

## CONTENTS

<b>4.15 COMMUNITY HEALTH .....</b>	<b>4.15.1</b>
4.15.1 Health Infrastructure .....	4.15.2
4.15.2 Health Profile .....	4.15.7

## TABLES

Table 4.15.1: Study Area Health Facility Characteristics .....	4.15.5
Table 4.15.2: Environmental Health Areas Baseline Health Description.....	4.15.8

## FIGURES

Figure 4.15.1: Estimated DALYs ('000) by Cause, Estimated for 2004 <sup>1</sup> .....	4.15.2
Figure 4.15.2: Proportional mortality (% of total deaths, all ages) by Cause, estimates for 2008.	4.15.2

## APPENDICES

Appendix 4.15.1 Rapid Health Impact Assessment (June 2012)	
--	--



#### 4.15 Community Health

The Armenian health system is in a process of transition from the centralised Soviet model of health care, with a major focus on hospitalisation, to the development of a state operated network of economically independent enterprises.

Life expectancy at birth in Armenia is 67/75 years<sup>1</sup> for males/females respectively (as recorded in 2012), with women living longer than men. The country performs comparatively well in standard health indicators compared to other Central Asian countries and has made progress in achieving the Millennium Development Goals targets set for 2015. In 2010, the under-five mortality rate was reported at 16 per 1000 live births and infant mortality rate was 13 per 1000 births, compared to 1990 figures of 49 and 42 per 1000 live births respectively<sup>2,3</sup>.

The major health concerns in Armenia are associated with non-communicable diseases (NCDs). Disability adjusted life years (DALYs) provide an indicator of the overall disease burden of a country, and the DALYs for Armenia (highlighted in Figure 4.15.1) portray the contribution of cardiovascular disease, cancer and chronic lung disease to the national health burden.

Estimates for 2008 showed that NCDs accounted for about 90% of all deaths in Armenia, 46% being from cardiovascular disease (CVD)<sup>4</sup>, see Figure 4.15.2. In general, the burden of disease in the study area follows a similar pattern with CVD, cancers and diabetes listed as the most common health concerns.

---

<sup>1</sup> <http://www.who.int/countries/arm/en/> accessed June 20<sup>th</sup>, 2014

<sup>2</sup> WHO, (2004), DALYs for Armenia, available from  
[http://www.who.int/quantifying\\_ehimpacts/national/countryprofile/armenia.pdf](http://www.who.int/quantifying_ehimpacts/national/countryprofile/armenia.pdf)

<sup>3</sup> WHO, Non-communicable Diseases Country Profiles: Armenia. 2011.

<sup>4</sup> *ibid.* 3, p 4.15.2

Environmental burden of disease (preliminary), per year			
Estimates based on Comparative Risk Assessment, evidence synthesis and expert evaluation for regional exposure and WHO country health statistics 2004			
DALYs/1000 cap	(World - lowest: 13, highest: 289)		<b>32</b>
Deaths			<b>7 500</b>
% of total burden			<b>17%</b>
Environmental burden by disease category [DALYs/1000 capita], per year			
Disease group	World's lowest country rate	Country rate	World's highest country rate
Diarrhoea	0.2	2.2	107
Respiratory infections	0.1	1.1	71
Malaria	0.0	0.0	34
Other vector-borne diseases	0.0	-	4.9
Lung cancer	0.0	1.4	2.6
Other cancers	0.3	3.1	4.1
Neuropsychiatric disorders	1.4	2.0	3.0
Cardiovascular disease	1.4	8.9	14
COPD	0.0	1.4	4.6
Asthma	0.3	0.8	2.8
Musculoskeletal diseases	0.5	0.9	1.5
Road traffic injuries	0.3	1.2	15
Other unintentional injuries	0.6	4.1	30
Intentional injuries	0.0	0.3	7.5

Figure 4.15.1: Estimated DALYs ('000) by Cause, Estimated for 2004<sup>1</sup>

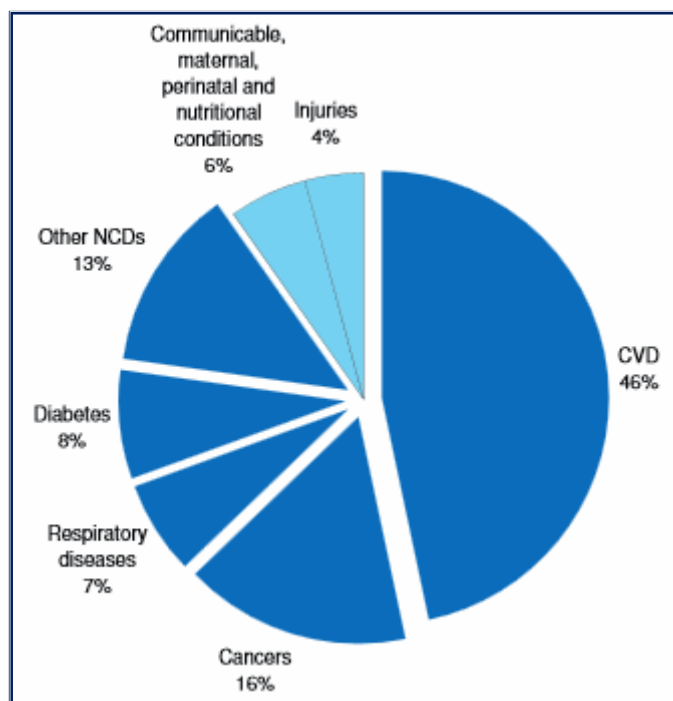


Figure 4.15.2: Proportional mortality (% of total deaths, all ages) by Cause, estimates for 2008

#### 4.15.1 Health Infrastructure

The National Health Service and general health infrastructure faced numerous challenges after the collapse of the former Soviet Union. The health system was forced to reform from a centrally managed service that was free of charge with a strong focus on secondary care, to a

network of state controlled but economically independent entities. However, quality of health care remains a challenge with:

- i) The management and allocation of health budgets;
- ii) Limited health services and coverage in the rural areas; and
- iii) Poor access to health care for the poor in society (often in rural areas).

Funding for health care and ability for poor or vulnerable groups to afford the current co-pay systems limits access to care in certain sectors of society. This is in spite of a public funded subsidy for vulnerable groups as part of the Basic Benefits Package, with the limitation on affordability of medications, especially those required for chronic diseases, which as mentioned contribute significantly to the overall national burden of disease. A 2011 World Health Organisation (WHO) report found that 50% of total health expenditure was privately funded, with 84% of that coming directly out of the consumer's pocket.

The current Armenian health system is divided into three levels:

- **Primary health care:** through services running out of polyclinics and health posts or so-called outpatient services located in small villages and supervised by a doctor and / or a nurse. Vulnerable groups are funded from the Basic Benefits Package subsidy which supports a list of services, but shortage of medications often require that users are forced to procure medications privately, with these often being unaffordable in the long term;
- **Secondary health care:** health posts and regional / municipal hospitals providing secondary care on a co-payment system (health expenses paid between the Government and the patient). Hospitals are generally large facilities with a vast number of beds, but poor bed occupancy rates limit the effective utilisation of many facilities. Thus, the number of beds per capita population has fallen dramatically in the last 20 years; and
- **Tertiary health care:** specialised hospitals that also operate on a co-payment system.

The study area is well resourced in terms of available health centres and hospitals and there is a functioning referral and ambulance system in place. Details of the existing facilities are provided in Table 4.15.1, which highlights the structural and operational challenges faced by a number of the facilities.

One of the key limitations to the functionality of health facilities in the study area is the limited availability of medications in the public health facilities, which is further compounded by the lack of local private pharmacies.

**Table 4.15.1: Study Area Health Facility Characteristics**

Location	Type of Facility	Catchment Area	Services / Facilities	In-patients Capacity	Staff	Challenges
Vayk	State-owned Regional Referral Hospital	Saravan, Gndevaz, Jermuk Vayk city	Ambulance service, surgery, outpatients, inpatients capacity, maternity, orthopaedics, emergency care, laboratory	180 beds	40 medical staff	<ul style="list-style-type: none"> <li>Limited financial resources with co-pay system (government subsidy, covering certain % for each medical condition) for socially vulnerable (disabled, special groups like veterans, pensioners, etc.)</li> <li>Lack of modern and updated diagnostics in contrast with the scope of the facility in providing adequate secondary and referral care</li> <li>Referral hospital for a large population (40,000 people)</li> </ul>
Jermuk	State-owned General Hospital	Jermuk, Kechut	Ambulance service, surgery that is not functional for serious cases, outpatients, inpatients capacity, maternity, orthopaedics, emergency care, and laboratory. For serious cases the patients are taken to Vayk or Yerevan	25 beds	24 medical staff	<ul style="list-style-type: none"> <li>Lack of trained staff to operate modern equipment</li> <li>Top-down approach in health policy implementation as directed by the Ministry of Health (MoH)</li> </ul>
Gorayk	Health Centre	1 village	Basic health care, first aid, health education, monitoring of pregnancies and chronic diseases, family planning, vaccinations, home visits	0 beds	11 medical staff (2 nurses permanently at the health centre), one visiting medical doctor	<ul style="list-style-type: none"> <li>Structural issues (humidity damaged walls) and lack of heating and hot water in facility (currently under repair by Lydian)</li> <li>Lack of basic diagnostic medical equipment</li> <li>No inpatient capacity</li> <li>A little equipment provided by Lydian (centrifuge, etc.)</li> </ul>

**Table 4.15.1: Study Area Health Facility Characteristics**

Location	Type of Facility	Catchment Area	Services / Facilities	In-patients Capacity	Staff	Challenges
<b>Saravan</b>	Health Post	1 village	Basic health care, first aid, health education, monitoring of pregnancies and chronic diseases, family planning, vaccinations, home visits	0 beds	1 nurse	<ul style="list-style-type: none"> <li>• Irregular supply of medication and consumables</li> <li>• Lack of heating and running water</li> <li>• No sanitation facilities</li> <li>• Limited support of supply chain provided by the state</li> </ul>
<b>Gndevaz</b>	Health Post	1 village	Basic health care, first aid, health education, monitoring of pregnancies and chronic diseases, family planning, vaccinations, home visits	0 beds	1 nurse	<ul style="list-style-type: none"> <li>• Structural challenges with flooring</li> <li>• No sanitation facilities, no heating</li> <li>• Limited support of supply chain provided by the state</li> </ul>



#### **4.15.2 Health Profile**

A detailed health baseline study was completed by SHAPE Consulting for the Amulsar Project and is included as Appendix 4.15.1. The health baseline was assessed in line with the IFC Introduction to Health Impact Assessments as good international industry practice, and addresses each of the twelve environmental health areas (EHAs) in turn as described in Table 4.15.2.

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
EHA# 1 – Communicable Diseases linked to the living environment	<p><u>Overcrowding</u>: Average household size is 4 members. Overcrowding is not a national concern.</p>	<p>On average between five and seven people live in each household, although overcrowding does not appear to be an issue. However, it was recognised that many households do not have the means to live separately with a situation of children marrying and living with their parents, with a future potential risk for overcrowding. In Jermuk, 68% of households had more than one sub-family unit per household.</p> <p>Wood or dried manure was used for heating in some communities, which may increase the risk for acute respiratory infections, with children identified as an especially vulnerable group.</p>
	<p><u>Tuberculosis (TB)</u>: Central Asia and CIS are the second most important area globally for TB incidence or increasing trends of the disease.</p> <p>Armenia is not classified as a high burden TB country, with prevalence of 79/100,000 in 2012 (and incidence of 52/100,000 in the same year). This compares to a prevalence of 114/100,000 and an incidence of 79/100,000 in 2010, highlighting improved TB indicators.</p> <p>Armenia has high levels of multidrug resistant (MDR) TB. In 2012, 9.4% of new TB cases showed signs of MDR-TB<sup>5,6</sup>. This is the same rate as reported from a 2008 study, probably because of inadequate case detection. However, there were reports that trends were increasing.</p>	<p>Vayk Hospital had no cases of TB in 2011, however suspected cases are typically referred to Abovyan TB Centre (north of Yerevan) where diagnostic and treatment facilities are available.</p> <p>No TB cases have been reported in health posts and centres in the study area villages, with the exception of Jermuk Hospital that referred 20 cases in the period from 2010-11. All the case from Jermuk were suspected to be imported cases from other areas, originating in people that have recently returned from military service or were temporary labour migrants.</p> <p>These findings may reflect inadequate diagnostic services locally. Importantly, of the 20 cases detected locally, nine were reported with MDR-TB.</p>

<sup>5</sup> WHO, *Global Tuberculosis Report 2013*. 2013.

<sup>6</sup> WHO. *Armenia Tuberculosis Profile*. 2012 [cited 2014/ 05/07]; Available from: [https://extranet.who.int/sree/Reports?op=Replet&name=/WHO\\_HQ\\_Reports/G2/PROD/EXT/TBCountryProfile&ISO2=AM&outtype=html](https://extranet.who.int/sree/Reports?op=Replet&name=/WHO_HQ_Reports/G2/PROD/EXT/TBCountryProfile&ISO2=AM&outtype=html).

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Acute Respiratory Infections (ARIs)</u>: In 2010, it was estimated that 11% of all deaths in children under five were due to pneumonia<sup>7</sup>, with 5% of respondents in the 2010 Armenia demographic and health survey (ADHS) reporting signs of an ARI in the two weeks preceding the survey<sup>8</sup>. A 2008 report estimated that 17% of all deaths in children under 5 were due to pneumonia.</p>	<p>Only 1.2% of children under five years in Vayots Dzor <i>Marz</i> and none (0.0%) in Syunik <i>Marz</i> had signs of an ARI in the two weeks preceding the 2010 ADHS.</p> <p>These statistics are borne out from information received from key informants from the local health facilities that did not consider respiratory infections to be a serious health issue in the study area.</p> <p>Respiratory infections are recorded in the routine health management information system and between June and November 2011, ARIs accounted for approximately 15% of cases at Gorayk Health Centre, and 4.6% and 3% of patient diagnoses at Gndevaz and Saravan respectively. However, it was reported that the population tends to self-medicate or neglect ARIs as full treatment courses were rarely provided by the local health service. Case-loads were reported to increase in winter.</p>
	<p><u>Measles</u>: Vaccination coverage for measles is good in Armenia, with 97% of children under one year of age immunised against measles in 2012<sup>9</sup>. In 2010, this figure was 94%, nationally.</p> <p>Three measles cases were reported nationally in 2013, but a measles epidemic is currently occurring throughout Eastern Europe including Ukraine, Georgia, Britain, and France and it is understood that cases have recently been notified in Armenia.</p>	<p>No cases of measles were reported locally.</p>

<sup>7</sup> WHO. *Armenia Health Profile*. 2013 [cited 2014/ 05/08]; Available from: <http://www.who.int/gho/countries/arm.pdf?ua=1>.

<sup>8</sup> National Statistical Service [Republic of Armenia], Ministry of Health [Republic of Armenia], and ICF International, *Armenia Demographic and Health Survey 2010*. 2012.

<sup>9</sup> UNICEF. *Armenia: Statistics*. 2013 [cited 2014/ 05/07]; Available from: [http://www.unicef.org/infobycountry/armenia\\_statistics.html](http://www.unicef.org/infobycountry/armenia_statistics.html).

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Meningitis</u>: Vaccination against meningitis is part of the national expanded programme of immunization (EPI).</p> <p>The country reported five cases of meningitis in 2010.</p>	<p>No cases were reported locally, recognising the local limitations in diagnostic services.</p>
EHA# 2 – Vector related diseases	<p><u>Malaria</u>: Until the 1950’s, malaria was endemic in Armenia. Malaria was eradicated by 1963, but re-emerged in the 1990’s with Armenia only being granted malaria free status again in October 2011.</p>	<p>Malaria is currently not present in the study area, and the elevation and climate of the study area make it unlikely that it could be introduced.</p>
	<p><u>Tick-borne encephalitis</u>: Unlikely to occur commonly in Armenia.</p>	<p>The elevation of the study area and lack of forested areas makes it unlikely that these diseases would exist in the study area.</p>
	<p><u>Borreliosis/ Lyme Disease</u>: No data available.</p>	<p>No data on these conditions locally, however not expected to be significant due to the absence of forest in the study area.</p>
EHA# 3 – Soil, water and waste related diseases	<p><u>Potable water and sanitation situation</u>:                      According to the 2010 ADHS, access to an improved water source in Armenia was at 95%, with 9 in 10 households having their drinking water piped directly into their dwelling, yard, or plot<sup>10</sup>. In 2011, coverage had improved to almost the entire population (100% in urban and 98% in rural areas)<sup>11</sup>. This was an improvement from 2005, where 93% of the population has access to improved water sources.</p> <p>Most households in Armenia use improved sanitation facilities that are not shared with another household.</p>	<p>All rural communities have good access to piped drinking water; however, the quality of piped water in Gorayk and Saravan does not meet international drinking water standards (Section 4.8).</p> <p>In the study area, ventilated improved pit (VIP) latrines are most commonly used.</p> <p>The waste water treatment plant in Jermuk was upgraded and opened in December 2014. With a design horizon of 2032, it has a capacity of 22,000 people, This far exceeds the current population of Jermuk. Sewerage systems in the rural villages are non-existent.</p>

<sup>10</sup> *ibid.* 7

<sup>11</sup> WHO/UNICEF, *Progress on Sanitation and Drinking Water: 2013 Update*. 2013.

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p>In 2010, 79% of the country’s population (97% in urban and 49% in rural areas) used improved (not shared) sanitation facilities<sup>12</sup>. In 2011, access to improved sanitation was estimated at 90% (96% in urban and 81% in rural areas)<sup>13</sup>. This was an improvement from 2005, where 47% of the population had access to improved sanitation facilities.</p>	<p>Prior to the project, domestic waste collection was limited. Lydian now provides a collection service to support the management of this environmental health risk.</p> <p>Damp is common in buildings due to poor construction and high levels of humidity and a high water table in the rural communities. Elevated radon levels exist in a number of houses within Gorayk but this is discussed in more detail in the radiation section as part of the naturally occurring radiation material present in the study area.</p> <p>The environmental hygiene situation in Jermuk is better than the rural communities, with 99% of the population reporting having access to an improved drinking water supply and domestic waste removal. However, the quality of drinking water was a community concern in Jermuk and Kechut (although in a lower proportion in the latter).</p>
	<p><u>Diarrhoeal diseases</u>: Represents 2.2% of the Armenian DALYs. In 2010, 9% of children surveyed in the ADHS had experienced signs of diarrhoea in the two weeks preceding the survey<sup>14</sup>.</p>	<p>About 7.5% of children under five years in Vayots Dzor and none (0.0%) in Syunik <i>Marzes</i> had signs of diarrhoeal disease in the two weeks preceding the 2010 ADHS<sup>15</sup>.</p> <p>Key informant interviews indicate that diarrhoeal or gastro-intestinal diseases are not a major challenge in the study area. However, cases are more common in summer and spring.</p>

<sup>12</sup> *ibid.* 7

<sup>13</sup> *ibid.* 12

<sup>14</sup> *ibid.* 7

<sup>15</sup> *ibid.*

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
EHA# 3 – Soil, water and waste related diseases	<p><u>Cholera</u>: No epidemics have been recorded nationally since 1998.</p>	<p>Cases of STH are rarely reported in the study area, and de-worming campaigns are routinely conducted twice per year, free of charge for children up to 12 years of age.</p> <p>No data available on this disease in the study area; however, it is expected that due to the prevailing sanitation situation, communities are likely to have been exposed in childhood and a portion of the community will now have antibodies and thus immunity to the condition.</p>
	<p><u>Soil transmitted helminthiasis (STH)</u>: 4% of the Armenian population were reported to suffer from <i>ascaris</i> infections, 1% of <i>trichuria</i> and 26% from some form of <i>enterobacter</i> infections.</p>	
	<p><u>Hepatitis A</u>: Not included in the national EPI schedule. No statistics are available nationally.</p>	
EHA# 4 – Sexually-transmitted infections, including HIV/AIDS	<p><u>HIV/AIDS</u>: HIV prevalence remains low in Armenia (0.12% amongst adults aged 15-49 years), although the trend has been increasing in the past decade. In 2008, it was estimated that just over 2,200 people were HIV positive nationally.</p> <p>In 2010, the country registered 248 new cases of HIV infection. Men account for about two-thirds of the registered HIV cases and the age group most affected is 25-39 years<sup>16</sup>.</p> <p>Knowledge of HIV/AIDS is reported to be high, with 96% of the population (93% in rural and 98% in urban areas) reporting to have heard of HIV/AIDS, according to findings from the 2010 ADHS. However, HIV prevention knowledge has remained essentially unchanged since 2005. About 69% of women and 80% of men know that the risk of getting HIV can be reduced by using condoms and</p>	<p>In 2005, only 70% of men from Syunik Marz reported knowledge of HIV/AIDS, but this had increased to 91% by 2010. The level of knowledge of HIV/AIDS in Vayots Dzor Marz has decreased in recent years and in 2010 was found to be lower than the national average (86% for men and 88% for women).</p> <p>HIV screening is provided at the Vayk Hospital and screening is mandatory for all pregnant women. No cases have been reported in the past year. No HIV screening services are available in health centres in the study area, including Jermuk.</p> <p>There are five patients living with HIV being followed up at Jermuk hospital, all of whom were apparently infected while working as migrant labour in Russia.</p>

<sup>16</sup> *ibid.* 14  
 ZT520088  
 May 2016

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p>limiting sex to one faithful, uninfected partner<sup>17</sup>. HIV related knowledge amongst groups at high risk (IV drug users, sex workers and men who have sex with men) remains limited, with only 54% of sex workers reported as having adequate knowledge related to HIV prevention methods.</p> <p>Many Armenians still have misconceptions about HIV/AIDS<sup>18</sup>. Stigma against HIV-positive people is reported to be high in the region. The proximity of Armenia to Russia and Ukraine poses an additional risk as these countries have the highest HIV prevalence in the sub-region.</p> <p>In the 2010 ADHS, 15% of men age 15-49 reported to have had two or more sexual partners in the 12 months preceding the survey. Almost three-quarters of these men reported use of a condom during their last sexual intercourse. Men reported an average of almost six sexual partners in their lifetime.</p> <p>The national coverage for voluntary HIV testing is generally low. In 2010, only 9% of women and 2% of men reported that they have ever been tested for HIV and received the results.</p> <p>For people seeking treatment, anti-retroviral therapy (ART) is only available in Yerevan.</p>	<p>HIV and sexual practices were discussed in women’s focus group discussions (FGD) in the study area with the following key findings:</p> <ul style="list-style-type: none"> <li>• Local knowledge is good and women know how to protect themselves;</li> <li>• Stigma is low as the local community are well educated on this topic;</li> <li>• Cases do not originate locally and are generally limited to returning migrant workers; and</li> <li>• Commercial or forms of transactional sex work were described as being “very rare” in the study area (including Jermuk).</li> </ul>

<sup>17</sup> ibid. 14

<sup>18</sup> ibid. 14

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Sexually transmitted infections (STIs)</u>: In the 2010 ADHS, only 3.8% of women and 0.6% of men in rural areas reported signs or symptoms of STIs in the 12 months preceding the survey [1]. In the 2005 ADHS, only 0.5% of women in rural areas reported signs or symptoms of STIs. However, STIs are associated with high levels of stigma so it is anticipated that many people do not present to public health services with STI related conditions.</p> <p><u>Hepatitis B</u>: Vaccination against hepatitis B has been part of the Armenian EPI standard vaccination regime since 1999, with coverage (of 3<sup>rd</sup> dose) in under 1 year olds reported at approximately 95% in 2012<sup>19</sup>.</p>	<p>In Vayots Dzor Marz, 4.0% of the women (but none of the men) reported symptoms / signs of an STI in the 12 months preceding the 2010 ADHS. None of the men and women in Syunik Marz reported an STI symptom / sign in that period.</p> <p>Vayk Hospital rarely treats people with STIs. Health practitioners believe this is due to stigma and patients preferring private practitioners or self-medication.</p> <p>Gorayk health centre has had a few cases of suspected STIs, which have been referred to specialist hospitals. The other villages have not reported any cases, but acknowledged high levels of stigma locally.</p> <p>Vaccination coverage for Hepatitis B is believed to be adequate in the study area. Any suspected cases are reported to specialist hospitals, as local diagnostic capabilities are limited. Suspected cases, however, were not common.</p>
<p>EHA# 5 – Food and Nutrition-related issues</p>	<p><u>Food security and Malnutrition</u>:                      Malnutrition is reported in Armenia, with 7% of babies born between 2005 and 2009 having a low birth weight. Data from 2003-2009 indicated that 4% of children were moderately to severely underweight; 5% were wasted (low weight for height and a sign of acute malnutrition); and 18% were stunted (low height for age and a sign of chronic malnutrition).</p>	<p>Malnutrition indicators in Vayots Dzor Marz were broadly in line with national averages. By comparison, the level of stunting in Syunik Marz at 37% in 2010 was higher than the national average and much higher than the 2005 finding for the same indicator (7%)<sup>21</sup>.</p> <p>In the 2010 ADHS, 18% of children under five years in Vayots Dzor Marz and 22% in Syunik Marz were found to be overweight<sup>22</sup>.</p>

<sup>19</sup> National Statistical Service [Republic of Armenia], Ministry of Health [Republic of Armenia], and ICF International, *Armenia Demographic and Health Survey 2010*. 2012.

<sup>21</sup> *ibid*

<sup>22</sup> *ibid*



**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p>The 2010 ADHS found that 19% of children (under-five) had stunted growth (8% severely), 4% were wasted and 5% were underweight. At the same time 15% of children were reported as overweight<sup>20</sup>.</p> <p>Increasing food prices, particularly for staple food items such as potatoes, have added pressure to food affordability at a national level. Inflation of staple food products has risen sharply since 2010.</p> <p><u>Anaemia</u>: Anaemia is relatively uncommon in Armenia, which is a good indicator of the status of health in communities. In 2007, 0.5% of rural women (of reproductive age 15-49 years) and 0.6% of rural children were reported as having severe anaemia.</p>	<p>Gndevaz and Saravan health posts regularly weigh children under 12 years of age, and staff did not consider acute malnutrition to be a significant issue in the study area. In the women’s FGD, this was confirmed as food security and malnutrition was not perceived as a major challenge, with a good variety of food to promote a balanced diet.</p> <p>Access to land to support agricultural or animal husbandry is a key element of local livelihoods. In general, the community has good access to municipal land to graze their cattle.</p> <p>Food production in the area is generally for subsistence means or for local sale. Produce sold outside of the immediate study area is usually sold to middle-men who visit the villages, as the local community does not have the means to take the produce to larger markets, such as those in big centres, like Yerevan.</p> <p>Severe anaemia levels in Vayots Dzor Marz are higher than the national average (2%), whereas Syunik is consistent with the national rural average (0.6%). Jermuk Hospital reports rarely seeing cases of anaemia.</p>

<sup>20</sup> *ibid.* 7  
 ZT520088  
 May 2016

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
EHA# 6 – Non-communicable diseases (NCDs)	<p><u>NCD overview:</u>                      In 2008, it was estimated that 90% of all deaths nationally were associated with NCDs<sup>23</sup>. The leading causes of premature death, in order of magnitude include diseases of the circulatory system, cancer, diabetes, external injuries and poisoning.</p> <p>In 2008, it was estimated that 55% of the Armenian population was overweight, with 24% of the population classified as obese (higher for women than in men).</p> <p>Tobacco consumption by men and women is rising rapidly. About 69.4% of men between the ages of 24-65 years smoke.</p> <p>Alcohol consumption is not reported as a major problem currently, but is noted to be increasing especially in the youth.</p>	

<sup>23</sup> *ibid.* 3  
 ZT520088  
 May 2016

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Cardiovascular disease (CVD)</u>: Nationally, CVDs account for 46% of all deaths in 2008 and are among the highest cause of DALYs<sup>24</sup>. This is up from 8.9% in 2002.</p> <p>Hypertension prevalence across Armenia in 2008 was estimated at 50.7% and this is believed to be an under-estimate due to general poor health seeking behaviour toward the public health sector and a preference for self-treatment.</p>	<p>16% of all patients treated between June and November 2011 at the Gorayk health centre were diagnosed with hypertension. These outpatient statistics include children and adolescents, thus the adult prevalence is much higher, outlining the burden of disease from this condition. In the same period, 15% and 24% of cases reported at Gndevaz/Gorayk and Saravan health centres respectively, were recorded as CVD.</p> <p>Based on a review of statistics provided by OXFAM who support a medication support programme, approximately 16.5% of the population in Saravan is receiving treatment for hypertension.</p> <p>In all key informant interviews, health centre staff confirmed that CVD was the major health challenge in the study area. In the FGD the challenge was acknowledged but with limited ability to reduce the occurrence and associated burden of disease.</p>
	<p><u>Diabetes mellitus</u>: In 2008, deaths related to diabetes were 709 / 100,000 for men and 388/100,000 for women. There has been a gradually increasing trend of mean glucose levels.</p>	<p>No data was available on the burden of disease locally, however diabetes was mentioned by most health staff in the study area. Nineteen patients with diabetes are followed up at the Gorayk health centre.</p> <p>However, diabetes was not considered as a major challenge from the FGD held with local women. This may be due to lack of knowledge and education.</p>

<sup>24</sup> *ibid.* 21  
 ZT520088  
 May 2016

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Cancer</u>: Cancer causes approximately 20% of all deaths in Armenia, with the mortality rate for cancer having increased by over 70% in the past decade. Breast cancer and cervical cancer are among the biggest killers of women. There have also been increasing trends of cancer in adolescents and children.</p> <p>Public health policies and the primary healthcare system do not support early detection of cancer. Effective cancer screening programmes and poor health seeking behaviours in the community also limits early detection of cancer.</p> <p><u>Chronic Respiratory Disease</u>: In 2008, chronic respiratory disease contributed to 7% of the total deaths nationally<sup>25</sup>, up from 4% in 2002.</p>	<p>Data is only available from Gorayk health centre, where between June and November 2011 36 new cases of presumptively diagnosed cancer were recorded. Five deaths from cancer were reported in Gorayk in January 2011 for the preceding 12 months.</p> <p>Cancer was mentioned as a challenge by participants of the FGD with lung cancer more common in men and breast and cervix cancer occurring in women.</p> <p>Chronic respiratory diseases and associated morbidity were not reported by health facilities in the study area.</p>
EHA# 7 – Accidents / Injuries	<p><u>Injuries</u>: Injuries are the 5<sup>th</sup> leading cause of death in Armenia (4% of deaths). The leading causes of unintentional injury-related deaths include road traffic injuries (6.4%), poisoning, (1.4%), drowning (0.9%) and fires (0.8%). These levels are, however, lower than EU averages.</p>	<p>Road traffic accidents are reported to occur rarely in the study area.</p> <p>Domestic violence is also reported to be rare in the study area.</p> <p>The health centres have minimal capacity to manage trauma beyond immediate first aid with any mildly serious cases are referred to Sisian or Vayk hospitals for further treatment.</p>
EHA# 8 – Veterinary and Zoonotic Diseases	<p><u>Rabies</u>: WHO confirmed the presence of rabies in Armenia in 2007.</p> <p><u>Crimean-Congo Haemorrhagic Fever (CCHF)</u>: The only case of CCHF ever reported in Armenia was in 1974, although other unconfirmed cases were also noted up until 2006.</p>	<p>No cases have been reported and the disease is not known in the study area.</p> <p>No cases have been reported and the disease is not known in the study area.</p>

<sup>25</sup> ibid. 21  
 ZT520088  
 May 2016

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Brucellosis</u>: The national brucellosis control data shows a widespread and uneven distribution of brucellosis throughout the Republic of Armenia for both cattle and small ruminants<sup>26</sup>. There is a potential risk for human infection and active surveillance remains key in the control of the disease.</p>	<p>Brucellosis is known at a local and regional level, and control strategies have been implemented in the study area. Gorayk cattle are regularly tested and several contaminated animals were destroyed in 2011 to reduce the risk of human transmission.</p>
<p>EHA# 9 – Potentially hazardous materials, noises and mal-odours</p>	<p><u>Radiation related diseases</u>:                      There is no reported data on this health condition at national or local level.</p>	<p>Elevated radon levels exist in the rural communities of the study area (in particular in Gorayk). These pre-existing levels are independent of any project activity. More detail on this and other related topics is included in Chapter 6.</p>
	<p><u>Other environmental health determinants</u>:                      The baseline description of air quality, noise, vibration and water quality are described in each specialist report relevant to the Project ESIA.</p>	<p>See Sections 4.4, 4.5, 4.8 and 4.9.</p>
<p>EHA# 10 – Social determinants of health</p>	<p><u>Mental Health</u>: Mental health services in Armenia are currently described as very limited, with poor integration in the general health care system, very low standards of care or respect for human rights. Stigma on mental disease and poor confidentiality limits the willingness to seek care for mentally ill family members. Community based psychiatric care units are not available.</p> <p>Mental health is a serious concern in the youth with a 2004 study conducted nationally highlighting that 9% of boys and 10% of girls contemplated suicide in the previous year.</p>	<p>Mental illness was not mentioned as a major health concern in the study area interviews. This may be in part due to the stigma associated with mental health issues.</p>

<sup>26</sup> Porphyre, T., et al., *Mapping brucellosis risk in communities in the Republic of Armenia*. Geospatial health, 2010. 5(1): p. 103-118.

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Life Style:</u> Armenians are heavy smokers, with 60.7% of rural men using tobacco, with over 90% of this group smoking more than 10 cigarettes per day.</p> <p>Alcoholism has never been a widespread problem in Armenia, although the situation is slowly deteriorating, especially amongst the youth.</p>	<p>Alcohol consumption was not considered a major problem in the study area. However, most men and women smoke.</p>
<p>EHA# 11 – Cultural Health Practices and Health Seeking Behaviours</p>	<p><u>Health Seeking Behaviours:</u> Under the Soviet Union, Armenians had access to free primary, secondary and tertiary health care (the Semashko model). With the transition to a different health care system, financing now relies upon payments by patients in more than 65% of cases for secondary and tertiary care. Primary health care is still provided free under the “basic benefits package”.</p> <p>In a 2001 study, affordability was cited as the main reason (in 78% of cases) limiting care seeking behaviour towards public health care institutions, with 42% of respondents indicating that they did not seek health care even when displaying symptoms. In the 2005 ADHS, only half of women who reported they had a health condition actually consulted a health care practitioner in the preceding two weeks. This proportion increased to 58% in the 2010 ADHS<sup>27</sup>.</p>	<p>Health staff and women in FGD in the study area reported concerns about the inability of the local community to afford health care services. This often led to delayed diagnosis as minor conditions escalate into conditions that are more complicated.</p> <p>At the Vayk hospital, it was reported that the fee structure was high and generally not affordable to the local community.</p>

<sup>27</sup> *ibid.* 7  
 ZT520088  
 May 2016

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Traditional Medicine:</u> Use of traditional medicine has strong roots in Armenia, with use of plants and herbs as medicinal products passed down through generations. This forms an essential part of current Armenian folk tradition and with practices widely used and culturally important.</p>	<p>The use of traditional medicine was not reported to be of great importance in the study area.</p>
<p>EHA 12 – Health System Issues</p>	<p><u>Health Infrastructure:</u> Post independence, Armenia has seen a transition from large state hospitals to an increasing use of private health facilities (now representing 9.2% of all hospital beds).</p> <p>In 2005, the Armenian Government spent USD 29 per capita for health related expenses, and there were 44 hospital beds per 10,000 people, which is higher than the USA. In 2012, 8% of the total government expenditure was on health.</p> <p>The routine health information system is weak at a national level and is particularly limited in remote rural areas due to:</p> <ul style="list-style-type: none"> <li>• Poorly motivated staff;</li> <li>• Manual recording systems;</li> <li>• Limited diagnostics;</li> <li>• Centralised referral system not feeding results back to local level; and</li> <li>• Poor health seeking behaviours.</li> </ul>	<p>Due to the fees associated with health care provision, a number of health facilities in the study area are supported by NGOs, such as United Methodist Committee on Relief (UMCOR) and Oxfam. These interventions include the free or subsidised supply of medication, often requiring a subscription to a membership that allows access to health screening and medications.</p> <p>Lydian is supporting Oxfam in their health programmes in the study area as part of their community development plans.</p> <p>Only 40% of residents in Saravan were satisfied with the medical care they received compared to 77% in Gndevaz and 83% in Gorayk. Affordability was the key concern, with only 50%, 56% and 39% of Gndevaz, Gorayk and Saravan residents, respectively, reporting they could afford health care.</p> <p>Health seeking behaviour of the communities in the study area is poor, and therefore statistics for the local area are unlikely to fully represent the burden of disease in the area and portray an accurate health profile.</p>

**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><b>Reproductive Health:</b> The total fertility rate in 2010 was reported at 1.7 children, which is less than the replacement fertility levels of just over two children.</p> <p>There has been a reported decline in rural fertility, with a drop from 2.1 in 2000, to 1.8 in 2010. Abortion is legal in Armenia and in 2000, it was reported that 46.8% of Armenian women have experienced at least one abortion, and in the 2010 ADHS it was reported that the abortion rate was 0.8 per women.</p>	<p>According to the 2010 ADHS, the total fertility rate in Vayots Dzor and Syunik Marzes was at 1.8 and 2.0, respectively<sup>28</sup>.</p> <p>In 2005, the ADHS reported that close to 51% of all pregnancies in Vayots Dzor were terminated through induced abortion in the three years preceding the survey. The percentage was lower in Syunik at 32.7%. However, this indicator had improved in 2010, with induced abortion rate at 30.8% and 15.7% for Vayots Dzor and Syunik, respectively. This improvement was supported by an increase in the use of contraceptives<sup>29</sup>.</p>
	<p><b>Breastfeeding:</b> The 2005 ADHS reported only 33% of mothers practiced exclusive breastfeeding in children under 6 months. In 2010, this increased marginally to 35%<sup>30</sup>.</p>	<p>In the study area children are breastfed for a duration of time in line with the national mean.</p>
	<p><b>Maternal Health:</b> Almost all (99%) pregnant women in Armenia receive antenatal care (ANC) from a skilled health provider and the majority (&gt;90%) attend ANC at least 4 times during a pregnancy. Almost all child births occur at a health facility assisted by skilled health personnel<sup>31</sup>.</p> <p>The maternal mortality rate in Armenia was reported at 30 per 100,000 live births in 2011, which is a marked improvement from the rate in 2005 (67 per 100,000 live births).</p>	<p>According to the 2010 ADHS, all women in Vayots Dzor and Syunik Marzes attended ANC during their recent pregnancy, and almost all delivered their child at a health facility assisted by skilled health personnel<sup>32</sup>.</p> <p>No cases of maternal mortality have been recorded in the study area in recent years.</p>

<sup>28</sup> ibid. 27

<sup>29</sup> ibid. 27

<sup>30</sup> ibid. 27

<sup>31</sup> ibid. 27

<sup>32</sup> ibid. 27



**Table 4.15.2: Environmental Health Areas Baseline Health Description**

Environmental Health Area (EHA)	National Level Findings	Study Area Findings
	<p><u>Child Health:</u>                      Infant mortality in Armenia has continued to decline, compared to the 1990 baseline (under-five mortality rate of 49/1000 live births). In 2010, the under-five mortality rate per 1000 live births was recorded at 16 (average for both sexes) while the infant mortality rate was 13 per 1000 live births<sup>33</sup>. Two-thirds of the child deaths occur during the neonatal period.</p>	<p>No recent child deaths have been reported in the past years in Vayk hospital or in the study area.</p>
	<p><u>Immunisation:</u> Immunisation coverage in Armenia is generally very high, with 92% of children aged between 18 and 29 months having received the full suite of WHO recommended vaccinations in 2010<sup>34</sup>.</p>	<p>Statistics collected from the study area indicate that all children under five years of age have completed the vaccination schedule.</p>

<sup>33</sup> ibid. 27

<sup>34</sup> ibid. 27