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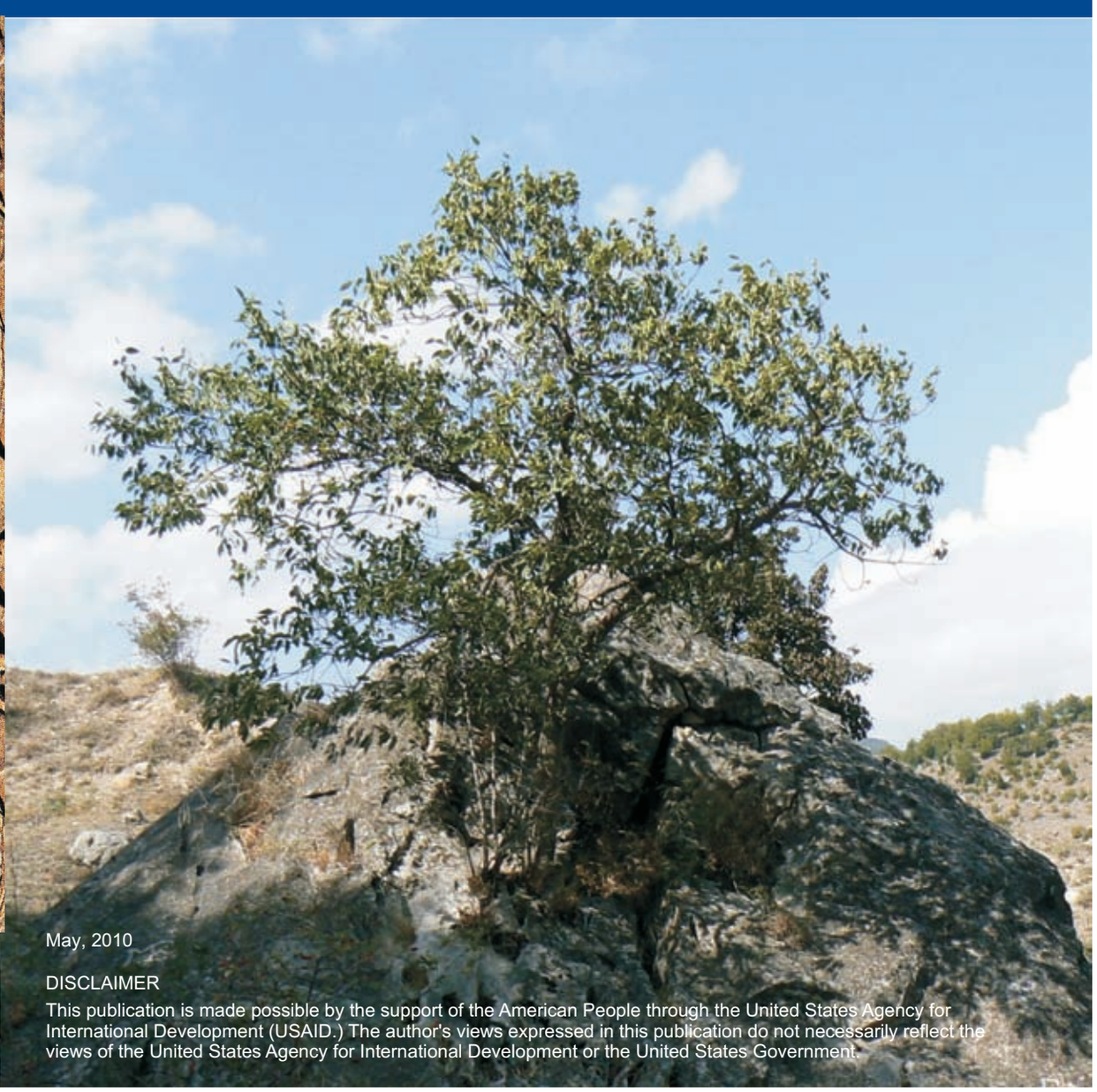
# KNOWLEDGE, ATTITUDES, AND PRACTICES OF HEALTH EDUCATION ACTIVITIES

## POST-INTERVENTION EVALUATION AMONG PATIENTS OF SELECTED PHC FACILITIES IN LORI AND SHIRAK MARZES

## 2008



May, 2010

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# Preface

The Primary Healthcare Reform (PHCR) project is a nationwide five-year (2005-2010) program funded by the United States Agency for International Development (USAID) under a contract awarded to Emerging Markets Group, Ltd. (EMG) in September 2005. The project's primary objective is the increased utilization of sustainable, high-quality primary healthcare services leading to the improved health of Armenian families. This objective is operationalized by supporting the Ministry of Health (MoH) to implement a package of six interventions that links policy reform with service delivery so that each informs the other generating synergistic effects. These six interventions address healthcare reforms and policy support (including renovation and equipping of facilities); open enrollment; family medicine; quality of care; healthcare finance; and public education, health promotion and disease prevention.

"What impact are these interventions having" and "what mid-course adjustments in the project need to be made" are questions frequently asked but less frequently funded. Fortunately, provision was made in the PHCR project to address these questions. PHCR developed a set of six tools to monitor progress and evaluate results. Three of these tools are facility-based and are designed to assess changes through a pre-test and post-test methodology at 164 primary healthcare facilities and their referral facilities. Three other tools are population-based and are designed to assess changes for the whole of Armenia's population, using the same pre-test and post-test methodology.

This report summarizes the results of a survey assessing the health-related knowledge, attitudes, and practices (KAP) among clients of target and comparison primary healthcare facilities in Lori and Shirak marzes (Zone 1). The recommendation to carry out this survey came from the mid-term project assessment that was done in September 2007 in order to better understand the Community Mobilization work carried out by PHCR's Public Education team.

The Center for Health Services Research and Development of the American University of Armenia, one of the sub-contractors to EMG, has primary responsibility for PHCR monitoring and evaluation. Dr. Yelena Amirkhanyan, Dr. Anahit Demirchyan, Ms. Tsovinar Harutyunyan, Dr. Varduhi Petrosyan, and Dr. Michael Thompson are the primary authors of this study. Dr. Hripsime Martirosyan and Ms. Nune Truzyan are acknowledged for their valuable contribution in all stages of the study. We would also like to thank our interviewers (primary healthcare physicians in the target marzes) for their data collection efforts, as well as the patients who participated in the interviews. We are also grateful for the excellent support received from the Ministry of Health and marz officials and the opportunity to collaborate in strengthening health services in Armenia

We trust that the findings of this study will be of value in improving health outcomes through more informed decision-making. The report can be found on the PHCR website at www.phcr.am. Comments or questions on this study are welcome and should be sent to info@phcr.am.

Richard A. Yoder, PhD, MPH
Chief of Party
Primary Healthcare Reform Project

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# Acronyms

| | |
|---|---|
| CHC | Community Health Committee |
| FAP | Rural Health Post (from Russian abbreviation) |
| HIV | Human Immunodeficiency Virus |
| KAP | Knowledge, Attitudes, and Practices |
| M&E | Monitoring and Evaluation |
| PE | Public Education |
| PHC | Primary Health Care |
| PHCR | Primary Health Care Reform |
| RH | Reproductive Health |
| SD | Standard Deviation |
| STD | Sexually Transmitted Diseases |
| TB | Tuberculosis |
| USAID | United States Agency for International Development |
| UTI | Urinary Tract Infection |

# Executive Summary

The purpose of this study is to identify and assess health related knowledge, attitudes, and practices (KAP) among selected patients of facilities targeted by the PHCR project in Lori and Shirak marzes, and how that data compares with patients in facilities not targeted by PHCR. With such information, project activities can be monitored and evaluated.

The survey was conducted in 2008 and utilized a stratified random sampling design. Self-administered interviews were conducted with 669 clients of selected primary health care facilities in Lori (333) and Shirak (336) marzes in July 2008. The Monitoring and Evaluation (M&E) Team developed the KAP survey tool on the basis of the project's Public Education (PE) training modules and materials (leaflets and brochures) in close collaboration with the project's PE team. The PHCR project Chief of Party and USAID representatives reviewed the instrument. Data from respondents from intervention sites with and without established Community Health Committees (CHCs) were analyzed separately.

Most respondents desire health information primarily on topics related to prevention and on management of chronic conditions, such as hypertension, cancer, and diabetes. Though cumulative knowledge and overall KAP scores were higher in the intervention groups (those served by target facilities in towns with and without an established Community Health Committee) compared to the comparison respondents, the scores were still low (about 50%) across all groups. The lowest KAP scores were found for osteoporosis, hypertension, and tuberculosis (TB), emphasizing the need to target PE activities in these areas. KAP scores varied by respondent characteristics. Knowledge and attitude scores were positively associated with age and educational status, with younger and more educated respondents demonstrating more favorable knowledge and attitude scores, thus suggesting a need to target older and less educated populations.

Several significant findings with implications for guiding further development of the PHCR Project emerged from this assessment. Though comparison of patients' cumulative knowledge scores demonstrates better results in intervention sites, they are still low. Lack of knowledge about TB, osteoporosis, and hypertension emphasizes the importance to address these topics during project's public education activities. Desire to receive health education materials expressed by most respondents indicates the need for continuous health education activities in communities. High smoking rates in men indicate importance of continuous and consistent efforts to reduce tobacco consumption in Armenia. Given better KAP scores in communities where CHCs are established, it is important to expand the role of CHCs, as well as to establish CHCs in villages not targeted by the project.

# Introduction

The Primary Healthcare Reform (PHCR) project is a nationwide five-year (2005-2010) program funded by the United States Agency for International Development (USAID) under a contract awarded to Emerging Markets Group, Ltd. (EMG) in September 2005. The project's primary objective is the increased utilization of sustainable, high-quality primary healthcare services leading to the improved health of Armenian families. This objective is operationalized by supporting the Ministry of Health (MoH) to implement a package of six interventions that links policy reform with service delivery so that each informs the other generating synergistic effects. These six interventions address healthcare reforms and policy support (including renovation and equipping of facilities); open enrollment; family medicine; quality of care; healthcare finance; and public education, health promotion and disease prevention.

The six main components of the PHCR Project are run in the partnership with IntraHealth International Inc., American University of Armenia, Overseas Strategic Consulting, Ltd., and include the following activities:

**Expansion of Reforms**: assisting the Government in establishing a supportive regulatory environment for the advancement of reforms; renovating and equipping PHC facilities nationwide; designing and delivering training to facility management

**Family Medicine**: developing up-to-date curricula and training materials for continuous medical education; supporting independent family medicine group practices; providing training to family physicians and nurses

**Open Enrollment**: introducing the open enrollment model, where every resident registers with a PHC physician, in the Armenian healthcare sector to promote customer-oriented services by fostering competition among providers

**Quality of Care**: improving the quality of care by introducing state-of-the-art quality standards and quality assurance procedures; introducing provider licensing and accreditation regulations

**Healthcare Finance**: increasing the transparency and efficiency of the distribution of healthcare funds through improved service costing and performance-based contracting practices; enhancing accountability at the facility level; facilitating the use of National Health Accounts

**Public Education**: enhancing awareness about PHC services offered; improving understanding of open enrollment and acceptance of family medicine providers; promoting healthy lifestyle and health-seeking behavior.

The project utilizes a regional scale-up approach, which allows for expansion of reforms throughout the country over the life of the project. To increase the awareness of common health risks and promote health seeking behavior, the PHCR developed a strategy of health-focused community mobilization that used local NGOs to train Community Health Committees. The CHC is a representative body of volunteers consisting of different community stakeholders, and has a goal of disease prevention, health promotion and generating health ownership. PHCR developed Capacity Building and Health Education training manuals and provided Training of Trainers to local NGOs. The NGOs then train CHCs on high priority health topics and strategies for becoming motivational agents in their communities and long-term partners in future community development activities. The CHC program was implemented in 21 communities of Shirak and Lori regions.

The current assessment establishes and assesses the level of clients' health-related knowledge, attitudes, and practices (KAP) in Lori and Shirak marzes (Zone 1).

# Methods

## Sampling

The study utilized a quasi-experimental non-equivalent control group design. The sample included patients served by PHC facilities from both intervention and comparison sites. The sites in the intervention group were randomly selected from the list of facilities targeted by the Project in Lori and Shirak marzes. The sites in the comparison group were randomly selected from the frame of PHC facilities located in the same area and not targeted by the Project or by any other similar PHC project.

The sample size for KAP survey was calculated using STATA software. The sample for intervention group was 196. The sample size for the comparison group was limited by feasibility and budgetary constraints and was equal to 140. The sample was collected in clusters of 14 respondents, selected from the list of the most recent clients of the selected facility. The cluster size of 14 ensures a satisfactory level of diversity within the sample while maximizing efficiency of the data collection process.

Of the 30 health facilities targeted by the PHCR project in Lori marz (consisting of three polyclinic, four health centers, five ambulatories, and 18 village health posts), 14 were selected through stratified random sampling to ensure that all the types of targeted facilities were represented in the sample proportionate to their distribution in the pool of targeted facilities. Two polyclinic, four ambulatories, and eight village health posts constituted the sample for Lori (one cluster per facility, 14 clusters in total). Ten non-intervention facilities (one policlinic, three ambulatories, and five village health posts) constituted the comparison group in Lori marz. In Shirak marz 12 clusters (two health centers, two ambulatories, and eight village health posts) were selected as intervention sites.. Similarly, 12 clusters (two polyclinic, one ambulatory, one health center, and eight village health posts) were drawn from the non-intervention facilities from Shirak marz to constitute the comparison group (Table 1).

Three interviewers completed 24 clusters (14 for intervention facilities and ten for comparisons in Lori marz and twelve intervention and comparison facilities in Shirak marz). For each cluster, the names and addresses of the 25 most recent clients of the selected facility were taken from the facility's journal of visits. The interviewers visited the selected addresses and provided a self-administered questionnaires to an eligible respondent until 14 questionnaires were distributed. The completed questionnaires were collected in envelopes (distributed along with the questionnaires) sealed by the respondents to ensure the confidentiality of the data.

**Table 1. PHC facilities (intervention and comparison groups), Zone 1 follow-up**

| Marz | Facility | |
|---|---|---|
| | Intervention site | Comparison site |
| Lori | | |
| | Haghpat FAP | Karinj FAP |
| | Dsegh MC (ambulatory) | Bovadzor FAP |
| | Shamut FAP | Gyulagarak FAP |
| | Shnogh ambulatory | Kurtan ambulatory |
| | Teghut FAP | Pambak FAP |
| | Tashir policlinic | Arjut FAP |
| | Lernahovit FAP | Vanadzor #1 polyclinic |
| | Lernapat ambulatory | Shahumyan ambulatory |
| | Lermontov FAP | Bazum FAP |
| | Spitak polyclinic | Jrashen ambulatory |
| | Lernantsk FAP | |
| | Lusaghbyur FAP | |
| | Sarahart FAP | |
| | Sarahart ambulatory | |
| Shirak | | |
| | Kamo FAP | Polyclinic #2** |
| | Hovit FAP* | "Enrique Matie" polyclinic |
| | Karnut FAP* | Shirak FAP** |
| | Maisyan ambulatory | Azatani ambulatory |
| | Hovuni FAP* | Mets Sariar FAP |
| | Akhurik ambulatory | Gharibjanyan FAP |
| | Arapi FAP* | Hayrenyats FAP |
| | Voskehask FAP* | Sarnaghbyur HC |
| | Panik HC | Gusanagyugh FAP |
| | Isahakyan FAP | Hoghmik FAP |
| | Shirakavan FAP | Torosgyugh FAP |
| | Amasia HC | Goghovit FAP |

*CHC established
**Excluded as a target site after baseline survey

## Instrument

The KAP survey was designed to compare the level of health-related knowledge, attitudes, and practices in selected project target communities, both with and without CHCs, with comparison communities not targeted by the project.

The instrument, developed in close collaboration with the PHCR PE team on the basis of its training modules and materials (leaflets and brochures), focused specifically on issues targeted by the Project: child health (including breastfeeding, child safety, and immunization), reproductive health (RH), tuberculosis (TB), diabetes, hypertension, healthy nutrition, urinary tract infections (UTI), healthy bones, and healthy lifestyle. The instrument also contained socio-demographic questions. In addition to distributing the self-administered questionnaires, the interviewers completed journal forms (Appendix 2) where they recorded information regarding the interview and selection processes to document compliance with the sampling protocol and response patterns.

## Training/pre-testing/data collection & entry

Interviewer training and pre-testing lasted one day in each marz. The PHCR M&E Team developed and delivered to interviewers a training guide containing important information regarding the research objectives, methods, sampling/interview administration, and timeline. Three interviewers in Lori marz and three interviewers in Shirak marz participated in this assessment. The interviewers received all the items necessary to conduct the fieldwork, including facility code lists, journal forms, maps, instruments in Armenian and Russian, envelopes, folders, and pencils. Data collection took place in July 2008. The staff the Center for Health Services Research and Development of the American University of Armenia, trained by the Project's M&E Team, entered that data into SPSS 11 statistical package. Double entry and subsequent cleaning ensured the accuracy of the database.

## Data analysis

The KAP survey, focused on health issues targeted by the Project: child health (including breastfeeding, child safety, and immunization), RH, STD, TB, diabetes, hypertension, healthy nutrition, UTI, healthy bones, and healthy lifestyle. The data were analyzed by specific topic and in aggregate (e.g., child care) for both the intervention and comparison groups.

However, since Community Health Committees were not established in all Zone 1 1intervention villages, this report analyzes responses from facilities in villages with CHCs separately from those without. For "knowledge" items, each correct response to one of the 16 items was valued as one while incorrect or "don't know" responses were scored as zero. For the eight "attitudinal" items a score of one was given for each favorable attitude and a zero to each unfavorable or indifferent response (see Appendix 1). For "practice" items (4 items), responses consistent with evidence-based recommendations were scored as one; other responses were scored as zero. The M&E team then converted these scores to percentages. Summative scores were not calculated if answers to any element were missing. This led to missing values for up to 18% of the summary scores.

# Results

## Client knowledge

The 16 knowledge items consisted of five items on child health, breast feeding, immunization, and safety; two items on healthy nutrition; two on diabetes; two on STDs; and one each on reproductive health, hypertension, osteoporosis, TB, and UTI. Table 2 provides the proportion of correct answers. The intervention group demonstrated better knowledge on prevention of whooping cough and vaccination. Respondents from the intervention group were also more likely to be aware of the risk factors for Type 2 Diabetes and its early signs and to know about condom use and UTIs, though the proportion of correct answers for the last item was low. In general, respondents demonstrated good knowledge on breastfeeding, child diarrhea, use of condoms, and threat of contracting HIV if getting an injection with unsterilized needle. About three-fourths of the intervention group respondents knew that home-canned food can be threatening for health; about one-third of respondents knew that contraceptive pills do not protect from STDs, and less than half knew that profuse night sweating could be a sign of TB and that hypertension does not cause any noticeable symptoms in its early stages (Table 2). The cumulative knowledge score was significantly

higher in both the CHC and non-CHC intervention groups than in the comparison group: 51.8 (SD[1]. 15.3) and 52.1 (SD. 15.2) versus 46.8 (SD. 16.1).

[1] The *standard deviation* (SD) is a statistic that shows how tightly all the various examples are clustered around the mean in a set of data. When the examples are tightly bunched together and the bell-shaped curve is steep, the standard deviation is small. When the examples are spread apart and the bell curve is relatively flat, that says there is a relatively large standard deviation

**Table 2. Correct knowledge, by intervention and comparison groups**

| | Intervention with CHC | | Intervention without CHC | | Comparison | |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| For the first six months of life, a baby does not need any food or drink except breast milk. | 97 | 71.3 | 143 | 68.8 | 201 | 68.4 |
| It is in child's best interest to be breastfed into the second year of his life. | 91 | 68.4 | 136 | 66.0 | 185 | 62.9 |
| Heavily dressing a child is a better way to prevent him from getting whooping cough than vaccination.*,** | 79 | 59.0 | 96 | 46.6 | 141 | 49.0 |
| A child less than 4 years old should not be allowed to play with items smaller than his fist or toys with components that can easily come loose.* | 99 | 73.3 | 156 | 75.7 | 168 | 58.5 |
| When a child has diarrhea, he/she should be given liquids more than he/she normally drinks. | 115 | 84.6 | 178 | 86.0 | 247 | 85.2 |
| Home-canned food can be threatening for health. | 101 | 74.3 | 155 | 75.2 | 206 | 70.3 |
| Fried food is healthier than baked food. (False) | 20 | 14.7 | 41 | 20.2 | 63 | 21.8 |
| Excessive use of coffee cannot increase the risk of bone fractures. (False) | 26 | 19.3 | 61 | 17.9 | 35 | 17.0 |
| Obesity does not contribute to the onset of adults' (type II) diabetes. (False)* | 38 | 28.1 | 57 | 27.9 | 51 | 18.0 |
| Frequent urination or excessive urine volume is a sign of diabetes.* | 39 | 28.7 | 45 | 21.8 | 47 | 16.6 |
| At its early stages, high blood pressure does not cause any noticeable symptoms. | 55 | 40.7 | 88 | 42.7 | 118 | 41.4 |
| Profuse night sweating could be a sign of tuberculosis. | 59 | 44.0 | 94 | 45.6 | 125 | 44.0 |
| Urinary tract infections are more frequent in boys than in girls. (False)* | 28 | 21.1 | 46 | 22.5 | 28 | 9.8 |
| Contraceptive pills protect from sexually transmitted diseases. (False) | 43 | 33.1 | 77 | 37.6 | 73 | 25.2 |
| Condoms can be re-used. (False)* | 115 | 84.6 | 165 | 80.1 | 209 | 72.6 |
| A person is at risk of contracting HIV if he is given an injection with an unsterilized needle. | 117 | 85.4 | 175 | 84.1 | 235 | 81.3 |
| Cumulative knowledge score, mean (SD) * | 51.8 (15.3) | | 52.1 (15.2) | | 46.8 (16.1) | |

*statistically significant difference between intervention (with CHC) and comparison groups, $p^2 \leq .05$

**statistically significant difference between intervention group with CHC and intervention group without CHC, $p \leq .05$

[2] *P value* is a measure of statistical significance and shows the probability that a difference between groups happened by chance. A lower P value for any difference in outcomes indicates a lower probability that the difference was a result of chance. Results with a low P value are considered statistically significant. For example, a p-value of .01 (p = .01) means there is a 1 in 100 chance the result occurred by chance. For most social science research, a p-value of .05 or less is considered acceptable.

## Client attitude toward health issues

The eight attitudinal items addressed healthy lifestyle, child health, and reproductive health (two items each), and diabetes and hypertension (one item each). The proportion of respondents exhibiting the desired attitude varied widely by item (33-95%), but was generally higher in the intervention group, with respondents from villages having CHC more likely to report desired attitudes (Table 3). The mean cumulative attitude scores were higher in both intervention subgroups: CHC 63.9% (SD. 18.8) and non-CHC 63.2 (SD.17.0) versus 60.4% (SD. 19.2) in the comparison group. Comparison respondents, however, demonstrated higher levels of desired attitudes toward tooth brushing in preschoolers. The greatest attitudinal deficits among all respondents related to the importance of adherence to vaccination schedule followed by provider's capacity to recommend contraceptive methods and physical activity as a preventive measure for hypertension.

**Table 3. Desired attitudes, by intervention and comparison group**

| | Intervention with CHC | | Intervention without CHC | | Comparison | |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| Most people need regular medical check-ups in order to maintain their health? | 129 | 93.5 | 208 | 95.0 | 274 | 93.5 |
| Many people can become healthier by changing their lifestyle and behaviors? | 103 | 74.6 | 167 | 77.0 | 232 | 79.7 |
| Physically active lifestyle can prevent hypertension | 59 | 43.4 | 83 | 38.8 | 106 | 37.2 |
| Diabetes complications may not be prevented if blood glucose level is well controlled* | 108 | 79.4 | 162 | 75.7 | 188 | 65.5 |
| It is important to strictly follow the vaccine schedules | 53 | 39.3 | 75 | 36.1 | 94 | 32.9 |
| There is a need to brush teeth of a preschooler | 94 | 68.1 | 151 | 70.9 | 213 | 73.4 |
| At least three years of spacing between births is good for both mother's and newborn's health*,** | 121 | 88.3 | 171 | 80.3 | 214 | 74.3 |
| Healthcare provider can be helpful to a couple in selecting an appropriate method of contraception | 51 | 38.1 | 80 | 37.6 | 113 | 39.2 |
| Cumulative attitudinal score, mean (SD) | 63.9 (18.8) | | 63.2 (17.0) | | 60.4 (19.2) | |

*statistically significant difference between intervention (with CHC) and comparison groups, $p \leq .05$

**statistically significant difference between intervention group with CHC and intervention group without CHC, $p \leq .05$

## Client practices

The four practice items included two on healthy lifestyle (smoking and preventive primary care visits) and two on healthy nutrition (use of salt and solid fats such as butter, margarine, or lard). Table 4 shows the proportion of those who reported recommended behaviors. The only statistically significant difference was observed in the proportion of non-smokers across all groups. The proportion of non-smokers was dramatically higher in the intervention groups than the population rates for the country, but this finding is an artifact of the large proportion of women (83%) in the sample. Examining smoking by gender among all respondents provides smoking estimates closer to that of the population as a whole: 1.7% of women and 44.4% of men (Table 5). Analysis did not reveal significant differences in smoking among groups. The mean cumulative practice scores were similar across all groups.

**Table 4. Desired practices, by intervention and comparison group**

| | Intervention with CHC | | Intervention without CHC | | Comparison | |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| Non-smoker*,** | 134 | 97.1 | 198 | 90.8 | 261 | 87.9 |
| Does not add salt before tasting it* | 97 | 70.8 | 168 | 78.5 | 234 | 79.9 |
| Usually fries with vegetable oils | 53 | 39.0 | 81 | 38.2 | 111 | 38.0 |
| Had preventive health visit within past year | 72 | 52.6 | 124 | 56.9 | 161 | 54.6 |
| Cumulative practice score, mean (SD) | 64.4 (19.7) | | 66.8 (22.4) | | 65.4 (21.9) | |

*statistically significant difference between intervention (with CHC) and comparison groups, $p \leq .05$
**statistically significant difference between intervention group with CHC and intervention group without CHC, $p \leq .05$

**Table 5. Smoking practice, by gender**

| | Male | | Female | |
|---|---|---|---|---|
| | n | % | n | % |
| Smoker | 48 | 44.1 | 9 | 1.7 |
| Non-smoker | 60 | 55.6 | 523 | 98.3 |

Most respondents (87.0% CHC and 81.6% non-CHC, 83.7% comparison group) reported interest in receiving information on health-related topics in the future. Many people stated they were interested in all topics. Among most frequently mentioned topics of interest were general health issues, hypertension, cancer, diabetes, STDs, and preventive care. Nearly two-thirds (61.2%) of respondents from sites with CHCs were aware of those committees in their community. Surprisingly, 24.3% of intervention sites without CHCs and 18.3% of respondents from comparison sites reported having CHCs established in their communities.

About two-thirds of respondents in all groups mentioned that they have participated in some activities led by a CHC. About 83% of respondents in communities with CHCs mentioned that they received printed health education materials from a CHC member (85.1% and 73.5% in communities without CHCs and control communities respectively) and 72.1% of respondents in intervention sites mentioned that they red those materials (70.0% and 80.0% in communities without CHCs and control communities respectively). An overwhelming majority of respondents mentioned that they received PE materials (Table 6).

The high proportion of respondents stating that they received health education materials in comparison sites could be explained by word-of-mouth or by education activities of other health projects.

**Table 6. Proportion of respondents receiving PE materials**

| Received information on: | Intervention with CHC | | Intervention without CHC | | Comparison | |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| Open enrollment | 69 | 92.0 | 37 | 86.0 | 30 | 83.3 |
| Bone diseases | 48 | 65.8 | 25 | 61.0 | 12 | 36.4 |
| Diabetes | 55 | 74.3 | 33 | 78.6 | 14 | 45.2 |
| STIs prevention | 54 | 74.0 | 32 | 78.0 | 22 | 68.8 |
| High blood prevention | 64 | 86.5 | 35 | 79.5 | 21 | 67.7 |
| Child nutrition | 62 | 84.9 | 32 | 76.2 | 31 | 88.6 |
| Children safety | 64 | 88.9 | 36 | 83.7 | 27 | 81.8 |
| Family planning | 51 | 71.8 | 32 | 76.2 | 28 | 87.5 |

About 65% of respondents in the intervention sites mentioned that health information received from the CHCs influenced their decision to visit a health facility (66.7% and 67.4% in communities without CHCs and control communities respectively) and 86.1% respondents in the intervention sites mentioned that CHC's work was useful to solve health problems in their communities (82.7 and 80.4% in communities without CHCs and control communities respectively).

## Client KAP levels by PHCR Project targeted topic

Aggregate KAP scores were computed by health topic (combining related knowledge, attitude, and practice items for a given topic) and reported as a percentage. This resulted in scores for child health & care (seven items, including breastfeeding, vaccination, child care, and child safety), breastfeeding (two items), vaccination (two items), child care (two items), child safety (one item), healthy nutrition (four items), healthy lifestyle (four items), diabetes (three items), reproductive health (three items), hypertension (two items), STDs (two items), osteoporosis (one item), TB (one item), and UTI (one item). Table 6 presents the results comparing the intervention and comparison groups by topic. Significantly higher scores were observed for child health care topics (especially child safety), diabetes, reproductive health, and STDs in the intervention group(s). The aggregate KAP sore for UTIs was one of the lowest, though still significantly higher in the intervention group(s). The overall KAP score was significantly higher in the intervention group with CHC compared to the control group (Table 7).

**Table 7. Aggregate KAP scores by health topic, intervention and comparison groups**

| | Intervention with CHC | | Intervention without CHC | | Comparison | |
|---|---|---|---|---|---|---|
| | n | Mean (SD) | n | Mean (SD) | N | Mean (SD) |
| Child care (cumulative)* | 130 | 66.6 (17.4) | 194 | 64.5 (19.7) | 269 | 61.4 (22.2) |
| Breastfeeding* | 133 | 70.7 (38.0) | 205 | 67.6 (36.5) | 291 | 65.5 (36.5) |
| Vaccination | 132 | 49.2 (38.6) | 198 | 41.4 (36.0) | 281 | 40.7 (37.6) |
| Child care | 136 | 76.8 (29.8) | 204 | 78.7 (28.5) | 285 | 79.5 (28.6) |
| Child safety* | 134 | 73.9 (44.1) | 206 | 75.7 (43.0) | 287 | 58.5 (49.4) |
| Healthy nutrition | 131 | 49.2 (20.1) | 191 | 53.0 (21.2) | 271 | 52.9 (21.7) |
| Healthy lifestyle | 136 | 79.6 (18.3) | 214 | 79.5 (20.4) | 282 | 79.1 (21.4) |
| Diabetes* | 134 | 73.9 (44.1) | 206 | 75.7 (43.0) | 287 | 58.5 (49.4) |
| Reproductive health* | 131 | 70.7 (24.8) | 203 | 66.2 (27.0) | 280 | 62.3 (29.9) |
| Hypertension | 133 | 34.2 (33.4) | 201 | 35.3 (33.1) | 277 | 31.0 (31.2) |
| STDs | 130 | 60.3 (29.0) | 204 | 60.5 (31.8) | 288 | 53.1 (31.1) |
| Osteoporosis | 135 | 19.3 (39.6) | 206 | 17.0 (37.6) | 288 | 21.2 (40.9) |
| Tuberculosis | 134 | 44.0 (49.8) | 206 | 45.6 (49.9) | 284 | 44.0 (49.7) |
| Urinary tract infections* | 133 | 21.1 (40.9) | 204 | 22.5 (41.9) | 287 | 9.6 (29.7) |
| Overall KAP score* | 114 | 57.0 (11.9) | 166 | 57.5 (12.6) | 218 | 53.8 (13.5) |

*statistically significant difference between intervention (with CHC) and comparison groups, $p \leq .05$

## Client KAP levels by socio-demographic characteristics

Tables 8 and 9 summarize respondent KAP level by socio-demographic characteristics. Knowledge and practice varied across marzes, with Shirak residents demonstrating generally more favorable scores. Standard of living was not associated with KAP scores. Women had more favorable practices than men did. Younger respondents exhibited significantly better

knowledge and attitudes. Higher education level was positively associated with desired knowledge, attitudes, and overall scores.

**Table 8. KAP scores by age, gender, education, standard of living**

| | Knowledge score mean (SD) | Attitude score mean (SD) | Practice score mean (SD) | Overall KAP score mean (SD) |
|---|---|---|---|---|
| Age | | | | |
| Younger <44 | 51.2 (16.2)* | 63.9 (18.3)* | 63.8 (21.6)* | 56.8 (13.3) |
| Older (≥ 44) | 47.9 (15.3)* | 60.2 (18.6)* | 68.0 (21.6)* | 54.6 (12.5) |
| Gender | | | | |
| Female | 49.4 (15.3) | 62.7 (17.6) | 67.7 (20.3)* | 56.0 (12.5) |
| Male | 51.3 (18.6) | 51.1 (22.2) | 56.6 (24.2)* | 54.6 (15.4) |
| Education | | | | |
| School (< 10 years) | 45.2 (19.6)* | 54.6 (19.9)* | 61.4 (21.4) | 50.9 (16.9)* |
| School (10 years) | 47.3 (15.3)* | 59.7 (17.8)* | 65.3 (21.3) | 53.5 (12.2)* |
| Professional/technical | 52.4 (14.2)* | 65.3 (17.7)* | 67.0 (22.1) | 58.6 (11.5)* |
| Institute/University or postgraduate | 53.5 (15.8)* | 67.6 (17.9)* | 66.5 (21.7) | 59.2 (12.8)* |
| Standard of living | | | | |
| Below average | 48.9 (17.2) | 59.7 (18.0) | 66.5(21.9) | 55.0 (13.4 |
| Average | 50.4 (15.3) | 63.1 (18.9) | 65.5 (21.8) | 56.6 (12.6) |
| Above average | 48.8 (15.3) | 62.9 (17.2) | 65.0 (21.2) | 54.9 (13.1) |

*statistically significant difference, $p \leq .05$

**Table 9. KAP scores by monthly household income and marz**

| | **Knowledge score mean (SD)** | **Attitude score mean (SD)** | **Practice score mean (SD)** | **Overall KAP score mean (SD)** |
|---|---|---|---|---|
| **Monthly household income (drams)** | | | | |
| <25,000 | 49.4 (16.2) | 59.9 (19.6) | 68.2 (20.6) | 55.7 (12.7) |
| 25,000 – 50,000 | 49.2 (15.7) | 61.5 (18.7) | 63.3 (21.4) | 55.0 (13.3) |
| 51,000 – 100,000 | 50.5 (15.0) | 63.0 (19.7) | 65.7 (21.9) | 56.6 (13.1) |
| >101,000 | 51.9 (16.9) | 65.6 (21.4) | 65.2 (17.1) | 57.7 (14.7) |
| **Marz** | | | | |
| Lori | 48.0 (15.0)* | 62.7 (18.3) | 69.0 (21.4)* | 55.4 (12.5) |
| Shirak | 51.2 (16.4)* | 61.5 (18.5) | 62.3 (21.4)* | 56.2 (13.4) |

*statistically significant difference, $p \leq .05$

# Conclusions and Recommendations

The main KAP findings are summarized below:

- **The intervention and comparison groups are different.**
  - Cumulative knowledge scores were statistically significantly higher in both the CHC and non-CHC intervention groups (51.8% and 52.1%, respectively) compared to control respondents (46.8%), but still low.
  - Cumulative attitude and practice scores were similar across all groups.
  - The overall KAP score was statistically significantly higher in both CHC and non-CHC intervention groups (57.0% and 57.5%) versus 53.8% in the comparison group.
- **Most respondents desire health education information**. Most (> 80%) respondents in all groups expressed interest in receiving literature on one or more health education topics. Many were interested in general health information, as well as in information on hypertension, cancer, diabetes, STDs, and preventive care.
- **Respondents know most about diabetes, reproductive health, child care, and STDs**. The aggregate KAP score for diabetes was 74%, reproductive health 70%, child care 67%, and STDs 60%.
- **Respondents know least about osteoporosis, hypertension, and TB**.
  - The lowest KAP scores were observed for osteoporosis, hypertension, and TB (19.3%, 34.2%, and 44%, respectively. These findings stress the need for the PHCR project's PE activities to target these topics during CHC trainings.
  - Smoking rates in survey population were close to the population as a whole estimates. About 2% of women and 45% of men in survey population were smokers.
- **More respondents in comparison group reported non-desirable nutrition practices**. About 10% more respondents in the comparison group reported adding salt before tasting it.
- **Knowledge and attitude scores are negatively associated with age and positively associate with education.**
  - Younger respondents demonstrated statistically significantly more favorable knowledge and attitude scorers compared to older ones, suggesting the need to target older populations.
  - Higher educational level was statistically significantly positively associated with desired knowledge and attitude scores, suggesting the need to target population with lower education levels.

Analysis and comparison of intervention and comparison groups' data demonstrate that the project is working as intended. Several significant findings with implications for guiding further development of the PHCR Project's public education component emerged from this assessment:

- Although comparison of patients' cumulative knowledge scores demonstrates better results in intervention sites, they are still low
- Lack of knowledge about TB, osteoporosis, and hypertension indicates the need to address these topics during project's public education activities.
- Desire to receive health education materials expressed by most respondents, indicates the need to continue health education activities in communities.

- High smoking rates in men indicate importance of continuous and consistent efforts to reduce tobacco consumption in Armenia
- Given better KAP scores in communities where CHCs are established, it is important to expand the role of CHCs, as well as to establish CHCs in villages not targeted by the project.

## Appendix 1

### Health Knowledge, Attitude, & Practice Survey

***The following questions assess your attitudes about several health-related issues. Your answers will help us to better organize and evaluate health education activities in your community. Thanks in advance.***

**For each statement given, please indicate whether you think it is true or false.**

| | | | |
|---|---|---|---|
| For the first six months of life, a baby does not need any food or drink except breast milk. | □ 1. True | □2.False | □ 3. Don't know |
| It is in child's best interest to be breastfed into the second year of his life. | □ 1. True | □ 2. False | □ 3. Don't know |
| Heavily dressing a child is a better way to prevent him from getting whooping cough than vaccination. | □ 1. True | □ 2. False | □ 3. Don't know |
| A child less than 4 years old should not be allowed to play with items smaller than his fist or toys with components that can easily come loose. | □ 1. True | □ 2. False | □ 3. Don't know |
| When a child has diarrhea, he/she should be given liquids more than he/she normally drinks. | □ 1. True | □ 2. False | □ 3. Don't know |
| Home-canned food can be threatening for health. | □ 1. True | □ 2. False | □ 3. Don't know |
| Fried food is healthier than baked food. | □ 1. True | □ 2. False | □ 3. Don't know |
| Excessive use of coffee cannot increase the risk of bone fractures. | □ 1. True | □ 2. False | □ 3. Don't know |
| Obesity does not contribute to the onset of adults' (type II) diabetes. | □ 1. True | □ 2. False | □ 3. Don't know |
| Frequent urination or excessive urine volume is not a sign of diabetes. | □ 1. True | □ 2. False | □ 3. Don't know |
| At its early stages, high blood pressure (hypertension) does not cause any noticeable symptoms. | □ 1. True | □ 2. False | □ 3. Don't know |
| Profuse night sweating could be a sign of tuberculosis. | □ 1. True | □ 2. False | □ 3. Don't know |
| Urinary tract infections are more frequent in boys than in girls. | □ 1. True | □ 2. False | □ 3. Don't know |
| Contraceptive pills protect from sexually transmitted diseases. | □ 1. True | □ 2. False | □ 3. Don't know |
| Condoms can be re-used. | □ 1. True | □ 2. False | □ 3. Don't know |
| A person is at risk of contracting Human Immunodeficiency Virus if he is given an injection with an unsterilized needle. | □ 1. True | □ 2. False | □ 3. Don't know |

Do you think that...

| | | | |
|---|---|---|---|
| Most people need regular medical check-ups in order to maintain their health? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |
| Many people can become healthier by changing their lifestyle and behaviors? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |
| Physically active lifestyle cannot prevent hypertension? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |

| | | | |
|---|---|---|---|
| Diabetes complications may be prevented if blood glucose level is well controlled? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |
| Vaccine schedules are general guides and it doesn't really matter if the schedule is strictly followed. For instance, it is OK if a child is vaccinated within six months of the appropriate time? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |
| There is no need to brush teeth of a preschooler? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |
| At least three years of spacing between births is good for both mother's and newborn's health? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |
| Healthcare provider cannot be helpful to a couple in selecting an appropriate method of contraception? | □ 1. Agree | □ 2. Disagree | □ 3. Unsure |

The following questions refer to your lifestyle.

Do you currently smoke? □ 1. Yes □ 2. No

Do you add salt in your meal before testing it? □ 1. Yes □ 2. No

What do you (or a family member) usually use when frying potato or vegetables:
(please mark only one option).

□ 1. Butter or melted butter
□ 2. Ready made oil
□ 3. Vegetable oil
□ 4. Margarine
□ 5. Lard
□ 6. Other*(specify)*_____
□ 7. Nothing (do not fry)
□ 8. Don't know

During the last year, did you visit a healthcare provider for a preventive check-up (help to avoid getting sick in future)? □ 1. Yes □ 2. No

Would you like to receive information on health-related topics in future?

□ 1. Yes (please, indicate the topics) _____
□ 2. No

To your knowledge, has a Community Health Committee (CHC) been established in your community (CHC is a group of villagers who passed training and are involved in health education activities in your village)?

□ 1. Yes □ 2. No (If no, do not answer the remaining questions.
Thank you for participating in the survey!)

Have you or a family member participated in any CHC-led community activities in the last 12 months?
□ 1. Yes □ 2. No

Have you received any health-related written materials from a CHC member (including a PHC nurse) - any leaflets, brochures, etc.?

□ 1. Yes □ 2. No (If no, go to question 34)

Have you read these materials?

□ 1. Yes, all of them □ 2. Yes, some of them □ 3. No

Please indicate if you have received any information on the following healthcare topics from the CHC members or through the CHC activities.

| | | |
|---|---|---|
| 1. Open enrollment | □ 1. Yes | □ 2. No |
| 2. Healthy bones | □ 1. Yes | □ 2. No |
| 3. Diabetes | □ 1. Yes | □ 2. No |
| 4. Prevention of Sexually transmitted diseases | □ 1. Yes | □ 2. No |
| 5. Hypertension | □ 1. Yes | □ 2. No |
| 6. Child nutrition | □ 1. Yes | □ 2. No |
| 7. Child safety | □ 1. Yes | □ 2. No |
| 8. Family Planning | □ 1. Yes | □ 2. No |

Have any of your visit(s) to a health care facility been motivated by the information received from the CHC members or through the CHC activities?

□ 1. Yes □ 2. To some extent □ 3. No

Do you think that CHC activities help your community in dealing with community health issues?

□ 1. Yes □ 2. To some extent □ 3. No

Thank you for participating in the survey!

## Appendix 2

**Journal Form**

(One form for each cluster of 14 respondents served by a health care facility)

Date: _____
City/Village_____
Interviewer's name _____
Facility type:  Policlinic
 SVA
 Health Center
 FAP

Facility code _____

| Visit/ attempt number | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Result code | | | | | | | | | | | | | | |

| Visit/ attempt number | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Result code | | | | | | | | | | | | | | |

| Visit/ attempt number | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Result code | | | | | | | | | | | | | | |

**RESULT CODES**

Completed interview
Nobody at home
No eligible respondent
Selected respondent not at home
Refusal
Refusal by selected respondent
Respondent unable to participate _____
Other _____
Incomplete interview