & Community Interventions

- World Summit Goal: Expansion of early childhood development activities, including appropriate low-cost family and community-based interventions.
- Indicators:
 - ✓ Preschool development: proportion of children aged 36-59 month who are attending some form of organized early childhood education program.
 - ✓ Underweight prevalence: proportion of under-fives who fall below minus 2 SD from median weight for age of NCHS/WHO reference population)

1. Definitions/Indicators

The definition for the indicator “preschool development” used in this text is not fully consistent with the given definition due to difference in the reported age range. The age range for this indicator in Armenia is 3-6 years or 36-71 months. The reason for this difference is that children in Armenia enroll in the general primary education system at 7 years of age.

Definitions for the indicator “underweight prevalence” in the under-5 population are consistent with the WHO definitions. The NCHS/WHO population serves as a reference population.

2. Data Sources

The main source of information for the indicator of preschool development was Education for All (EFA) Year 2000 assessment for Armenia.¹ This assessment used primary data gathered from the Ministry of Education and Science, the Ministry of Statistics, Marz Governors, and Non-Governmental Organizations. Additional information was obtained from the Ministry of Statistics, Ministry of Education and Science and UNICEF Report on Pre-Primary and General Education, 2000.² The data obtained from these sources did not include unregistered migration, which might contribute to underestimation of the real proportions of enrollment by overestimating denominators (the overall number of 3-6 year old children in Armenia).

Data sources for underweight prevalence were limited to a surveillance project of select Yerevan polyclinics (1993-1995)³⁻⁵ and a national study in 1998.⁶ The purpose of the Yerevan surveillance was to identify acute malnutrition among under-5 children and to define the trends of their nutritional status over time. Eight children’s polyclinics, serving almost half of the children’s population of Yerevan were involved in this surveillance. Anthropometric measurements were conducted for all children under five years old visiting the polyclinic during that period. Results were reported and analyzed.

The 1998 national study,⁶ the only national under-5 data available for the decade, was a collaborative effort of the National Institute of Nutrition (Italy), the Ministry of Health (Armenia), UNICEF, WFP, and UNHCR. A sample of 2 627 households selected by multistage cluster sampling procedure was drawn and 3 390 under-five (0-59 months) children and 2 649 women in the age group of 15-45 residing in these households were enrolled in the study.

A. Preschool development

3. Trends

Until 1990, early childhood development activities were available at very low cost to families through a highly developed network of pre-school institutions. However, even then the enrollment rate was not very high as families traditionally assumed responsibility for childcare and early education. According to the *Education for All assessment*,¹ only 44% of 3-6 years old children were enrolled in preschool institutions in 1988 (table 26.1). The situation declined rapidly during the early 1990s causing a two-fold decrease in the preschool enrollment rate. Several reasons were given to explain this decrease including increasing unemployment among women, deterioration of conditions for the operation of pre-primary institutions, and increasing tuition for enrollment in these institutions.² All these factors are interconnected with the recent socio-economic crisis. The situation became somewhat stabilized during the second half of the 1990s and a slight increasing trend in the preschool enrollment rate was observed. A return to previous levels may be unrealistic as parents are now expected to cover the cost for preschool education.³ This may restrict the access of children from socially vulnerable groups, which, according to estimations, constitute more than 55% of the country's population.²

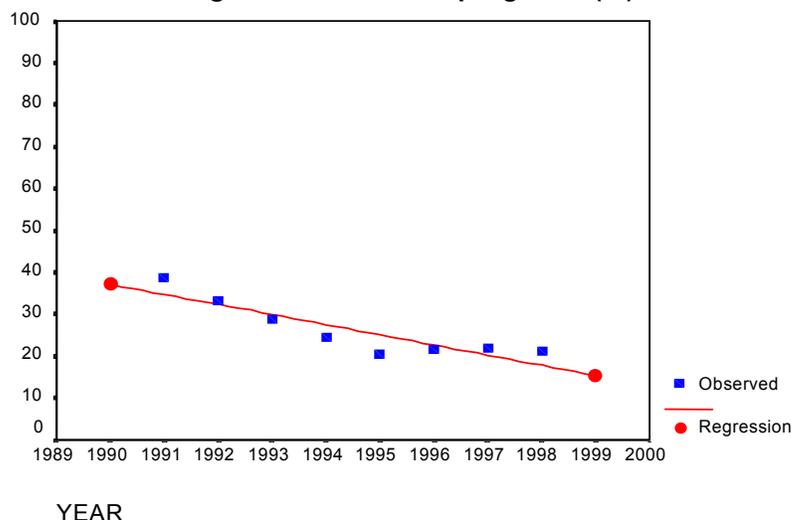
Table 26.1: Enrolment of children aged 36-71 months in organized education programs (%).

| | 1988-1989 | 1991-1992 | 1992-1993 | 1993-1994 | 1994-1995 | 1995-1996 | 1996-1997 | 1997-1998 | 1998-1999 |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total country % | 44.8 | 38.6 | 33.2 | 28.7 | 24.3 | 20.5 | 21.6 | 21.9 | 21.2 |
| Boys | | | | | | | | | 22.0 |
| Girls | | | | | | | | | 20.4 |
| Urban % | 56.1 | - | 36.7 | 31.6 | 27.8 | 24.6 | - | - | 28.0 |
| Rural % | 24.8 | - | 26.7 | 23.5 | 18.3 | 13.5 | - | - | 11.0 |

Source: Education for All. National Report, Republic of Armenia, Yerevan 1999. (Primary sources: Ministry of Statistics, Ministry of Education and Science RA)

A regression line was used to estimate the change in the enrollment rate over the decade (figure 26-1). According to this measurement a 21.6% absolute reduction of the preschool enrollment rate was observed, equal to a 58.2% reduction from the 1990 level.

Figure 26-1: Enrolment of children aged 36-71 months in organized education programs (%)



There is an emerging interest in alternatives to public kindergartens such as private kindergartens and quality home-based day-care businesses. There is a profound lack of information/learning resource regarding early childhood activities available to parents.³

4. Disparities

Considerable disparities in the preschool enrollment rate were observed between urban and rural areas. The rate was almost two times higher in urban areas than in rural. This difference was relatively stable over the decade (table 26.1). Potential explanations for this difference include differing employment patterns of women in urban and rural areas, tradition of living in more expanded families in rural areas, and less developed/less accessible network of kindergartens in rural areas, etc.

There were almost no between-gender differences in preschool enrollment rate. In 1998-1999 school year the enrollment rate was 20.4% for girls and 22.0% for boys.¹

B. Underweight prevalence

3. Trends

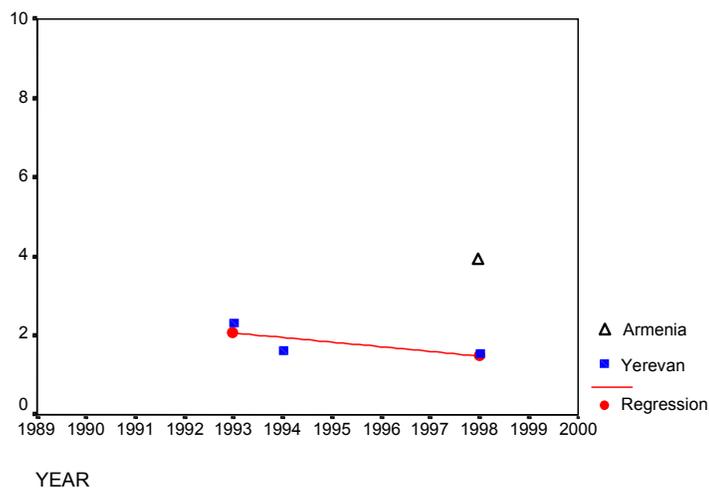
According to the Yerevan surveillance project, underweight prevalence among under-five children was 2.3% in 1993 and 1.6% in 1994, a prevalence that can be expected in a normal population.^{4,5} Findings of the 1998 national nutritional survey⁶ also showed low prevalence of underweight among under-five children residing in Yerevan (1.57%). However, the national data reported in this study was considerably higher, though still within an acceptable range (3.91%). No earlier data are available making a judgment about trends over the decade difficult. Extrapolating the trend observed for the Yerevan data, estimating a reduction by 28.6% over the study period (Table 26.2 and Figure 26-2), to the national data may be inappropriate as Yerevan represents a distinct subpopulation in the country.

Table 26.2: Underweight Prevalence of Under-5 Children residing in Yerevan

| Prevalence of: | 1993 (n = 9576) | 1994 (n = 27823) | 1994 (n = 27823) |
|---|--------------------|---------------------|---------------------|
| Underweight (Low Weight for Age) | 2.3% | 1.6% | 1.53% |

Sources: Armenian Monthly Public Health Reports, Ministry of Health, RA, Annual Publications for 1993 and 1994; Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

Figure 26-2: Dynamics of underweight prevalence, Yerevan, 1993-98



4. Disparities

The 1998 national nutritional survey revealed strong variation in under-five underweight prevalence among regions. The highest prevalence (>11%) was found in the southern Marzes of Syunik and Vayots Dzor (table 26.3). Also, variations were observed by gender and by refugee status with somewhat higher prevalence of underweight in rural areas and among refugees (table 26.4).⁶

Table 26.3: Underweight Prevalence in children < 5 by Marzes, 1998

| Marzes of Armenia | Underweight Prevalence (%) |
|------------------------|----------------------------|
| Armenia (total) | 3.91 |
| Yerevan | 1.53 |
| Aragatsotn | 2.64 |
| Ararat | 3.07 |
| Armavir | 5.44 |
| Gegharkunik | 5.92 |
| Lori | 3.14 |
| Kotayk | 3.78 |
| Shirak | 5.62 |
| Syunik | 11.42 |
| Vayots Dzor | 11.53 |
| Tavush | 2.64 |

Source: Branca F., et al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

Table 26.4: Prevalence of Underweight (Low Weight-for-Age) in Armenia, 1998

| | Weight-for-age (%) | | |
|--|--------------------|------------------|--------------|
| | < (- 3) SD | (- 3) – (- 2) SD | Normal |
| Urban Residents (n = 790) | 0.38 | 2.91 | 96.71 |
| Rural Residents (n = 966) | 0.61 | 4.10 | 95.29 |
| Urban Refugees (n = 611) | 1.62 | 2.91 | 95.48 |
| Rural Refugees (n = 826) | 1.20 | 3.72 | 95.08 |
| Weighted Total⁶ (n = 3193) | 0.55 | 3.36 | 96.10 |

Source: Branca F., et.al., The Health and Nutritional Status of Children and Women in Armenia, National Institute of Nutrition – Italy, MOH – Armenia, UNICEF, WFP, UNHCR, September, 1998

5. Data Quality/Limitations

The data on preschool development have several limitations including the exclusion of children involved in developmental activities other than formal enrollment in preschool institutions. Also, the use of an outdated population estimate artificially underreports rates, as there has been considerable emigration during the last decade.

With respect to under-five underweight data, the Yerevan study^{4,5} reflects a unique, though quite large, sub-population of Armenia. As such, care must be taken in using this data as a surrogate for population data. This limitation is demonstrated by the 1998 national data⁶ that consistently shows wide variation in the indicators across marzes. The 1998 national study had several methodological limitations, but none that cast doubt on the magnitude of the findings.

6. Comments/Conclusion

The decreasing trend of enrollment in preschool institutions observed over the decade reflects the radical, widespread socio-economic decline across much of the population. Whether this function is now being provided through informal or emerging private sector alternatives is unknown. It seems apparent, however, that there is substantial unmet need for early childhood development opportunities and for the development of parenting skills/learning resources to fill the void left by the collapse of the public sector system.

Although available data show that there is no problem of acute malnutrition among under-five in Yerevan and in the country as a whole, the high numbers of under-five underweight prevalence in some marzes does indicate the existence of serious problems with child nutrition in these areas.

Early Childhood Development: Clearly unmet
Underweight Prevalence: Partially met

7. References

1. *Education for All, National Report*. Republic of Armenia, Yerevan, 1999.
2. *Pre-Primary and General Education*. Republic of Armenia, Ministry of Statistics, Ministry of Education and Science and UNICEF, Yerevan, 2000.
3. *Situation Analysis of Children and Women in Armenia*. Government of Armenia, UNICEF, 1994.

4. Armenian Monthly Public Health Reports, Emergency Public Health Information Surveillance System, 1993, No. 14 (annual).
5. Armenian Monthly Public Health Reports, Emergency Public Health Information Surveillance System, 1994 (annual).
6. Branca F., et.al., *The Health and Nutritional Status of Children and Women in Armenia*. National Institute of Nutrition (Italy), Ministry of Health (Armenia), UNICEF, WFP, UNHCR, September, 1998.

Goal 27. Mass Media: Knowledge, Skills, and Values for Better Living

- World Summit Goal: Increased acquisition by individuals and families of the knowledge, skills, and values required for better living; made available through all educational channels, including the mass media, other forms of modern and traditional communication and social action, with effectiveness measure in terms of behavioral change
- Indicators:
 - None Indicated

1. Definition/Indicators

Although no indicators were specified in the technical guidelines, a previous report¹ identified the total annual number of information campaigns promoting healthy lifestyles and education, and the proportion of campaigns that had significant impact on behavior.

2. Data Sources

No national statistics on this indicator exist; however, there are a number of program/project specific reports providing relevant information.¹⁻⁸

The most comprehensive health communication campaign in Armenia, utilizing television, radio, print materials and community activities, was conducted from June to November 2000. The campaign promoted government family planning service facilities. Preliminary results on media exposure and attendance at the facilities have been reported and an extensive evaluation is in progress.^{4,9}

A Communications Situation Analysis² was conducted in 1998 in order to provide information for the 1998 Situation Analysis on Children and Women in Armenia.¹ The analysis included communication information in the health and education sectors. Primary and secondary data sources used in the report are shown in table 27-1.

Table 27-1 Sources of Information for Communication Situation Analysis

| Name of Section in Report | Information Sources | |
|--|----------------------------------|--------------------------|
| | Primary | Secondary |
| Perceptions, Attitudes and Information Sources of Key Groups | Phone interviews Focus groups | Reports |
| Organizations | Phone interviews | Directories |
| Communication Channels | Phone interviews Focus groups | Publications and surveys |
| Communication Resources | Phone interviews | Publication and surveys |
| Past Experiences in Communication Campaigns | N/A | Reports |

Source: McPherson & Danielian, Communications Situation Analysis in Armenia, June 1998

As a result of recommendations from the Communications Situation Analysis, UNICEF-Armenia sponsored a Communication Training Project to train Armenian non-governmental organizations (NGO) to conduct communication campaigns aimed at changing awareness, attitudes, and

behavior of the public on health-related issues. Four projects were implemented and evaluated by NGOs and an independent expert.³

A 1998 report on caretakers' responses to UNICEF educational booklets⁵ describes the results of focus group research to pretest health education materials. UNICEF/Armenia prepared two four-page booklets for parents of children aged 0-5 years on home management of "colds" and diarrhea infections. Four focus groups were conducted to assess reactions to the booklets and make them more understandable and useful for parents.

A 1998 report describes the results of a two-year health education intervention for pregnant women.⁶ Under this project, a prenatal care booklet was developed and distributed to a group of pregnant women. A subgroup of these women also received counseling from trained health care providers.

Wellstart International, funded by USAID, conducted a mass media campaign in the fall of 1994 to promote breastfeeding.⁷ A 1997 national infant feeding practices study⁸ was conducted to determine the magnitude of the changes and guide recommendation for future breastfeeding interventions.

3. Trends

The use of communication campaigns for health education programs is a relatively untapped resource in Armenia. Findings from several reports indicate that television is the most effective means of mass communication in the country. As outlined in Table 27.2, Armenians are dependent upon television for information: 78% urban, 85% rural. Newspapers are often not available or too expensive, and the high purchase cost of new receivers limit the public's access to radio. Because of the economic realities of the current print media and the resulting scarcity of publications, the public is dependent on television for most of their information. It also appears over 96 percent of homes in Yerevan and 89 percent of rural homes own a working television and are able to watch transmissions of the State television channel.²

Table 27.2 Most Used Mass Medium for Information in Armenia (N=1200)

| | Television | Newspapers | Radio | Conversations |
|------------------|------------|------------|-------|---------------|
| People in Cities | 78% | 12% | 11% | 10% |
| Villages | 85% | 10% | 13% | 18% |

Source: McPherson & Danielian, Communications Situation Analysis in Armenia (Prime Source: Hekimian 1997, NGO Team 1997, Sociological Research Center 1997)

The number of formal evaluations of health-related communication campaigns conducted is relatively low, but they indicate media are a very powerful source to expose and educate a large, cross-section of the public to information. Due to the high literacy rate, targeted media messages played at appropriate times have been effective; especially those coordinated with appropriate print materials.^{3,4} One newspaper, *Aravot Daily*, is currently the only periodical that has a separate page to cover gender issues. The page targets women readers and often contains information on women and men's psychological and health-related peculiarities.

Under the large-scale communication campaign conducted in 2000, 11 leaders from government and non-governmental organizations were trained in health communication including the design,

implementation and evaluation of communication projects. Over one hundred health care providers and pharmacists also received training in communication and client-provider interaction.

The 2000 campaign also monitored attendance at family planning service facilities that were promoted in the media. Attendance at the facilities increased by 165% in the first month of the campaign. The majority of new clients cited television as the source of information about the facilities.

As a result of the UNICEF/Armenia NGO Communication Campaign Training Project,³ four NGO organizations learned how to plan and conduct communication campaigns. The selected projects were designed to begin and end between March and May 1999. The NGOs used television, radio, leaflets, and roundtable discussions to distribute information about AIDS, breastfeeding knowledge, and disabled children. Reports indicate an increase in capacity for production of effective public service announcements and development of strategies that meet with governmental approval. The outcome of their projects was reported as highly successful. Recommendations from the overall communication project were to continue such campaigns and to encourage other NGOs to use similar approaches to public health education.

Another example of a campaign that effected change on public behavior was demonstrated in a 1997 national survey on infant feeding practices.⁸ Numerous interventions were implemented from 1993-1997 to increase the percentage of breastfed infants. In 1993, Wellstart International began a mass media breastfeeding campaign.⁷ Deteriorating socio-economic conditions in the country led other agencies to also become involved in breastfeeding promotion. The 1997 national study attempted to measure any behavioral changes and to obtain information for future breastfeeding promotion. A cluster sample of 400 mothers was asked about exposure to breastfeeding information. Mothers in Yerevan and the Regions responded their primary educational source was television; however, over one-half of the mothers also reported reading materials on the topic (table 27.3). The researchers were able to conclude that mass media education including distribution of brochures have positively affected practices. Among the improvements was an increase of exclusively breastfed babies during their first four-months of life from 0.7 (1993) to 20 percent (1997).

Table 27.3 Exposure to Media for Potential Health Education Campaign, 1997, (N=400)

| Media Channel | Yerevan | Regions |
|---|---------|---------|
| Have a working TV in home | 96.5% | 89.3% |
| Watched Armenian channel within last 48 hours | 70.7% | 58% |
| Have a working radio in home | 56.3 | 23.7% |
| Listened to radio within last 48 hours | 31.3% | 9.6% |
| Read Armenian newspaper within last 2 weeks | 31.7% | 7.4% |
| Read any materials about breast feeding | 66.2% | 50% |
| Read brochure on breast feeding | 46.3% | 21.7% |

Source: Infant Feeding Practices in Armenia, AUA, Center for Health Service Research and UNICEF, 1997

A 1998 report evaluated the effectiveness of a maternal education booklet entitled “Healthy Pregnancy.”⁶ It was inferred from literature reviews that there would be positive relationships between increased knowledge and pregnancy outcomes. Objectives of the project were to assess the sustainability of the positive changes in knowledge and health behaviors that had been attained by women during earlier phases of the project. One hundred twenty-two of the original 190 participants enrolled at the mid-term survey, agreed to participate in the post-delivery survey. The knowledge scores of the women who had read the booklet were significantly greater than those of the control group. In an environment where there is a lack of health education information, these women appeared motivated to read and apply information from the book. As a result of findings, the researchers recommended the booklet be revised and prepared for larger circulation.

4. Disparities

Some promising studies were located about mothers and children, but none could be found about public health programs dealing with critical topics such as smoking, alcohol consumption and chronic diseases. Although encouraging results were obtained in the small number of health care studies undertaken, much work remains to be done.

Information from the 1998 Situation Analysis on Women and Children¹ describes legislative issues associated with Armenian media. Legislation is needed to replace an outdated Soviet approach to media-related issues, which includes registration requirements for all publications. There is nothing in the regulations regarding mass media and public service announcements. A reference to “social advertisements” can be found in the 1996 Law on Advertisements. It calls for all advertisement carriers to provide priority placement in at least five-percent of broadcasting time or newspapers for non-commercial social advertisements representing national interests in such areas as the population’s health, public health, environment protection, and social security. This legislation apparently is not binding, and there is no provision for the reduction or waiver of fees for the broadcasting of public service announcements.

5. Data Quality; Limitations

The Communications Situation Analysis² reported on the field of communications for health and education endeavors in Armenia. The research was broad in scope, and the researchers reported many gaps in information regarding perceptions, attitudes, and information sources of their target population. This initial effort must be followed by future comprehensive studies on the topic.

The project specific reports, while each has its own limitations, provide compelling evidence of the potential reach and power of media, specifically television, to effect behavioral changes in Armenia

6. Conclusions

Television remains the predominant source of information for adults and adolescents. Radio and printed materials also hold promise as channels for future communication campaigns. Some television channels including National TV and Armenia TV, broadcast several programs relating to women and could serve as an avenue for airing health-related subjects. Given the sporadic nature of the presentation of health and education issues using the media, concerted effort should be expended by a variety of organizations to capitalize on its use. Communication campaigns that seek to change

attitudes or behaviors need to use a variety of methods and take into consideration what has succeeded in the past within the limitations of the country. Very little is known about how to most effectively tap Armenia's media's potential to effect knowledge, attitude, and behavior changes in the general population, and strategies and techniques need to be more fully developed.

The use of the mass media is still in transition from the Soviet-era and has made some progress. The studies cited in this report demonstrate the value of mass media campaigns on health-related topics and there is a huge fertile field for subsequent endeavors in both health and education. However, caution from experts point out the success of future health-related campaigns clearly depends on the ability to gain free-of-charge access to broadcast channels that reach most of the population. There remains a need for an overall national communication strategy in the health and education sectors.

Increased Skills Through Mass Media: Partially Met

7. References

1. *Situation Analysis of Children and Women in Armenia 1998*. Government of Armenia, UNICEF, Save the Children, 1999.
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6. McPherson RA, Markosian K. Final Phase of the Evaluation of a Health Education Program for Pregnant Women in Yerevan, A Report for Jinishian Memorial Program. American University of Armenia Center for Health Services Research, Yerevan, Armenia, April 1998.
7. Wellstart International (Holley-Newsome, Martha), *Armenia Communications Campaign Monitoring Report*. USAID, February 1995.
8. Hekimian, KM, *Infant Feeding Practices in Armenia: Report on Comparative Study and National Survey*. American University of Armenia Center for Health Services Research, Funded by UNICEF/Armenia, June, 1997.
9. *Baseline Reproductive Health Survey: Assessment of the "Green Path" Campaign*. Center for Health Services Research, American University of Armenia, Yerevan, Armenia, October 2000.

AI 1. Additional Indicators for Monitoring Children's Rights

- World Summit Goal: There is no specific goal, and the purpose of given indicators is to monitor the situation of children, focusing on children who may be especially disadvantaged.
- Indicators:
 - ✓ Birth registration - proportion of children 0-59 months whose births are reported registered
 - ✓ Children's living arrangements: proportion of children 0-14 years in households not living with biological parent
 - ✓ Orphans in household: proportion of children 0-14 years who are orphans living in households
 - ✓ Child labor: proportion of children 5-14 years who are currently working (paid or unpaid; inside or outside home)
- Target for Armenia: The general target is protection of rights of children in the Republic.

1. Definition/Indicators:

Definition of the indicator “birth registration” used in the text is different from the given definition. The official numbers obtained from the Ministry of Health and Ministry of Statistics are available only for under-1 children. For under-five children no data is available.

The only data available on orphans living in households is for age range 0-17. There are no locally used definitions/data for the remaining indicators.

2. Data Sources

Four main sources of information for these indicators were identified.

Official data from Ministry of Social Security, Ministry of Health and Ministry of Statistics was excerpted from available annual reports and personal communication with officials.

The methodology of the August 2000 UNICEF *Situation Analysis regarding Children in Residential Institution in Armenia and Resources for Alternative, Community-Based Services*¹ included analysis of documents, research papers, and mission reports. In addition, there were interviews with government officials and other technical resource persons at institutions and agencies. A total of 21 institutions were visited and the directors and staff interviewed.

A Situational Analysis of Children and Women in Armenia 1998,² focused on those areas identified by the Convention of the Rights of the Child (CRC) adopted by the UN General Assembly in November 1989. The report was developed using over 80 reports, articles, and studies to identify progress regarding the CRC goals to view the situation of children and women in Armenia.

The 1998 UNDP report on the Social Indicators of Poverty: Education, Health, Households, Pensioners is the result of consolidated efforts of experts from different fields, interviewers and researchers. Researchers used data banks from the Ministry of Statistics, State Register and Analysis, Ministry of Health, Ministry of Education and Sciences, Ministry of Finance and Economy, and other Ministries.

3. Trends

No formal studies exist on proportion of children 0-59 months whose births are reported registered. Official statistics on the registration of children during the first year of life are believed to be relatively reliable. It shows that the proportion of registered births out of all live births was 99% in 1999 (Table AII.1). During the previous years the proportion of registered births was even higher. Moreover, for the years 1991-1997, the number of births registered by birth registration offices (reported by the Ministry of Statistics) exceeded the number of live births reported to the Ministry of Health by the Obstetric care services. This discrepancy may be due to the registration of children born in other countries and/or underreporting of home births by local obstetric care services that are responsible for reporting this data to the Ministry of Health.

Table AII.1: Registration of Children in Armenia under one-year

| Year | # Births Maternity Facilities | Home Births | Total | Registered cases under 1 year | Differences | Percentage Differences |
|------|-------------------------------|-------------|--------|-------------------------------|-------------|------------------------|
| 1999 | 35,879 | 995 | 36,874 | 36,502 | -372 | 1.0% |
| 1998 | 38,906 | 1,234 | 39,640 | 39,366 | -274 | 0.7% |
| 1997 | 41,693 | 1,700 | 43,393 | 43,929 | +536* | |
| 1996 | 45,286 | 2,041 | 47,327 | 48,134 | +707* | |
| 1995 | 45,389 | 3,361 | 48,750 | 48,960 | +210* | |
| 1994 | 46,273 | 3,298 | 49,571 | 51,143 | +1,572* | |
| 1992 | 69,023 | 756 | 69,781 | 70,581 | +800* | |
| 1991 | 77,575 | 174 | 77,749 | 77,825 | +78* | |
| 1990 | 80,039 | 134 | 80,177 | 79,882 | -295 | 0.37% |

Data Source: Ministry of Health/Ministry of Statistics 2000

There are no official statistics on the proportion of children 0-14 years in households not living with biological parent. Some limited data do exist covering several subpopulations of this group, including orphans (single or both parents) receiving social assistance and adopted children, but none on children living with family members or other informal relationships where the child is not living with a biological parent.

Data on orphaned children is not routinely collected, as Armenia has no formalized system of foster care. The Ministry of Social Security does report data on those orphans receiving allowances from the state. In 1999 the number of children 0-17 years old who received this allowance was 24,380, out of whom 701 children had lost both parents and 23,679 children had lost one parent. Not all orphans are registered to receive this allowance, particularly those living in state institutions, and thus this number represents the lower bounds for the true value.

The data on adopted children is also rather incomplete. Adoption is considered a confidential issue and parents of adopted children do not receive any specialized social services. The only data available from Ministry of Social Security reported that 2,070 children (approximately 300 per year) were adopted during the period 1993-1998. Interestingly, a survey of the dynamics of adoption in Armenia carried out by the Ministry of Social Security in 1998 revealed that only 140

children were adopted from orphanages operating in the country between 1993 and 1998² (table AI1.2).

Table AI1.2: Adoptions from Five Orphanages in Armenia

| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 to 1 May |
|-------|------|------|------|------|------|------------------|
| Girls | 8 | 12 | 16 | 13 | 24 | 8 |
| Boys | 8 | 4 | 7 | 10 | 22 | 8 |
| Total | 16 | 16 | 23 | 23 | 46 | 16 |

Source: Situation Analysis of Children and Women in Armenia 1998, UNICEF, GoA, SCF

There have been no studies that address child labor, but observations of children working in the streets indicate the existence of an increasing problem in this area. According to the Labor Code adopted in Armenia, children may start to work at age 15 years. Although they are protected by certain privileges, it is difficult to enforce the law. The extent of working children is difficult to assess. However, there are some statistics from the government, which indicates a relatively new phenomenon of children living and working in the streets. Children can be observed selling newspapers, flowers, and other goods in Yerevan and other communities.² In 1997, 325 children were collected off the streets by the police and taken to the Underage Receiving and Distribution Center (URDC), but the actual number of children living or working on the streets is believed to be three times the reported figures (Table AI1.3). There is evidence of adults exploiting children and keeping all or most of their earnings².

Table AI1.3: Children Registered at Underage Receiving and Distribution Center

| Fate of Child | 1995 | 1996 | 1997 |
|---|------|------|------|
| Sent back to parents/guardians | --- | 260 | 187 |
| Sent to orphanages/boarding schools | --- | 24 | 12 |
| Sent to Republican Special Complex | --- | 25 | 20 |
| Sent to Yerevan Special Boarding School | --- | 35 | 87 |
| Sent to Medical Institutions | --- | 6 | 19 |
| Total | 100 | 350 | 325 |

Source: Situation Analysis of Children and Women in Armenia, 1998 (Prime Source: Ministry of Internal Affairs and National Security, RoA, 1998)

Child labor is viewed as the norm with the rural Armenian family. Children are expected to assist with household duties as well as work in the fields when it is harvest season. According to the findings of a large-scale nation-wide household survey carried out in 1996 by the Ministry of Statistics and the World Bank, some 1.4% of parents stated child labor as the main reason for their child's absence from school. In some Marzes, however (e.g. Gegharhunik), this percentage was as high as 20%.³

In terms of ensuring the rights of children, one may find relevant information from the state of institutionalized children. Armenia has a reported 59 institutions (42 boarding schools, 10 kindergartens and 7 orphanages) with approximately 10,000 children on the registration lists.² In

Yerevan, the majority of children (54%) are permanent residents; but outside the capital, most of the children (82%) reside in the institutions during the day and return home at night.² Generally, children in institutions are extremely vulnerable and isolated. Many are integrated with disabled or handicapped children diagnosed with mental retardation and other impairments. The development of these children is reported as seriously hampered by a lack of appropriate interaction, education, and health opportunities¹. The Ministry of Education and Science reports that the number of institutionalized children appears to be increasing. Extremely disadvantaged families are increasingly using institutions to provide care for their children. Orphanages and boarding schools have waiting lists to receive children for placement.²

In March-May 1997, the Statistical Department of the Republic of Armenia initiated a study of 32 schools of special assignment functioning in Armenia.³ The study included samples of orphanages, boarding schools, and other special assignment institutions. The total number of students studying in these institutions was 5951, of which 43.5% were girls. Since 1990, the number of students in these institutions has increased by 1,081 students or by 22 percent. The increase occurred simultaneously with a sharp decrease in the number of children enrolled in regular schools. This shift is thought to be reflective of the worsening social-economic situation. A significant number of the boarding school children (89.6%) were from poor or poverty-stricken families. Approximately 44 percent of the schools depended upon charitable organizations for support.

These findings confirm the relationship between the worsening economic situation and an increasing reliance by disadvantaged families on institutions. Also, they underscored the importance of measures currently undertaken by the Ministry of Social Security to move away from the traditional approach of large institutions towards encouraging smaller family-style institutions, foster care, and adoption.⁵

4. Disparities

Child labor is more common in rural areas. An extreme example is Gegharkunik marz, where 20% of parents enrolled in 1996 study³ stated child labor as the main reason of a child's absence from school. There are no data on gender, regional, or urban/rural differences for the rest of indicators.

Armenia ratified the Convention on the Rights of the Child (CRC) in 1992 and passed the Law of the Republic of Armenia on the Rights of the Child in 1996. However, the general population is still largely unfamiliar with the law. Although some projects have been implemented, none have been comprehensive and efficient². Due to cooperation between the government and international organizations, there are some improvements for children in the area of health indicators such as immunization programs. However, improvements in social and educational indicators are less positive¹. From 1989 to 1997, the Ministry of Statistics reported births to unmarried women as a percentage of total live births have steadily increased from 7.9 percent to 25.8 percent. However, these statistics are questioned because it appears many may register as single mothers to receive humanitarian aid or monthly governmental pensions. In regard to education, the public expenditure on education as a percent of the GDP declined from a peak of 8.9 percent in 1992 to a low of 1.7 percent in 1997.

5. Data Quality/Limitations

The data are limited and often founded on a number of underlying assumptions with no studies/routine reporting systems that specifically address the situation. One reason is the difficulty of locating the children, who may be living on the streets or with relatives. Scarce governmental funds decrease incentives for families or caretakers of children with special needs to apply for services; therefore the reliability of registry statistics is questionable.

6. Comments/Conclusions

Armenia has undergone tremendous social and economic changes during this decade, which have resulted in the majority of the population living in difficult circumstances. Much of the population qualifies as socially vulnerable, and, according to recommendations from a situation analysis conducted in 2000, an urgent, in-depth investigation of the economic, social and psychological capabilities and needs of all children's families is needed. Urgent measures should be undertaken to address needs of children in institutions, who, along with growing population of children living and working in streets, constitute the most disadvantaged group of children in the country.

Birth Registration: Clearly met

Children's Living Arrangements: Unable to assess [Anecdotally perceived as Substantially Met]

Orphans in Household: Unable to Assess [Anecdotally perceived as Substantially unmet]

Child Labor: Unable to Assess [Anecdotal assessments vary widely by region/season]

7. References:

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3. *Social Indicators of Poverty*. Ministry of Statistics of Armenia, United Nations Development Programme, Yerevan, 1998
4. *System for Vulnerability Assessment, Experience and Analysis*. Ministry of Social Security of Armenia prepared with assistance from the UN World Food Programme, Republic of Armenia, February 1999
5. Gamova,L., Oganesian M. Street Children: The Demise of the "Happy Childhood" Image in the Armenian Society. *The Changing Society, No. 1., Risk Groups*, 1996.

Goal AI 2. Integrated Management of Child Illness (IMCI) and Malaria

- World Summit Goal: There is no specific goal, and the purpose of given indicators is to monitor the situation with the Integrated Management of Child Illness (IMCI) and malaria
- Indicators:
 - ✓ Home management of illness: Proportion of children 0-59 months reported ill during the last 2-weeks who received increased fluids and continued feeding
 - ✓ Care seeking knowledge: Proportion of caretakers of children 0-59 months who know at least 2 of the following signs for seeking care immediately: child not able to drink or breast feed, child becomes sicker, child develops a fever, child has fast breathing, child has difficulty breast feeding, child has blood in stools, child is drinking poorly
 - ✓ Bednets: Proportion of children 0-59 month who slept under an insecticide impregnated bednet during the previous night
 - ✓ Malaria treatment: Proportion of children 0-59 months who were ill with fever (in malaria risk areas) in the last two-weeks who received anti-malarial drugs
- Target for Armenia: Implementation of Integrated Management of Child Illness (IMCI) and malaria control

1. Definition/Indicators

The Integrated Management of Child Illness (IMCI) in Armenia is currently in the adaptation stage, thus, its indicators are not yet implemented and/or monitored. However, programs on Control of Diarrheal Diseases and Acute Respiratory Infections have indicators that consist of similar information for a slightly narrower target population. For example, the definition for home management of illness was formulated in the same way in the 1997 survey on caretakers' knowledge for Acute Respiratory Infections and Diarrheal Diseases in children under-five¹. Indicators of care seeking knowledge in this survey were based on slightly different list of signs for seeking immediate care. These signs were: many watery stools, repeated vomiting, marked thirst, not eating/drinking well, blood in stool, not getting better/getting sicker/very sick for diarrhea, and fast breathing, difficult breathing, not getting better/getting sicker/very sick, fever, noisy breathing, not eating/drinking well for Acute Respiratory Infections.

The indicators of bednets and malaria treatment have yet to be monitored in Armenia; thus, there is no local definition for these indicators.

2. Data Sources

The only available source of information on home management and on care seeking knowledge is the above-mentioned 1997 National survey¹. Two separate 30-cluster surveys were conducted, one in Yerevan, and one in the Regions. Mothers of 1 577 under-five children from different urban and rural areas of the republic were enrolled in the survey. The survey questionnaire was virtually identical to the "Core ARI" and "Core DD" questionnaires contained in the "Household Survey Manual: Diarrhea and Acute Respiratory Infections" published by the Division for the control of Diarrhea and Acute Respiratory Disease of the WHO in 1994.

Information on the malaria situation was gathered through direct communication with Ministry of Health officials. Annual Statistical Collection of Ministry of Health² and an article by Davidiants, V et al. on Epidemic Malaria Transmission published in CDC Mortality and Morbidity Weekly

Report³ were also used as sources of information. The primary source of information for these publications was Ministry of Health data on officially registered cases.

3. Trends

According to the 1997 survey, only 30% of children 0-59 months of age reported having had diarrhea during the last two weeks had received both increased fluids and continued feeding. Meanwhile, 49% of them had received more fluids during the illness, and 63% had received continued feeding¹. No such data is available for other childhood illnesses included in the list of IMCI.

Care seeking knowledge was assessed during the same 1997 survey separately for diarrheal diseases and for acute respiratory infections (ARI). According to its findings, only 44% of the respondents could name at least two correct reasons for seeking care during a diarrhea episode. With respect to care seeking knowledge for ARI, only 5% of the enrolled caretakers of under-five children considered it necessary to seek care when cough is accompanied by fast breathing. Only 32% of the respondents mentioned cough and fever in their under-five child as reason for seeking care¹. Thus, care-seeking knowledge was quite low. Unfortunately, trend data for these two IMCI indicators is not available.

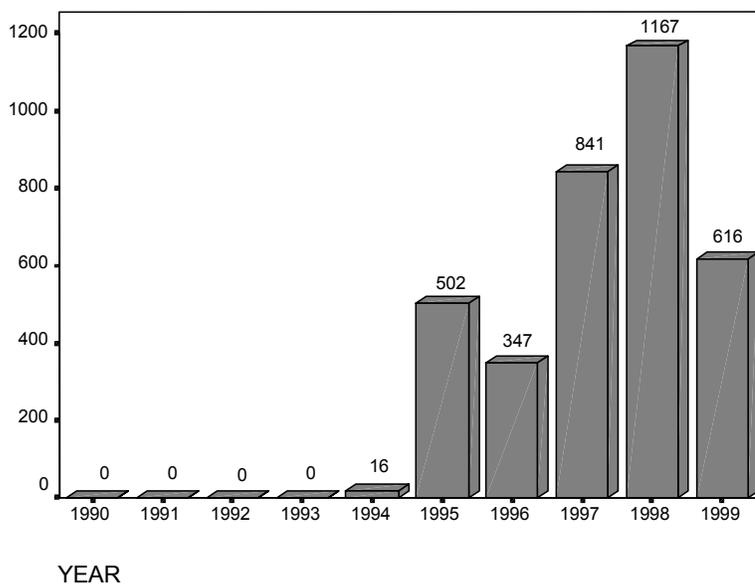
Armenia had been a malaria-free country since the 1940s. This was due to malaria eradication efforts, including mosquito vector control through use of mosquito-larvivorous fish (*Gambusia affinis*), insecticide spraying, and reduction of mosquito breeding sites. In the late 1980s these activities were discontinued because of the serious socio-economic difficulties faced by the country. As a result, malaria has reemerged, probably connected with imported cases transmitting infection via the increased density of vectors. The first indigenous case of the disease was registered in 1994; however, during 1995 all 502 registered cases were imported. In 1996 the ratio of imported and locally acquired cases was 198 to 149, and in 1997, 274 to 567 respectively. The numbers of registered cases reached 1 167 in 1998 (table AI2.1 and figure AI2-1). The epidemic is primarily located in the Masis Region of Ararat Marz. *Anopheles maculipennis* was identified as the most common vector captured in 98% of cases³.

Table AI 2.1: Number of Registered Cases of Malaria in Armenia, 1990-99

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|------------------------------|------|------|------|------|------|------|------|------|------|------|
| # of cases | 0 | 0 | 0 | 0 | 16 | 502 | 347 | 841 | 1167 | 616 |
| Rate per 100,000 pop. | - | - | - | - | 0.4 | 13.4 | 9.2 | 22.2 | 30.8 | 16.2 |

Sources: Health and Care of Public Health. Statistical Collection, Ministry of Health of Armenia, Armenia, 1999.

Figure AI 2-1: Incidence of Malaria, Armenia



A comprehensive National Program of Malaria Control has been launched by the Ministry of Health to address the epidemic. As part of this program's early efforts, a limited supply of bednets was distributed. Therefore, although no studies on bednet usage have been conducted, the proportion of children 0-59 month who sleep under an insecticide impregnated bednet can confidently be estimated as quite small, even within the high-risk area.

Administration of anti-malarial drugs to under-five children with fever in malaria risk areas is not accepted practice. According to MOH data, 16 children under-five were diagnosed with malaria during 1999, although only 1 through the first 11 months of 2000.

4. Disparities

According to 1997 National survey results, there were no differences between Yerevan and Regions in terms of home management of illnesses. However, Yerevan population showed somewhat higher levels of care seeking knowledge than the population in the Regions¹.

With respect to disparities in malaria cases, the epidemic was located mainly in Ararat Marz, with an incidence rate of 19-22 per 100,000 population in 1997, and particularly in the Masis Region, with an incidence rate of 567 per 100,000 population in 1997. In other areas of Armenia, the incidence rate was much lower (0 – 3 per 100,000).³ In terms of age differences of malaria cases, out of 616 total cases registered in 1999, 16 were diagnosed in children under-five, and 43 – in children aged 5-14.⁴

5. Data quality/Limitations

Although the 1997 household survey had some limitations, its findings on home management and care seeking knowledge can be considered rather accurate.

No data is available on malaria indicators.

6. Comments/Conclusions

The program on IMCI is now being launched in Armenia. Available data show that its impact could be significant.

The emerging malaria epidemic is rather alarming. The National Program on Malaria Control will require significant resources to effectively respond to the situation.

Both programs have been slow to reorganize and, like many programs, are hampered by less than adequate resources.

Home Management: Partially Met

Care Seeking: Partially Met

Bednets: Unable to Assess

Malaria Treatment: Unable to Assess

IMCI Control Program: Just now being launched

Malaria Control Program: Developing action plan

7. References

1. *Caretakers' knowledge, treatment practices and care-seeking practices for Acute Respiratory Infections and Diarrheal Disease in Children aged 0-5 in Armenia, Report on National Survey.* American University of Armenia Center for Health Services Research, funded by UNICEF/Armenia, June, 1997.
2. *Health and Care of Public Health, Statistical Collection.* Ministry of Health of Armenia. Armenia, 1999.
3. *Health and Care of Public Health, Statistical Collection,* Ministry of Health of Armenia, Armenia, 1999.
4. Davidiants V. et al. Epidemic Malaria Transmission – Armenia, 1997. *Mortality and Morbidity Weekly Report*, CDC, July 3, 1998, Vol. 47, No. 25.
5. Direct Communication with Ministry of Health

Goal AI 3. Additional Indicators for Monitoring HIV/AIDS

- World Summit Goal: There is not a specific goal, there are eight indicators identified for monitoring HIV/AIDS
- Indicators:
 - ✓ Knowledge of preventing HIV/AIDS--proportion of women who correctly state the three main ways of avoiding HIV infection.
 - ✓ Knowledge of preventing HIV/AIDS--proportion of women, who correctly state Knowledge of misconceptions of HIV/AIDS--proportion of women who correctly identify three misconceptions about HIV/AIDS transmission.
 - ✓ Knowledge of mother to child transmission of HIV--proportion of women who correctly identify means of transmission of HIV from mother to child
 - ✓ Attitude to people with HIV/AIDS--proportion of women expressing a discriminatory attitude towards people with HIV/AIDS
 - ✓ Women who know where to be tested for HIV--proportion of women who know where to get an HIV test.
 - ✓ Attitude toward condom use--the proportion of women who state that it is acceptable for women in their areas to ask a man to use a condom
 - ✓ Adolescent sexual behavior--median age of girls/women at first pregnancy.

Targets for Armenia: Development of a national AIDS program in which trend data from each of the indicators are readily available.

1. Definition/Indicators

Definitions are consistent with the standard definitions.

2. Data Sources:

The primary information source for these indicators was a 2000 Situational Analysis Summary regarding HIV/AIDS in Armenia prepared by the National Center for AIDS Prevention.¹ Information for the analysis was collected from March to May 2000 and was implemented with the assistance of the United Nations Development Project and UNAIDS. Data were obtained from groups of people at high risk for having an HIV infection: injecting drug users, female sex workers, groups at high-risk of infection in penitentiaries, homosexuals, individuals diagnosed with sexually transmitted diseases, and migrants. Of the 95,000 laboratory tests for HIV carried out from 1995 to 1999, blood donors constituted the majority of the tested people

Another major data source was the 1998 Situation Analysis of Children and Women in Armenia, a joint effort of the Government and international organizations, to report on the progress of the country towards accomplishment of 1989 goals identified by the Convention on the Rights of the Child.² The report includes information about HIV/AIDS, which was obtained from the National AIDS Center and from the 1997 reproductive health survey.³

Information regarding women's knowledge of AIDS was found in the 1997 Reproductive Health Survey conducted by the National Program on Reproductive Health with the Ministry of Health of Armenia.³ This was the first nation-wide survey on the reproductive health of 1,000 Armenian women in their reproductive years. This data is supplemented from a recent baseline survey for

the evaluation of a national women's and reproductive health media campaign which collected similar information from 1212 women in Yerevan, Lori, Vayots Dzor, and Armavir Marzes.⁴

Another source was from an unpublished manuscript entitled "HIV Seroprevalence and Risk Behaviors among Commercial Sex Workers in Yerevan, Armenia."⁵ From June through August 1998, researchers measured the prevalence of HIV-1 infection among commercial sex workers (CSW) in Yerevan. They interviewed 200 CSWs, had them complete a questionnaire, and also obtained saliva-based ELISA tests.

Base line information was obtained from the "1996-97 National AIDS Bulletin I"⁶ prepared by the Armenian National Center for AIDS with assistance from the American University of Armenia Center for Health Services Research. The bulletin presents the available statistics of HIV/AIDS in Armenia, as documented through testing at the AIDS Center in Yerevan between January 1, 1996 and July 1, 1997.

The final source was from a 1996 report entitled "Knowledge and Attitudes of STDs, AIDS and Condom Use: A study of University Students in Yerevan" conducted by the American University of Armenia Center for Health Services Research.⁷ Data was collected among Armenian University students at four educational institutes in Yerevan. Eight hundred thirty-seven students responded to the 860 distributed questionnaires. Almost 60 percent (N=497) were from Yerevan; 24.1 percent (N=202) were from other Armenian cities; 11.7 percent (N=98) were from villages; and 4.8 percent (N=40) were from cities outside Armenia.

3. Trends

The National Center for AIDS Prevention located in Yerevan, Armenia, reported a recent rise in HIV/AIDS cases.¹ The first HIV carrier in Armenia was registered in 1988. Until 1995, only three cases of HIV/AIDS were identified. Over the period of 1995 to October 2000, the number of registered HIV-positive cases reached 135. Twenty-four of the infected have been diagnosed with AIDS; and eight of these were diagnosed in 1999. Thirty-five new cases of HIV-infection were registered in 1999. Official deaths due to AIDS number 14, with the first known female fatality occurring this year (table AI 3-1).

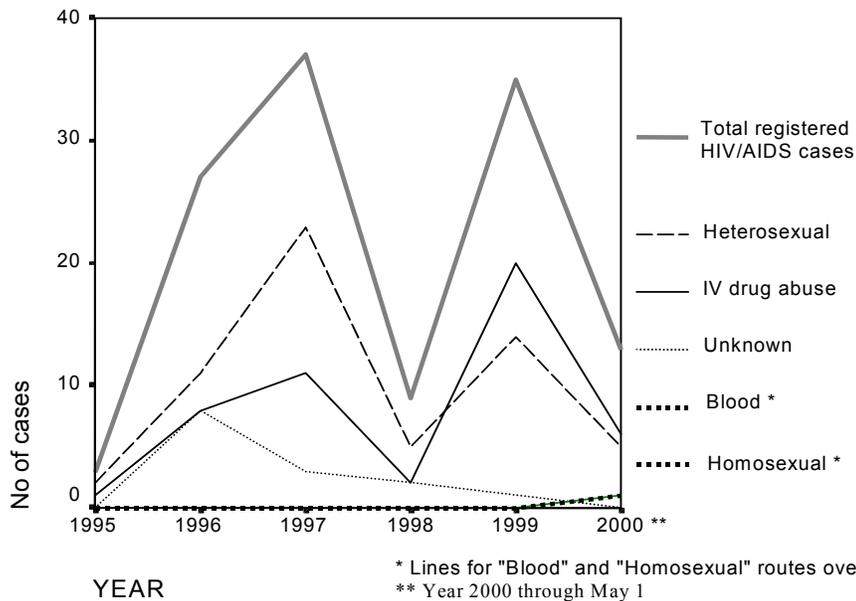
Table AI 3-1: HIV, AIDS, and Deaths Registered in Armenia by Gender

| Year | HIV | | | AIDS | | | Number of deaths | | |
|---------|------|--------|-------|------|--------|-------|------------------|--------|-------|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| <1995 | 3 | | 3 | 3 | | 3 | 2 | | 2 |
| 1996 | 19 | 8 | 27 | 7 | | 7 | 3 | | 3 |
| 1997 | 30 | 7 | 37 | 2 | | 2 | 1 | | 1 |
| 1998 | 5 | 4 | 9 | 1 | 1 | 2 | 2 | | 2 |
| 1999 | 26 | 9 | 35 | 6 | 2 | 8 | 1 | | 1 |
| 2000 | 18 | 6 | 24 | 1 | 1 | 2 | 3 | 1 | 4 |
| Unknown | | | | | | | 1 | | 1 |
| TOTAL | 101 | 34 | 135 | 20 | 4 | 24 | 13 | 1 | 14 |

Data Source: National Center for AIDS Prevention (through Oct 2000)

Preliminary studies of high-risk groups indicate there are probably many more HIV/AIDS cases than those registered by the Ministry. According to the National Center for AIDS Prevention,⁸ the actual number of people living with HIV/AIDS exceeds the officially registered number and is estimated to be closer to 1,500 cases. These estimates were projected from the examination of the high-risk groups such as intravenous drug users, prostitutes, and prisoners. The demographics of sexual transmission of HIV have changed during the past few years (Figure AI 3-1). Over 50 percent of HIV-infected men are intravenous drug users with sexual partners, who are not drug addicts and do not use protection. The dip in 1998 is not explained.

Figure AI 3-1: New HIV/AIDS Cases by Year and Transmission Routes



Source: Up to May 1, 2000, Situational Analysis Summary, National Center for AIDS Prevention

Knowledge of preventing HIV/AIDS or proportion of women, who correctly state the three main ways of avoiding HIV infection.

Although only four percent of 961 women indicated they had no knowledge of HIV as a sexually transmitted disease, researchers involved in the 1997-1998 Reproductive Health Survey³ reported the majority had erroneous ideas. However, most of the respondents knew HIV could be sexually transmitted, and it was also possible to be infected by HIV through receiving blood transfusions or the use of contaminated needles.

Knowledge of misconceptions of HIV/AIDS or proportion of women who correctly identify three misconceptions about HIV/AIDS.

Conclusions from a 1997-1998 National Reproductive survey of 961 women were that the majority had erroneous ideas about the transmission of HIV³. Among the most prevalent false ideas mentioned were the possibility of transmission through hand shaking, use of domestic objects of an infected person, treatment by a physician or dentist, and mosquito bites. Only 30 percent of the respondents understood that condoms protected against sexually transmitted diseases (including HIV), and knew they should not be reused. The situation had remained virtually unchanged as evidenced by the 2000 baseline.⁴

Knowledge of mother to child transmission of HIV, or proportion of women who correctly identify means of transmission of HIV from mother to child.

No data obtained; however, the National Center for AIDS Prevention recently reported several new registered cases of children born to HIV infected mothers and/or fathers. Testing of these infants will occur when they reach 15-18 months.

Attitude to people with HIV/AIDS, or proportion of women expressing a discriminatory attitude towards people with HIV/AIDS

No data were available; however the National Center for AIDS Prevention reported in their Spring 2000 survey of over 800 students that the majority indicated they would not create obstacles for members of high-risk populations to receive assistance, medical treatment, and/or free information.

Women who know where to be tested for HIV or proportion of women who know where to get an HIV test.

No data were located.

Attitude toward condom use or the proportion of women who state that it is acceptable for women in their areas to ask a man to use a condom.

No trend data; however, the 1997-1998 Reproductive Health Survey reported from a sample of 1,000 women that the condom is the third most popular method of contraception in Armenia. Thirty-five percent of the women reported ever using a condom while 17 percent of the sample reported they are current users. The 2000 baseline assessment showed similar results with 46.4% of 1212 women reporting ever having used condoms and 12% currently using condoms as their primary means of birth control. Roughly 32% felt that condoms were a good or excellent means of preventing HIV. In a 1998 study of 200 commercial street workers in Yerevan, only 10 percent reported they always used condoms. The reasons listed why they did not use condoms were 1) embarrassment to buy them and 2) their customers seldom provided them. Ninety-eight percent reported the pharmacy was their only source for obtaining condoms.

Adolescent sexual behavior or median age of girls/women at first pregnancy

According to the official data from Ministry of Statistics, the mean age of women at first delivery is about 22 years. This indicator was rather stable over the decade (table A/3-2).

Table AI3-2: Average age of mothers at first birth (years), Armenia, 1990-98

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|-----|------|------|------|------|------|------|------|------|------|
| Age | 22.8 | 22.5 | 22.2 | 22.0 | 22.0 | 22.5 | 22.2 | 22.3 | 22.5 |

Source: Young People in Changing Societies, The MONEE Project, CEE/CIS/Baltics, UNICEF, Regional Monitoring Report, No. 7, 2000

In the 1997 reproductive health survey of 1,000 Armenian women, their first sexual intercourse was at 20.8 years of age (mean), coinciding with marriage. About 11 percent reported their first sexual intercourse before 18 years. The average maternal age at first delivery is approximately 22-23 years and occurs during their first year of marriage (table AI 3.3). Similar results were

obtained in the 2000 reproductive baseline with mean age at first intercourse of 19.8 years and 16% having intercourse prior to age 18.

Table AI 3-3: Age distribution (%) of women at first intercourse, marriage, and birth

| | <15 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 |
|-----------------------|-----|-------|-------|-------|-------|-------|-------|
| Age first intercourse | 0.2 | 41.4 | 48.6 | 7 | 1.8 | 1.2 | 0 |
| Age first marriage | 0.2 | 41.3 | 48.4 | 7.1 | 1.8 | 1.2 | 0 |
| Age first birth | 0 | 20 | 59 | 16 | 3.1 | 1.8 | 0.1 |

Source: Reproductive Health Survey Armenia, 1997 (N=1,000)

4. Disparities

No data.

5. Data Quality/Limitations

The National Center for AIDS Prevention reports there is a gross underestimation of HIV/AIDS prevalence in the country. Inadequate financing of the HIV/AIDS program has not permitted a large-scale national prevention and detection program. There are only a few testing centers and the lack of adequate laboratory resources for these centers makes HIV testing inaccessible to the public at large.¹ Testing is subject to availability of reagents and other required laboratory supplies, which have not been consistently available. Also, a lack of public awareness about HIV testing services limits the accessibility to people in Yerevan while leaving the rest of the country with no feasible access to HIV testing or materials.

Two HIV/AIDS prevention projects were approved in the State Budget for 1999 but not funded. They were intended to increase the level of public information, ensure donated blood is free from HIV, and to conduct research on distinctive features of the HIV epidemic in Armenia. Of the 95,000 laboratory procedures conducted from 1995-1999, blood donations constituted the majority of those tested. The number of tested individuals belonging to other groups at high-risk of HIV infection was reported to be insignificant.

The 1997 reproductive survey provided outstanding information on a delicate subject. However, one limitation of the description survey was the exclusion from the sample of adolescents and single females. The researchers excluded this group because they believed the social taboos of premarital sex in Armenia would lead to denial of information from the respondents. Expansion of the survey and the inclusion of single and adolescent females could provide additional information about sexual knowledge useful for targeting educational programs. Reports from the Ministry of Social Security indicate state allowances are paid to a significant portion of the population who claim to be single mothers.

In a study of 200 street prostitutes conducted between June through August 1998, the HIV seroprevalence was 7.5 percent as documented with Elisa testing⁴. There are 900 registered female sex workers in Yerevan, but the study projected there were in reality between 7,000 to 8,000. Independent studies regarding each of the vulnerable groups demonstrated higher than expected rates and added further doubt to the authenticity of reports stating only 124 persons in the country who are HIV positive. A limitation of the study was the restriction of the study to Yerevan and the small sample size.

6. Comments/Conclusions

There are many obstacles to providing education and prevention knowledge and detection programs in the country. Major barriers include a pervasive denial of the potential problem because of lack of public educational programs; the belief there is a cure for the disease; the relative low number of registered cases, and the paucity of funding for national programs. The National AIDS Center confirms these assertions, reporting there is a lack of coordinated efforts among existing structures, denial of the problem, and inadequate understanding among the population.

Although there are financial reasons and other difficulties for the development of national HIV/AIDS prevention and detection programs, there are also some positive structures in place and available resources: 1) National Center for AIDS Prevention; 2) law on the "Prevention of Diseases caused by Human Immunodeficiency Virus; 3) a number of international organizations, who are willing to assist with the problem (UNAIDS, UNDP, UNFPA, and USAID); 4) considerable public interest in a medicine called "Armenicum", whose preliminary results have indicated value as symptomatic treatment; and 5) the potential for television as an educational medium.

The cited reports and studies uniformly call for a national HIV/AIDS education and prevention program. The 1998 Situation Analysis on Children and Women noted there are many false ideas about infection transmission. Studies involving college students concluded there was a clear need for STD/HIV education among university students.⁶ The researchers of the 1997-1998 National Reproductive Survey reported the risk of spreading sexually transmitted diseases including HIV/AIDS is high, and knowledge about the topic is not sufficient in the general population.

Funding must be made available for expanding the availability of testing and the determination of more reliable statistics regarding the burden of HIV infection. Recommendations from the 1997 National AIDS Bulletin included the implementation of a national strategy, which included the distribution of condoms in STD clinics, universities, schools, antenatal clinics, prisons, and among those in the military. They noted commercial sex workers and travelers should have easy access to condom distribution.

According to information received from the National AIDS Center during December 2000, a national strategic plan to combat the AIDS epidemic has been prepared based upon the results of more recent information about the projected numbers of cases.⁷ The new plan would involve the government, public, international and business spheres. The proposed program is under discussion at the Ministry of Health.

Knowledge of Preventing HIV/AIDS: Unable to Assess [perceived as Substantially Unmet]

Knowledge of Misconceptions of HIV/AIDS: Unable to Assess [perceived as Substantially Unmet]

Knowledge of Mother to Child HIV Transmission: Unable to Assess [perceived as Substantially Unmet]

Attitude Towards People With HIV: Unable to Assess [perceived as Substantially Met]

Women Who Know Where to Receive HIV Test: Unable to Assess [perceived a Substantially Unmet]

Women Who Have Been Tested for HIV: Unable to Assess [perceived as Substantially Unmet]

Attitude Toward Condom Use: Partially Met

Adolescent Sexual Behavior: Clearly Met

Development of a National AIDS program: Program initiated; not yet collecting needed data

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4. Conclusions/Observations

During this past decade, Armenia has experienced tremendous disruptions to its economy and its society. The healthcare system has virtually collapsed due to lack of resources and modern organizational and management approaches to health care delivery. As such, indicators of the health and well-being of the population, once among the highest of the former Soviet Union and approaching those of western countries, have dramatically regressed during the 90s. In many cases, recent efforts by the government and support from international humanitarian organizations have stemmed these trends. Still, the decline in general health indicators, when taken as whole, paint an alarming picture of a people in crisis.

The family unit has born the brunt of these insults with decisions about healthcare, nutrition, and environment being made on a daily, near survival basis. The more sensitive indicators are beginning to show the long-term impact of the harsh living conditions and poor diet. These forces are beginning to degrade one of Armenia's most vital natural resources – its people

Given the realities of the Armenian context and the limited resources facing the central government systems, efforts to reinvigorate national systems must be balanced with community empowerment and development activities. The immediate needs facing communities, while sharing many common themes, are often quite specific, requiring local solutions. Furthermore, a number of facility-based national initiatives, such as breastfeeding promotion, may be seen as having achieved their maximum potential without reinforcement from community-based strategies. This is especially critical, as financial access to healthcare facilities and declining confidence in the system has drastically reduced usage of primary and preventive care facilities.

The data presented in this report highlight the existing strengths and weaknesses in the health and social service delivery systems as well as the ability to effectively monitor and report on these indicators.

The Strengths

The data show that vaccine-preventable illnesses are reasonably well controlled with high crude coverage rates. Improving the timely delivery of vaccines and improvements to the delivery system to safeguard the effectiveness of the vaccines that are delivered will strengthen the system. The education system is also another strength, but one beginning to show declines, especially in perceived quality. The high literacy and education rates have helped to mitigate many of the difficulties the Armenia society is facing, but the stresses are beginning to erode the system and threaten the well being of future generations.

The Weaknesses

The foundation of the family, the mother and child, are threatened by the lack of proper nutrition and preventive care. Indicators of nutritional status and access to and utilization of primary care clearly indicate a people in crisis. Consumption of food has declined as costs relative to income have increased. The food consumed often lacks required nutritive value and the indicators sensitive to this clear show a decline bordering on disaster. Similarly, use of preventive and

primary care services have significantly declined, indicating a lack of access, both financial and geographic, to quality services. The decline in early prenatal care is a harbinger of declines in other indicators measuring utilization and effectiveness of primary preventive care.

From the data summarized in this report, immediate improvements in the following sectors emerge as critical priorities:

- Maternal & Child nutrition (to include breastfeeding)
- Maternal & Child access to/utilization of antenatal and primary care
- Couples access to/education about reproductive health and family planning
- Institutionalized children and adults (health and rights)
- HIV/AIDS awareness and screening

The following systems need to be strengthened in order to maintain current high levels of performance:

- Vaccination system
- Basic Education (emphasis on quality; early developmental opportunities)
- Water and Sewer services (capital improvements)

In addition, infrastructure for more complete and routine monitoring and reporting on these indicators, or the subset identified as priority, needs to be developed. Efforts should focus on consolidating activities and developing uniform definitions in protocols across ministries and, where possible, in accord with generally accepted international definitions. This includes a critical need to accurately describe the size and demographic characteristics of the population.

Ideally, this report will be used to assist the Ministry of Health in setting priorities and targeting areas for development/support from international donor organizations and not just satisfy a reporting requirement: assessments not followed by programmatic and assurance activities are of little value. In addition, efforts in developing routine data collection and monitoring systems for these data, or the subsets identified as priority, will assist performance evaluation in the future.

At the dawn of the 21st Century, the future of the health and well being of the people of Armenia is at a crossroads. Hopefully, this report can assist national decision-makers in choosing an appropriate path for the betterment of the people.

5. Summary Table

The following table presents in summary fashion, the attainment of key indicators by goal. The presentation is intended to provide an overall sense of the data and trends in attainment of the year 2000 indicators. The data need to be viewed, however, in the context provided in the report. Care must be taken in abstracting data from the summary table without understanding the qualifications and limitations of the data as presented in the report itself.

| Goal | Indicator | Baseline | Target | Final | Comments |
|---|---|--|---|--|--|
| 1. Between 1990 and the year 2000, reduction of infant and under-five mortality rate by one-third or to 50 and 70 per 1000 live births respectively, whichever is less. | ▪ IMR- | 18.5 (official) 24.0 (WHO) | <i>12.3 (official)</i> <i>16.0 (WHO)</i> | <i>14.3</i> | Partially met An estimated 21.4% proportional reduction |
| | ▪ U5MR - | 23.8 29.3 (WHO) | <i>15.9 (official)</i> <i>19.6 (WHO)</i> | <i>18.3</i> | Partially met An 24.7% proportional reduction |
| 2. Between 1990 and the year 2000, reduction of maternal mortality rate by half | ▪ Maternal Mortality | 32.6 (MOS) 42.0 (MOH) (Average rate for 1989-91) | <i>16.3 (MOS)</i> <i>21.0 (MOH)</i> | <i>27.7 (MOS)</i> <i>28.3 (MOH)</i> (Average rate for 1998-99) | Substantially unmet |
| 3. Between 1990 and the year 2000, reduction of severe and moderate malnutrition among under-five children by half | Proportion of under-fives who fall below minus 2 standard deviations from median; NCHS/WHO reference population | 1993 Yerevan | | 1998 Armenia | <i>Note: preliminary indications from a fall 2000 assessment indicate a significantly worsening situation. These data are best reviewed subsequent to the release of that report</i> |
| | ▪ <u>Underweight prevalence:</u> weight for age | 2.3% | Maximum of 3-4% | 3.91% | Partially met Strong regional variations |
| | ▪ <u>Stunting prevalence:</u> height for age | 8.0% | | 4.8% Yerevan 12.2% | Clearly unmet |
| | ▪ <u>Wasting prevalence:</u> weight for height | 1.2% | | 4.1% | Partially met Strong regional variations |
| 4. Universal access to safe drinking water | ▪ Use of improved drinking water sources: | | 100% | 1998 81-86% | Access to water: Substantially met Safety of water: Partially met |
| 5. Universal access to sanitary means of excreta disposal | ▪ Use of improved sanitary means of excreta disposal | | | 1998 98% | 1998 data – toilet within 50M Partially met Strong urban/rural differences |

| Goal | Indicator | Baseline | Target | Final | Comments |
|---|--|------------------------|--------|--------------------|------------------------------------|
| 6. Universal access to basic education and achievement of primary education by at least 80 percent of primary school-age children through formal schooling or non-formal education of comparable learning standard, with emphasis on reducing the current disparities between boys and girls. | ▪ <u>Children reaching grade 5:</u> | 100% | 100% | >99% | Clearly met |
| | ▪ <u>Net primary school enrollment ratio:</u> | (gross, 7-14) 97.8% | 100% | 95.0% | Substantially met But declining |
| | ▪ <u>Net primary school attendance rate:</u> proportion of children of | | | 92% (estimated) | Substantially met But declining |
| 7. Reduction of the adult illiteracy rate (the appropriate age group to be determined in each country) to at least half its 1990 level, with emphasis on female literacy | ▪ Literacy rate: general | 1990 96.3% | 98.1% | 1998 99.8% | Clearly met |
| | ▪ Literacy rate: women | 95.4% | 97.7% | 99.8% | Clearly met |
| 8. Provide improved protection of children in especially difficult circumstances and tackle the root causes leading to such situations | ▪ Total child disability rate: proportion of children aged less than 15 years with some reported physical or mental disability | 1997 0.67% | | 1999 0.74-1.3% | Unable to assess |

| Goal | Indicator | Baseline | Target | Final | Comments |
|---|--|---------------------------|--------|----------------------------|---|
| 9. Special attention to the health and nutrition of the female child and to pregnant and lactating women | ▪ <u>Under-five mortality rate--</u> female/male: | 1990 | | 1999 17.3% / 20.8% | Clearly met No gender disparities |
| | ▪ <u>(under 1 mortality)</u> female/male: | 16.10/20.50 | | 10.3/17.9 | Clearly met No gender disparities |
| | ▪ <u>Underweight prevalence</u> female/male: | | | 1998 3.90%/3.91% | Clearly met No gender disparities |
| | ▪ <u>Antenatal care</u> | - | | 97.9 | Clearly Met |
| | ▪ <u>(Early Antenatal Care)</u> | 72.5 | | 1999 48.8 | Partially met Significant decline |
| | ▪ <u>HIV prevalence:</u> Female/male Age | | | 34/101 81% 20-39 | Unable to assess Passive case finding |
| | ▪ <u>Anemia:</u> Women Pregnant Women | - 1.3% | | 13.1% 15.3% | Clearly unmet Clearly unmet, deteriorating |
| 10. Access by all couples to information and services to prevent pregnancies that are too early, too closely spaced, too late or too many | ▪ <u>Contraceptive prevalence:</u> Total (modern) | 1991, Yerevan 56%(25%) | | 1997, National 60%(22%) | Substantially unmet |
| | ▪ <u>Fertility rate for women 15-19:</u> | 69.1 | | 29.8 | Unable to assess |
| | ▪ <u>Total fertility rate:</u> | 2.62 | | 1.19 | Unable to assess <i>Note: fertility is largely regulated through traditional methods supported by abortion</i> |

| Goal | Indicator | Baseline | Target | Final | Comments |
|--|--|---------------|--------------------|----------------------|--|
| 11. Access by all pregnant women to pre-natal care, trained attendants during childbirth and referral facilities for high-risk pregnancies and obstetric emergencies | ▪ <u>Antenatal care</u> | 1990 - | | 1998/9 97.9 | Clearly met |
| | ▪ (Early Antenatal Care) | 72.5% | | 48.8% | Partially met Significant decline |
| | ▪ <u>Childbirth care:</u> | 99.7% | | 97.3% | Clearly Met Slight decline |
| | ▪ <u>Obstetric care:</u> Facilities/comprehensive Facilities/basic | | | 1998 7.4 101.2 | Clearly met, exceed norm Clearly met, far exceeds norms |
| | OB/Gyn per 10 000 OB beds per 10 000 | 4.3 36.3 | | 4.4 23.2 | Clearly met Clearly met, declining, but still exceeding norms |
| 12. Reduction of the low birth weight (less than 2.5 kg) rate to less than 10 % | ▪ Proportion of LBW | 1990 6.54% | < 10% | 1999 8.53% | Clearly met Potentially deteriorating situation |
| 13. Reduction of iron deficiency anemia in women by one-third of the 1990 levels | ▪ <u>Anemia:</u> Women | 1990 - | | 1999 13.1% | Clearly unmet |
| | ▪ Pregnant Women | 1.3% | | 15.3% | Clearly unmet Deteriorating |
| 14. Virtual elimination of iodine deficiency disorders | ▪ Iodized salt consumption: | | 100% | 1998 70% | Partially met |
| | ▪ Low urinary iodine: | | ~ 0% | 31.7% | Substantially unmet |
| 15. Virtual elimination of vitamin A deficiency and its consequences, including blindness | ▪ <u>Children receiving Vitamin A supplements:</u> proportion of children 6- | | N/A | | |
| | ▪ <u>Mothers receiving Vit A supplements:</u> | | N/A | | |
| | ▪ <u>Low Vit A:</u> | | Maintain situation | < 0.6% | Clearly Met |

| Goal | Indicator | Baseline | Target | Final | Comments |
|---|--|---------------------------|--------|---|--|
| 16. Empowerment of all women to breast-feed their children exclusively for 4-6 months and to continue breast feeding, with complementary food, well into the second year. | ▪ <u>Exclusive breast feeding rate:</u> | 1993 0.7% (Yerevan) | | 1997 20.8%/21.0% (Yerevan/ National) | Partially met |
| | ▪ <u>(Full breast feeding)</u> | 1990 57.0% (Soviet) | | 1999 54.0% (WHO) | |
| | ▪ <u>Timely complementary feeding rate:</u> | 1993 22% (Yerevan) | | 1997 34% (Yerevan) | Partially met |
| | ▪ <u>Continued breast feeding rate (> 12 months):</u> | 1995 9.2% | | 1999 21.2% | Partially met |
| | ▪ <u>Number of baby-friendly facilities:</u> | 1990 0 | | 2000 2 | Substantially unmet |
| 17. Growth promotion and its regular monitoring to be institutionalized in all countries by the end of the 1990s. | No specific indicator (Coverage by Primary Care Services) | | | 1998 ~100% 9.7/14 visits made | Substantially met Geographic and financial access of increasing concern |
| | (Compliance with growth monitoring standards) | | | 60% compliance | Partially met Apparent geographic variation |
| 18. Dissemination of knowledge and supporting services to increase food production to ensure household food security | No specific indicator | 1988 | | 1998 | |
| | (actual average consumption vs. minimal subsistence budget) | 147% | | 38% | Clearly Unmet in terms of food security |
| | (Actual consumption -Expenditures/month -\$ -Calories/day) | \$81 2181kcal | | \$25 1395-2100kcal | Clearly Unmet in terms of food security Clearly Unmet in terms of food security |
| 19. Global eradication of poliomyelitis by the year 2000 | ▪ Polio cases: | 1990 12 | 0 | 1999 0 | Clearly met Armenia certified Polio free, fall 2000 |

| Goal | Indicator | Baseline | Target | Final | Comments |
|---|---|-----------------------|----------------|-----------------------|--------------------------------------|
| 20. Elimination of neonatal tetanus by 1995 | <ul style="list-style-type: none"> ▪ Neonatal tetanus cases: | 1990 0 | 0 | 0 | Clearly met |
| 21. Reduction by 95 percent in measles deaths and reduction by 90 percent of measles cases compared to pre-immunization levels by 1995, as a major step to the global eradication of measles in the longer run | <u>Under-five deaths from measles:</u> | 1990 0 | 0 | 1999 0 | Clearly met |
| | <u>Measles cases:</u> | >>10 000 | < 1000 by 1995 | 1995 187 | Clearly met |
| 22. Maintenance of a high level of immunization coverage (at least 90% of children under one year by the year 2000) against diphtheria, pertussis, tetanus, measles, poliomyelitis, tuberculosis and against tetanus for women of child-bearing age | <ul style="list-style-type: none"> ▪ <u>DPT immunization coverage:</u> | 1990 80.4% | >90% | 1999 89.6% | Substantially met (not timely) |
| | <ul style="list-style-type: none"> ▪ <u>Measles immunization coverage</u> | 95.2% | >90% | 91.1% | Clearly met (not timely) |
| | <ul style="list-style-type: none"> ▪ <u>Polio immunization:</u> | 91.9% | >90% | 96.7% | Clearly met |
| | <ul style="list-style-type: none"> ▪ <u>Tuberculosis immunization coverage</u> | 92.3% | >90% | 93.6% | Substantially met |
| | <ul style="list-style-type: none"> ▪ <u>Children protected against neonatal tetanus:</u> | data is not available | >90% | data is not available | Clearly met (no cases for >20 years) |

| Goal | Indicator | Baseline | Target | Final | Comments |
|--|--|---------------------------|--------------------|----------------------------|---|
| 23. Reduction by 50% in the deaths due to diarrhea in children under the age of 5-years and 25% reduction in the diarrhea incidence rate | ▪ <u>Under five deaths from diarrhea:</u> | 1990 N/A | N/A | 1999 N/A | Clearly met Unable to assess Data is incomplete; significant underreporting Partially met Partially met |
| | ▪ <u>(Diarrhea-specific IMR)</u> | 2.2 | 1.1 | 1.1 | |
| | ▪ <u>Diarrhea cases:</u> average annual number | | | 1998 <0.2% | |
| | ▪ <u>ORS use</u> | | | 1993/1997 50%/33% | |
| | ▪ <u>Home management of diarrhea:</u> | | | 1997 30% | |
| 24. Reduction by one-third in the deaths due to acute respiratory infections in children under 5-years | ▪ <u>Under-five deaths from ARI:</u> | 1990 6.6 | | 1999 4.3 | Clearly met Disconcerting regional variations Clearly met Disconcerting regional variations; value based on regression estimate Partially met |
| | ▪ <u>Infant deaths from ARI</u> | 4.2 | 2.8 | 3.2 | |
| | ▪ <u>Care seeking for ARI</u> | | | 1997 49% | |
| 25. Elimination of guinea-worm (dracunculiasis) by the year 2000 | ▪ <u>Dracunculiasis cases:</u> | 0 | 0 | 0 | Armenia is certified guinea-worm free by WHO |
| 26. Expansion of early childhood development activities, including appropriate low-cost family and community-based interventions | ▪ <u>Preschool development:</u> | 1988/89 44.8% | | 1998/99 21.2% | Clearly unmet |
| | ▪ <u>Underweight prevalence:</u> proportion of under-fives | 1996 2.3% (Yerevan) | Maximum of 3-4% | 1998 3.9% (national) | Partially met Significant regional variations |

| Goal | Indicator | Baseline | Target | Final | Comments |
|---|--|---------------|--------|--|---|
| 27. Increased acquisition by individuals and families of knowledge, skills and values required for better living, made available through educational channels, including the mass media, other forms of modern and traditional communication and social action, with effectiveness measures | No specific indicator | | | | Partially met Increasing efforts/attempts noted; media are not being used to full advantage |
| AI 1 Additional indicators for monitoring children's rights: | <ul style="list-style-type: none"> ▪ <u>Birth registration:</u> ▪ <u>Children's living arrangements:</u> ▪ <u>Orphans in household:</u> ▪ <u>Child labor</u> | 1990 99.6% | | 1999 99% - - - | Clearly met Unable to assess Anecdotally – substantially met Unable to assess Anecdotally – Substantially unmet Unable to assess Anecdotal regional and seasonal variations |

| Goal | Indicator | Baseline | Target | Final | Comments |
|--|--|----------|--------|--|--|
| AI 2. Additional indicators for monitoring the Integrated Management of Child Illness (IMCI) and malaria | <ul style="list-style-type: none"> ▪ <u>Home management of illness:</u> ▪ <u>Care seeking knowledge:</u> ▪ <u>Bednets:</u> ▪ <u>Malaria treatment:</u> | | | 1997 30% (diarrhea) 44% (diarrhea) ~0% ~0% | Partially met Partially met Unable to assess Unable to assess Note: IMCI program just now being launched; Malaria control program initiated late in decade; developing action plan |

| Goal | Indicator | Baseline | Target | Final | Comments |
|--|---|------------|--------|--------------------|---|
| AI 3. Indicators for monitoring HIV/AIDS | <ul style="list-style-type: none"> ▪ <u>Knowledge of preventing HIV/AIDS:</u> | 22.8 years | | | Unable to assess Perceived as low/substantially unmet |
| | <ul style="list-style-type: none"> ▪ <u>Knowledge of misconceptions of HIV/AIDS:</u> | | | | Unable to assess Perceived as low/substantially unmet |
| | <ul style="list-style-type: none"> ▪ <u>Knowledge of mother to child transmission of HIV:</u> | | | | Unable to assess Perceived as low/substantially unmet |
| | <ul style="list-style-type: none"> ▪ <u>Attitude to people with HIV/AIDS</u> | | | | Unable to assess Perceived as substantially met |
| | <ul style="list-style-type: none"> ▪ <u>Women who know where to be tested for HIV:</u> | | | | Unable to assess Perceived as low/substantially unmet |
| | <ul style="list-style-type: none"> ▪ <u>Women who have been tested for HIV:</u> | | | | Unable to assess Perceived as low/substantially unmet |
| | <ul style="list-style-type: none"> ▪ <u>Attitude toward condom use:</u> | | | 35-46% ever use | Partially met |
| | <ul style="list-style-type: none"> ▪ <u>Adolescent sexual behavior:</u> Median age at first pregnancy ▪ (Development of National AIDS program) | | | 1997 22.5 years | Clearly met Usually coincident with 1 st year of marriage <i>Note: National AIDS Program initiated; not yet collecting needed data</i> |

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