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PHCR
Primary Healthcare Reform Project

FACILITY AND PROVIDER PERFORMANCE ASSESSMENT

BASELINE ASSESSMENT OF TARGETED PRIMARY
HEALTHCARE FACILITIES IN ARARAT, ARMAVIR, AND
ARAGATSO TN MARZES

2008



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FACILITIES IN ARARAT, ARMAVIR, AND ARAGATSOTN MARZES**

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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?” is a question frequently asked but less frequently funded. Fortunately, provision was made in the PHCR project to address the “impact” question. 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 baseline facility/provider performance assessment of targeted primary healthcare facilities in Ararat, Aragatsotn, and Armavir marzes (Zone 3-1). This baseline facility assessment gathered data for internal planning and provides a referent for future evaluation of project impact in Zone 3-1.

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. 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 providers 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.

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Table of Contents

Preface.....	ii
List of Acronyms	iv
1. Introduction.....	1
2. Methods.....	2
3. Results.....	4
3.1. Access to/provision of care.....	5
3.2. Provider relations with community and clients	7
3.3. Environment.....	9
3.4. Facility management.....	11
3.5. Primary and secondary prevention.....	13
3.6. Total performance score	15
3.7. Technical competence of primary health care providers	16
3.7.1 Nurses	16
3.7.2 Doctors of ambulatories, health centers and polyclinics	20
3.8. Main findings	23
Appendix 1. Baseline Facility Performance Assessment Tool.....	24
Appendix 2. Mean scores by facility (facility performance assessment)	34

List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AUA	American University of Armenia
BBP	Basic Benefits Package
CHC	Community Health Committee
CHD	Coronary Heart Disease
CHSR	Center for Health Services Research and Development
CPR	Cardio-Pulmonary Resuscitation
CVD	Cardio-Vascular Diseases
ECG	Electrocardiography
EMG	Emerging Markets Group
FAP	Rural Health Post (from Russian abbreviation)
FM	Family Medicine
FN	Family Nursing
HC	Health Center
HIV	Human Immunodeficiency Virus
IV	Intravenous
KAP	Knowledge, Attitude, and Practice
MA	Medical Ambulatory
M&E	Monitoring and Evaluation
MOH	Ministry of Health
NOVA	Strengthening Reproductive Health Care Services in Rural Areas (Armenian)
PC	Polyclinic
PHC	Primary Health Care
PHCR	Primary Health Care Reform
PMP	Performance Management Plan
SHAI	State Hygiene and Anti-epidemic Inspectorate
TB	Tuberculosis
UFNC	Unified Family Nursing Curriculum
USAID	United States Agency for International Development

1. Introduction

1.1 PHCR Project Overview: The United States Agency for International Development (USAID) awarded Emerging Markets Group (EMG), an international consulting firm, a five-year contract to run the Primary Health Care Reform (PHCR) Project in Armenia. The Project is designed to improve population access to and use of high quality primary healthcare services through strengthening Primary Health Care (PHC) facilities and family medicine providers, on one hand, and improving public health awareness, health-seeking behavior, and demand for PHC services, on the other. The six main components of PHCR project are run in 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; creating free-standing family medicine group practices; providing training to family physicians and nurses
- **Open Enrollment:** introducing the open enrollment principle 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; determining 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 the zonal expansion of the reforms throughout the country over the life of the project. While applying this approach, the project primarily focuses on upgrading physical conditions and enhancing delivery of care in selected facilities in each zone, overall targeting approximately three hundred facilities throughout Armenia. The 3rd zone targeted by the project includes 5 marzes: Aragatsotn, Armavir, Ararat, Vayots Dzor, and Syunik. Of these marzes, the first three (Aragatsotn, Armavir, and Ararat) are the third year targets and are referred to as Zone 3 first stage or Zone 3-1.

The project has renovated and furnished target facilities and provided equipment, as well as trained medical and administrative staff in family medicine, quality of care, management, financing, accounting, implementation of software for accounting, open enrollment, and performance-based reimbursement. The communities served by these facilities are also targets, particularly for the PHCR Project public education activities such as establishing and running Community Health Committees and utilizing small grant projects. Not all targeted facilities, however, are selected for all of these activities: activities are implemented based on local needs and priorities.

1.2 PHCR Project Monitoring & Evaluation Plan: The following assessments are being conducted throughout the project to monitor its implementation and evaluate its impact:

1) Baseline assessments, including:

Facility-level assessments of target facilities at baseline in each marz. These include:

1) Facility resource assessment covering structural indicators for all project components, with some of them being Performance Management Plan (PMP) indicators; 2) Facility performance assessment covering performance of facility and providers which could serve as a basis for measuring improvement in quality of care; Population-based assessments. These include: 1) Client satisfaction survey; 2) KAP survey covering health information topics provided to selected communities by the PHCR project through Community Health Committees (CHC); 3) Countrywide household health survey covering main health outcome measures of the population including perceived health status, health dynamics, use of early diagnostics and preventive services, accessibility and perceived quality of care, and exposure to/attitude towards activities implemented by the PHCR project.

2) Intermediate and final assessments, including:

Repeating the facility level assessments mentioned above upon completion of the project activities in target facilities of each marz.

Repeating the population-based assessments upon completion of the project activities in target marzes (for client satisfaction and KAP surveys) and countrywide (for the household health survey) covering all the areas mentioned in the baseline surveys.

This report summarizes the baseline facility/provider performance assessment data obtained from select facilities of Aragatsotn, Armavir, and Ararat marzes targeted by the third year of PHCR Project. This baseline assessment supports current internal planning and future project impact evaluation for Zone 3-1.

2. Methods

The PHCR Project staff and corresponding marz health department staff jointly selected target facilities in Zone 3-1: Ararat, Armavir, and Aragatsotn marzes, where the project activities are being implemented from 2008-2010. The Monitoring and Evaluation (M&E) team conducted two types of baseline assessments in the selected facilities: facility resource assessment and facility/provider performance assessment.

The facility/provider performance assessment questionnaire (Appendix 1) was initially adapted from the facility self-assessment tool used by Project NOVA as part of its facility-level quality improvement strategy and the facility organization/management self-assessment tool previously used by the Armenia Social Transition Program at its pilot sites and later revised to reflect changing USAID and PHCR Project priorities. The facility/provider performance assessment instrument covers the following domains:

Access to/Provision of care

Provider relations with community and clients

Environment
Management
Primary and secondary prevention
Provider skills/performance

The M&E team separated from the main instrument the items developed together with the PHCR Project Family Medicine team to measure providers' clinical skills/performance and administered them as a supplemental questionnaire. The supplemental questionnaire was completed during face-to-face interviews with providers rather than with the facility head, who served as the respondent for the main body of the questionnaire. The supplemental questionnaire also included two observation checklists intended to evaluate the performance of blood pressure and blood glucose level measurements conducted by FAP nurses.

In each of the targeted marzes the PHCR M&E team trained two interviewers (all local physicians) to conduct the assessments (both facility resource and performance assessments). The training lasted two days and included theoretical and practical components on survey administration as well as standardized observations of the selected medical procedures (blood pressure measurement and serum glucose testing).

Local drivers were hired in each marz to transport the interviewers to the selected facilities. The fieldwork lasted approximately six weeks (starting the week of April 14 and finishing the week of May 19, 2008). The M&E team conducted spot-checks of the interview process in all three marzes to assure compliance with the survey protocol.

Data were entered into SPSS 11 statistical package at the Center for Health Services Research and Development (CHSR) of the American University of Armenia (AUA) by enterers trained by the Project's M&E staff. Double entry and subsequent cleaning was conducted to ensure the precision of the information entered.

For each of the domains (access to care, relations with clients, environment, management, and prevention) in the facility/provider performance assessment survey questionnaire, M&E team computed a summative score, which included all variables/questions in a particular section. The maximum score of 3 was given to positive (yes) replies and 0 to negative (no) replies. In case of Likert-type response scales, the responses were scored from 0 to 3 as well, with intermediate scores of 1, 1.5, and 2. The M&E team calculated a mean score from the summative score resulting in a maximum possible value of 3.0 and compared the mean scores using independent sample t-test and one-way ANOVA.

3. Results

Eighty one (81) facilities were included in the performance-assessment study, of which 32 were in Aragatsotn marz, 26 in Ararat, and 23 in Armavir (Table 1).

Table 1. PHCR project target facilities in Zone 3-1

Facilities selected for renovation	Network centers for renovation sites	Facilities selected for renovation	Network centers for renovation sites
<u>Aragatsotn marz</u>		<u>Ararat marz</u>	
<i>Aparan region</i>		1. Lusashogh FAP	15. Zangakatun MA
1. Lusagyugh FAP [#]		2. Aygepat FAP	16. Aygestan MA
2. Mulqi FAP [#]		3. Baghramyan FAP	17. Azatavan MA
3. Nigavan FAP [#]		4. Masis FAP	18. Burastan MA
4. Tsaghkashen FAP	25. Aragats HC	5. Berqanush FAP*	19. Dalar MA
5. Vardenut FAP		6. Araqsavan FAP	20. Dimitrov MA
6. Apnagyugh FAP	26. Shenavan MA	7. Mrganush FAP	21. Getazat MA
7. Hartavan FAP		8. Ditak FAP	22. Jrashen MA
<i>Aragats region</i>		9. Hovtashen FAP	23. Mkhchyan MA
8. Alagyaz FAP		10. Mrgavet FAP	24. Verin Artashat MA
9. Berqarat FAP		11. Hnaberd FAP	25. Qaghcrashen MA
10. Gegharot FAP		12. Narek FAP*	26. Marmarashen MA
11. Geghadzor FAP	Tsaghkahovit PC**	13. Nor Kyurin FAP	
12. Vardablur FAP		14. Verin Dvin MA	
13. Tsaghkahovit PC		<u>Armavir marz</u>	
14. Meliqgyugh FAP		1. Noravan FAP [#]	
15. Norashen/Arag. FAP		2. Berqashat FAP	14. Getashen MA
16. Tsilqar FAP		3. Argina FAP	15. Qarakert MA
17. Lernapar FAP*		4. Shenik FAP	16. Baghramyan MA
<i>Ashtarak region</i>		5. Vanand FAP*	17. Yervandashat HC
18. Nor Amanos FAP	27. Arutch MA	6. Tsaghkalanj FAP	18. Aragats MA
19. Avan FAP	28. Kosh MA	7. Aygek FAP	19. Merdzavan MA
20. Ghazaravan FAP	29. Parpi MA	8. Arevashat FAP	20. Musaler MA
21. Nor Yedesia FAP	30. Ujan MA	9. Hovtamej FAP	21. Samaghar MA
22. Voskehat FAP	31. Voskevaz MA	10. Tsaghkunq FAP	
<i>Talin region</i>		11. Aygeshat/Ejm. FAP	22. Shahumyan MA
23. Tsamaqasar FAP [#]		12. Haykashen FAP*	23. Guy MA
24. V. Bazmaberd FAP	32.N.Bazmaberd MA	13. Metsamor v. FAP*	

* These facilities will be furnished and equipped, but not renovated

** Selected also as a renovation site

[#] For these sites, referral facilities (Aparan, Talin, and Armavir PCs) were not included in the baseline assessment because they had merged with regional hospitals in accordance with the Ministry of Health optimization plan

3.1. Access to/provision of care

The M&E team assessed the facilities along a number of service dimensions. The assessment revealed that only 60.5% of facilities were always open and available during official work hours; 30.9% were usually open, and 3.7% occasionally. Four facilities were never open. In 66.7% of facilities, the community members were aware of the free BBP services offered. Educational materials describing free services were available in 56.8% of facilities; at 55.6% of the facilities MOH state order posters were visible to clients. Working hours were posted only in 35.0% of the facilities. For patients of 7.4% of the facilities, these hours were not convenient. Emergency instructions were posted for non-working hours only in two facilities. Virtually all facilities (97.5%) provide routine pre/postnatal home visits. Table 2 shows the distribution of responses by facility type.

Table 2. Access to/provision of care by facility type

	FAP % (n)	Ambula- tory % (n)	Referral Health Center % (n)	Total Referral % (n)	TOTAL % (n)
Facility open and available during official hours					
Always	38.3 (18)	93.3 (28)	75.0 (3)	91.2 (31)	60.5 (49)
Usually	48.9 (23)	3.3 (1)	25.0 (1)	5.9 (2)	30.9 (25)
Occasionally	6.4 (3)	-	-	-	3.7 (3)
Never	6.4 (3)	3.3 (1)	-	2.9 (1)	4.9 (4)
Community aware of the free services offered					
Yes, all of them	72.3 (34)	53.3 (16)	100.0 (4)	58.8 (20)	66.7 (54)
Yes, the majority	27.7 (13)	43.3 (13)	-	38.2 (13)	32.1 (26)
No		3.3 (1)	-	2.9 (1)	1.2 (1)
Working hours posted in the facility					
Yes	17.0 (8)	60.0 (18)	66.7 (2)	60.6 (20)	35.0 (28)
No	83.0 (39)	40.0 (12)	33.3 (1)	39.4 (13)	65.0 (52)
Working hours convenient for clients					
Yes	89.4 (42)	96.7 (29)	100.0 (4)	97.1 (33)	92.6 (75)
No	10.6 (5)	3.3 (1)	-	2.9 (1)	7.4 (6)
Educational materials available describing free services					
Yes	34.0 (16)	86.7 (26)	100.0 (4)	88.2 (30)	56.8 (46)
No	66.0 (31)	13.3 (4)	-	11.8 (4)	43.2 (35)
MOH state order (BBP) posters visible to clients					
Yes	31.9 (15)	86.7 (26)	100.0 (4)	88.2 (30)	55.6 (45)
No	68.1 (32)	13.3 (4)	-	11.8 (4)	44.4 (36)
Providers routinely conduct pre/postnatal home visits					
Yes	97.9 (46)	96.7 (29)	100.0 (4)	97.1 (33)	97.5 (79)
No	2.1 (1)	3.3 (1)	-	2.9 (1)	2.5 (2)
Are there emergency instructions posted for non-working hours?					
Yes	-	3.3 (1)	25.0 (1)	5.9 (2)	2.5 (2)
No	100.0 (47)	96.7 (29)	75.0 (3)	94.1 (32)	97.5 (79)

FAP specific access/care. FAP respondents answered a separate set of questions investigating access to care and service provision (Table 3). Virtually all FAPs (91.5%) had had a supervising physician visit at least once per month. Visiting physicians made home visits at least once per month at 87.2% of FAPs. At 66.0% of FAPs, visiting physicians always took time to see patients at the clinic. At 66.0% of the FAPs, the supervising physician always notified the facility in advance about the time and date of the visit. Majority of village mayors (68.1%) provided emergency transport once in three months or less frequently.

Table 3. Access to care/details on service provision in FAPs

	At least once per month % (n)	Once in two months % (n)	Once in three months % (n)	Less frequently % (n)
Frequency of supervising physician visit	91.5 (43)	4.3 (2)	-	4.3 (2)
Frequency of supervising physician home visits	87.2 (41)	6.4 (3)	2.1 (1)	4.3 (2)
	Always	Usually	Occasionally	Never
Frequency of supervising physician seeing patients in the clinic	66.0 (31)	25.5 (12)	6.4 (3)	2.1 (1)
Frequency of supervising physician notifying the facility of visit in advance	66.0 (31)	29.8 (14)	4.3 (2)	-
Frequency mayor provides emergency transport	8.5 (4)	23.4 (11)	25.5 (12)	42.6 (20)

Access scores were calculated according to the methods outlined in Chapter 2. Table 4 shows the distribution of mean access scores by facility type and marz. The overall mean score was 2.1 (out of a maximum score of 3.0). Health centers scored higher than other facility types (2.6), while FAPs scored the lowest (1.9). Collectively, referral level facilities scored statistically significantly better than FAPs. Facilities were not significantly different across the three marzes.

Table 4. Mean access score by facility type and marz

	Access score mean (n)
Facility type*	
FAP	1.9 (47)
Referral (Ambulatory/Health Center)	2.3 (33)
<i>Ambulatory</i>	2.3 (30)
<i>Health Center</i>	2.6 (3)
Marz	
Ararat	2.1 (26)
Armavir	2.3 (22)
Aragatsotn	2.0 (32)
Total	2.1 (80)

* the difference is statistically significant, $p^{\dagger} < 0.05$

[†] **P-value** - a measure of statistical significance. The p-value represents the probability that a difference between groups happened by chance. An example would be differences in the average birth weight of newborns in two different income groups. 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 0.01 ($p = 0.01$) means there is a 1 in 100 chance the result occurred by chance. For most social science research, a p-value of 0.05 or less is considered acceptable.

3.2. Provider relations with community and clients

The assessment revealed that providers at 34.6% of facilities (15 FAPs, 12 ambulatories, and one health center) always or usually provided clients with health education materials (Table 5). Only a few (five FAPs and one ambulatory) reported never providing clients with education materials. In most facilities, patients received health education counseling always or usually (81.0% of all facilities: 33 FAPs, 27 ambulatories, and 4 health centers).

Few facilities (13) regularly conducted education sessions (at least once per month) and majority (44.7% of FAPs, 30.0% of ambulatories and 50.0% of health centers) rarely conducted such sessions. At those facilities holding community education sessions, most providers (82.7%) seldom prepared appropriately for the sessions (e.g., did not inform the community, did not prepare an agenda, and did not prepare the location). According to respondents, mayors were rarely involved in solving the community's health problems; more than two third of facilities indicated that mayors were occasionally or never involved in solving community health problems.

Patients at 17.0% of FAPs and 46.7% of ambulatories were reported as always being involved in treatment decisions. Only four facilities (all ambulatories) had suggestion boxes. At 93.7% of facilities, nothing had changed in the last three months based on client suggestions. Providers at virtually all facilities (93.8%) reported that an outsider could not get information from patient records. Only 26 facilities (32.5%) had private space so that counseling sessions, physical exams, and procedures could not be observed or overheard. None of the facilities reported regularly conducting patient satisfaction surveys.

Providers at 10.6% of FAPs, 48.3% of ambulatories, and all health centers kept records of the composition of its community (e.g., age and gender). Providers at 8 FAPs, 21 ambulatories, and 2 health centers kept lists of community members who are vulnerable and eligible to get free services.

Table 6 shows the distribution of mean provider relationship scores by facility type and marz. The overall mean was 0.9 out of 3.0 maximum. Ambulatories scored highest (1.3) followed by health centers (1.2) and FAPs (0.7). FAPs scored significantly lower than referral level facilities. The scores were not significantly different by marz.

Table 5. Provider relationships with community and clients

	FAP	Referral		TOTAL	
	% (n)	Ambulatory % (n)	HC % (n)		Total Referral % (n)
Frequency providers give clients health education materials					
Always	6.4 (3)	20.0 (6)	-	17.6 (6)	11.1 (9)
Usually	25.5 (12)	20.0 (6)	25.0 (1)	20.6 (7)	23.5 (19)
Occasionally	57.4 (27)	56.7 (17)	75.0 (3)	58.8 (20)	58.0 (47)
Never	10.6 (5)	3.3 (1)	-	2.9 (1)	7.4 (6)
Frequency providers conduct health talks with the patients					
Always	17.8 (8)	36.7 (11)	25.0 (1)	35.3 (12)	25.3 (20)
Usually	55.6 (25)	53.3 (16)	75.0 (3)	55.9 (19)	55.7 (44)
Occasionally	26.7 (12)	10.0 (3)	-	8.8 (3)	19.0 (15)

	FAP	Referral			TOTAL
	% (n)	Ambulatory	HC	Total	% (n)
		% (n)	% (n)	Referral	
				% (n)	
Frequency providers conduct community-based health education sessions					
At least once per month	10.6 (5)	23.3 (7)	25.0 (1)	23.5 (8)	16.0 (13)
Once in 2-3 months	21.3 (10)	20.0 (6)		17.6 (6)	19.8 (16)
Once or twice a year	23.4 (11)	26.7 (8)	25.0 (1)	26.5 (9)	24.7 (20)
Less frequently	44.7 (21)	30.0 (9)	50.0 (2)	32.4 (11)	39.5 (32)
Frequency providers adequately prepare for health education sessions					
Always	-	3.3 (1)		2.9 (1)	100.0 (1)
Usually	6.4 (3)	30.0 (9)	25.0 (1)	29.4 (10)	16.0 (13)
Occasionally	29.8 (14)	36.7 (11)	25.0 (1)	35.3 (12)	32.1 (26)
Never	63.8 (30)	30.0 (9)	50.0 (2)	32.4 (11)	50.6 (41)
Frequency the Mayor is involved in solving community's health problems					
Always	12.8 (6)	13.3 (4)	-	11.8 (4)	12.3 (10)
Usually	12.8 (6)	16.7 (5)	25.0 (1)	17.6 (6)	14.8 (12)
Occasionally	59.6 (28)	66.7 (20)	75.0 (3)	67.6 (23)	63.0 (51)
Never	14.9 (7)	3.3 (1)	-	2.9 (1)	9.9 (8)
Frequency patients involved in treatment decisions					
Always	17.0 (8)	46.7 (14)	-	41.2 (14)	27.2 (22)
Usually	21.3 (10)	33.3 (10)	50.0 (2)	35.3 (12)	27.2 (22)
Occasionally	46.8 (22)	16.7 (5)	25.0 (1)	17.6 (6)	34.6 (28)
Never	14.9 (7)	3.3 (1)	25.0 (1)	5.9 (2)	11.1 (9)
Suggestion box present					
Yes	-	13.8 (4)	-	12.1 (4)	5.0 (4)
No	100.0 (47)	86.2 (25)	100.0 (4)	87.9 (29)	95.0 (76)
Changes made in last three months based on client suggestion					
Yes	4.3 (2)	7.1 (2)	25.0 (1)	9.4 (3)	6.3 (5)
No	95.7 (45)	92.9 (26)	75.0 (3)	90.6 (29)	93.7 (74)
Outsider able to access patient records/information					
Yes	6.4 (3)	6.9 (2)	-	6.1 (2)	6.3 (5)
No	93.6 (44)	93.1 (27)	100.0 (4)	93.9 (31)	93.8 (75)
Private space for counseling sessions, physical exams, and procedures					
Yes	6.4 (3)	65.5 (19)	100.0 (4)	69.7 (23)	32.5 (26)
No	93.6 (44)	34.5 (10)	-	30.3 (10)	67.5 (54)
Do providers keep records of the community's composition (age, gender)?					
Yes	10.6 (5)	48.3 (14)	100.0 (4)	54.5 (18)	28.8 (23)
No	89.4 (42)	51.7 (15)	-	45.5 (15)	71.3 (57)
Maintain list of community members who are vulnerable and eligible for free services					
Yes	17.0 (8)	72.4 (21)	50.0 (2)	69.7 (23)	38.8 (31)
No	83.0 (39)	27.6 (8)	50.0 (2)	30.3 (10)	61.3 (49)
Patient satisfaction surveys regularly conducted					
Yes		-	-	-	-
No	100.0 (47)	100.0 (29)	100.0 (4)	100.0 (33)	100.0 (80)

Table 6. Mean provider relationship score by facility type and marz

	Provider relationship score:	
	mean (n)	
Facility type*		
FAP	0.7	(45)
Referral (Ambulatory/Health Center)	1.3	(32)
<i>Ambulatory</i>	1.3	(28)
<i>Health Center</i>	1.2	(4)
Marz		
Ararat	1.0	(26)
Armavir	0.9	(21)
Aragatsotn	0.9	(30)
Total	0.9	(77)

* the difference is statistically significant, $p < .05$

3.3. Environment

As shown in Table 7, providers at only 40.7% of facilities maintain vaccine cold chain records. A few FAPs (three) maintain such records while most ambulatories (90.0%) and health centers (75.0%) do. However, this data should be interpreted with caution, as – according to several nurses – FAP nurses are not required or allowed to keep such records as the records are the responsibility of the supervising ambulatory and nurses only “borrow” the vaccine bag for vaccinations and return it back to the ambulatory/polyclinic within a brief specified period of time.

No FAPs reported that their facilities offered appropriate working conditions, while providers of 56.7% of ambulatories, and 25.0% of health centers felt that their facilities did provide acceptable conditions. Seventy-four (74) percent of FAPs, 96.6 % of ambulatories, and all health centers were regularly ventilated. Only 65.2% of FAPs were cleaned regularly versus 100.0% of ambulatories and health centers.

Official security checks were conducted regularly only at one FAP, 10 ambulatories and two health centers. Training on emergency situations/disaster preparedness had been conducted for the staff of 15.0% of facilities (one FAP, nine ambulatories, two health centers). None of the FAPs had maintenance staff, while four ambulatories and one health center did. Consumable medical supplies were regularly replenished at only 14 facilities of the 81 facilities (13 ambulatories and one health center).

The providers at 53.2% of FAPs, 82.8% of ambulatories, and 75.0% of health centers reported that they always deposited used needles into sharp containers; five FAPs reported never doing this. The providers at only 23.5% of facilities always washed hands with soap and water before and after each patient (6 FAPs, 12 ambulatories, 1 health center). Regulations of the State Hygiene and Anti-epidemic Inspectorate (SHAI) on infection control and medical waste management were available in 8.7% of FAPs, 72.4% of ambulatories, and 75.0% of health centers.

Table 7. Facility environment

	FAP	Referral			TOTAL
	% (n)	MA % (n)	HC % (n)	Total Referral % (n)	% (n)
Providers maintain vaccine cold chain records					
Yes	6.4 (3)	90.0 (27)	75.0 (3)	88.2 (30)	40.7 (33)
No	93.6 (44)	10.0 (3)	25.0 (1)	11.8 (4)	59.3 (48)
Facility provides appropriate working conditions for providers					
Yes	-	56.7 (17)	25.0 (1)	52.9 (18)	22.5 (18)
No	100.0 (46)	43.3 (13)	75.0 (3)	47.1 (16)	77.5 (62)
Facility regularly ventilated during working hours					
Yes	74.5 (35)	96.6 (28)	100.0 (4)	97.0 (32)	83.8 (67)
No	25.5 (12)	3.4 (1)	-	3.0 (1)	16.3 (13)
Facility regularly cleaned					
Yes	65.2 (30)	100.0 (29)	100.0 (4)	100.0 (33)	79.7 (63)
No	34.8 (16)	-	-	-	20.3 (16)
Official security checks conducted regularly					
Yes	2.1 (1)	34.5 (10)	50.0 (2)	36.4 (12)	16.3 (13)
No	97.9 (46)	65.6 (19)	50.0 (2)	63.6 (21)	83.8 (67)
Staff trained on emergency situations/disaster preparedness					
Yes	2.1 (1)	31.0 (9)	50.0 (2)	33.3 (11)	15.0 (12)
No	97.9 (46)	69.0 (20)	50.0 (2)	66.7 (22)	85.0 (68)
Maintenance staff					
Yes	-	13.8 (4)	25.0 (1)	15.2 (5)	6.3 (5)
No	100.0 (47)	86.2 (25)	75.0 (3)	84.8 (28)	93.8 (75)
Consumable medical supplies replenished regularly					
Yes	-	44.8 (13)	25.0 (1)	42.4 (14)	17.5 (14)
No	100.0 (47)	55.2 (16)	75.0 (3)	57.6 (19)	82.5 (66)
Frequency used needles disposed of in a sharps container					
Always	53.2 (25)	82.8 (24)	75.0 (3)	81.8 (27)	65.0 (52)
Usually	19.1 (9)	10.3 (3)	25.0 (1)	12.1 (4)	16.3 (13)
Occasionally	17.0 (8)	6.9 (2)	-	6.1 (2)	12.5 (10)
Never	10.6 (5)	-	-	-	6.3 (5)
Frequency providers wash hands with soap and water before and after each patient					
Always	12.8 (6)	40.0 (12)	25.0 (1)	38.2 (13)	23.5 (19)
Usually	48.9 (23)	40.0 (12)	25.0 (1)	38.2 (13)	44.4 (36)
Occasionally	36.2 (17)	20.0 (6)	50.0 (2)	23.5 (8)	30.9 (25)
Never	2.1 (1)	-	-	-	1.2 (1)
MOH/San Epid regulations on infection control and medical waste management posted					
Yes	8.7 (4)	72.4 (21)	75.0 (3)	72.7 (24)	35.4 (28)
No	91.3 (42)	27.6 (8)	25.0 (1)	27.3 (9)	64.6 (51)

A summative environment score was calculated as described in Chapter 2. As shown in Table 8, the mean facility environment score was quite low at 1.3 (maximum of 3.0). Ambulatories (1.9) and health centers (1.8) scored significantly higher than FAPs (0.8). Facilities did not score significantly different between three marzes.

Table 8. Mean facility environment scores by facility type and marz

	Mean score:	
	mean (n)	
Facility type*		
FAP	0.8	(44)
Referral (Ambulatory/Health Center)	1.9	(33)
<i>Ambulatory</i>	1.9	(29)
<i>Health Center</i>	1.8	(4)
Marz		
Ararat	1.4	(26)
Armavir	1.2	(20)
Aragatsotn	1.2	(31)
Total	1.3	(77)

* the difference is statistically significant, $p < .05$

3.4. Facility management

A set of questions investigated facility management issues (Table 9). Written job descriptions were available in 8.7% of FAPs, 36.7% of ambulatories, and one health center. A chronic disease registry was maintained in 25.5% of FAPs, 89.7% of ambulatories, and 75.0% of health centers.

Most respondents (88.9%) considered that the current number of staff was sufficient to provide high quality and cost-effective services to their community. Most facilities (91.1%) lack official procedures for responding to client complaints. Primary health care standards were available for a reference in 10.6% of FAPs, 50.0% of ambulatories, and all health centers. Providers of two FAPs, thirteen ambulatories, and two health centers used these standards during their daily work.

According to facility directors, all providers at 34.2% of facilities were satisfied with their job, 26.3% of facilities reported only some of providers were satisfied, and 39.5% of facilities reported that none of the providers were satisfied. Regular staff meetings were held at 19.1% of FAPs, 86.2% of ambulatories, and 50.0% of health centers. Records of such meetings were rarely maintained (only at four ambulatories and one health center). Providers at 18.5% of facilities (six FAPs, six ambulatories, and three health centers) reported having a financial reward system for good performance.

FAP specific questions addressed facility management issues (Table 10). FAP supervisors typically engage providers in problem solving (19.6% always, 34.8% usually) and provide clinical support (19.6% always, 56.5% usually). FAP supervisors provide administrative support less often (6.5% always, 39.1% usually). When problems could not be solved locally, the supervisor did not regularly make all reasonable efforts to solve it (45.7% occasionally, 23.9% never). Supervisors who did pursue solving such problems did not regularly report back to the providers (56.5%).

Table 9. Facility management

	FAP % (n)	Referral		TOTAL % (n)	
		MA % (n)	HC % (n)		
Written provider job descriptions					
Yes	8.7 (4)	36.7 (11)	25.0 (1)	35.3 (12)	20.0 (16)
No	91.3 (42)	63.3 (19)	75.0 (3)	64.7 (22)	80.0 (64)
Chronic disease registry					
Yes	25.5 (12)	89.7 (26)	75.0 (3)	87.9 (29)	51.3 (41)
No	74.5 (35)	10.3 (3)	25.0 (1)	12.1 (4)	48.8 (39)
Current staffing sufficient to provide high quality and cost-effective services					
Yes	87.2 (41)	93.3 (28)	75.0 (3)	91.2 (31)	88.9 (72)
No	12.8 (6)	6.7 (2)	25.0 (1)	8.8 (3)	11.1 (9)
Official procedure for responding to client complaints					
Yes	4.3 (2)	17.2 (5)		15.2 (5)	8.8 (7)
No	95.7 (45)	82.8 (24)	100.0 (4)	84.8 (28)	91.3 (73)
Primary health care protocols available as a reference					
Yes	10.6 (5)	50.0 (15)	100.0 (4)	55.9 (19)	29.6 (24)
No	89.4 (42)	50.0 (15)	-	44.1 (15)	70.4 (57)
Protocols used in daily work					
Yes	4.3 (2)	43.3 (13)	50.0 (2)	44.1 (15)	21.0 (17)
No	95.7 (45)	56.7 (17)	50.0 (2)	55.9 (19)	79.0 (64)
Providers satisfied with their job					
Yes, all of them	21.4 (9)	50.0 (15)	50.0 (2)	50.0 (17)	34.2 (26)
Yes, some of them	14.3 (6)	43.3 (13)	25.0 (1)	41.2 (14)	26.3 (20)
No	64.3 (27)	6.7 (2)	25.0 (1)	8.8 (3)	39.5 (30)
Regular staff meetings					
Yes	19.1 (9)	86.2 (25)	50.0 (2)	81.8 (27)	45.0 (36)
No	80.9 (38)	13.8 (4)	50.0 (2)	18.2 (6)	55.0 (44)
Records of staff meetings maintained					
Yes	-	13.8 (4)	25.0 (1)	15.2 (5)	6.3 (5)
No	100.0 (47)	86.2 (25)	75.0 (3)	84.8 (28)	93.8 (75)
Financial reward system for good provider performance					
Yes	12.8 (6)	20.0 (6)	75.0 (3)	26.5 (9)	18.5 (15)
No	87.2 (41)	80.0 (24)	25.0 (1)	73.5 (25)	81.5 (66)

Table 10. Facility management/ FAPs

	Always % (n)	Usually % (n)	Occasionally % (n)	Never % (n)
Supervisor engages providers in problem solving	19.6 (9)	34.8 (16)	37.0 (17)	8.7 (4)
Supervisors provide clinical support	19.6 (9)	56.5 (26)	15.2 (7)	8.7 (4)
Supervisors provide administrative support	6.5 (3)	39.1 (18)	39.1 (18)	15.2 (7)
Supervisor make all the reasonable efforts to solve problems	2.2 (1)	28.3 (13)	45.7 (21)	23.9 (11)
Supervisor report back on problem status	8.7 (4)	34.8 (16)	43.5 (20)	13.0 (6)

Summative facility management scores were calculated as described in Chapter 2. Table 11 shows the distribution of mean facility management scores by facility type and marz. FAPs scored significantly lower than other facilities (0.9 for FAPs versus 1.6 for ambulatories and health centers, maximum of 3.0). The facilities in three marzes did not score significantly differently.

Table 11. Mean facility management score by facility type and marz

	Facility management score mean (n)
Facility type*	
FAP	0.9 (40)
Referral (Ambulatory/Health Center)	1.6 (33)
<i>Ambulatory</i>	1.6 (29)
<i>Health Center</i>	1.6 (4)
Marz	
Ararat	1.3 (24)
Armavir	1.3 (19)
Aragatsotn	1.1 (30)
Total	1.2 (73)

* the difference is statistically significant, $p < .05$

3.5. Primary and secondary prevention

Table 12 describes primary and secondary prevention activities. The most common preventive measure, one that covers more than 75.0% of population in 88.8% of surveyed facilities, was children's immunization. Other relatively common measures included examination and consultation on the reproductive health issues of female adolescents (covering more than 75% of the population at 43.8% of the facilities). The coverage of more than 75% of the population with other preventive measures listed in the table did not exceed 40%.

Table 13 summarizes ambulatory and health centers specific prevention activities. More than 75% of pregnant women were examined at least four times during their pregnancy in 65.6% of the referral facilities. More than 75% of patients with hypertension or coronary heart disease received regular ECG control (at least 1 ECG per year) at 59.4% of the facilities. Other common measures included hemoglobin measurement of children at 9 months of age (50% of the facilities providing more than 75% coverage) and eye funduscopy of diabetes patients (at least one fundoscopic exam per year) covering more than 75% of the population in 34.4% of the ambulatories and health centers. The remaining preventive measures listed in Table 13 were not commonly practiced, including only 3.1% providing pap smears to at least 25% of the 30-60 year-old female population at least once every three years.

Table 12. Primary and secondary prevention activities at Zone 3-1 target facilities

	>75% % (n)	50-75% % (n)	25- 50% % (n)	<25% % (n)
Proportion of children fully immunized at 24 months	88.8 (71)	6.3 (5)	3.8 (3)	1.3 (1)
Proportion of female adolescents (15-17) years old examined and consulted on reproductive health	43.8 (35)	21.3 (17)	11.3 (9)	23.8 (19)
Proportion of pregnant women receiving consultation on healthy pregnancy, breastfeeding, child care, personal and sexual hygiene	38.0 (30)	22.8 (18)	15.2 (12)	24.1 (19)
Proportion of patients with type 2 diabetes receiving at least one blood glucose test per month	36.3 (29)	16.3 (13)	22.5 (18)	25.0 (20)
Proportion of first antenatal visit within the first trimester	36.3 (29)	27.5 (22)	23.8 (19)	12.5 (10)
Proportion of children receiving clinical urine and blood tests at 12 months	31.3 (25)	13.8 (11)	18.8 (15)	36.3 (29)
Proportion of population over 20 years old receiving preventive BP measurement at least once per year and having a corresponding record in medical chart	1.3 (1)	8.8 (7)	25.0 (20)	65.0 (52)

Table 13. Primary and secondary prevention activities at Zone 3-1 referral facilities

	> 75% % (n)	50-75% % (n)	25- 50% % (n)	< 25% % (n)
Proportion of pregnant women examined at least four times during pregnancy	65.6 (21)	18.8 (6)	6.3 (2)	9.4 (3)
Proportion of patients with hypertension and CHD receiving annual ECG	59.4 (19)	25.0 (8)	15.6 (5)	-
Proportion of children receiving hemoglobin measurement at 9 months of age	50.0 (16)	9.4 (3)	18.8 (6)	21.9 (7)
Proportion of patients with type 2 diabetes receiving annual eye fundoscopic exam	34.4 (11)	25.0 (8)	34.4 (11)	6.3 (2)
Proportion of preschool age children receiving preventive examination by neurologist and ophthalmologist	25.0 (8)	9.4 (3)	18.8 (6)	46.9 (15)
Proportion of patients with CHD receiving annual blood cholesterol control	18.8 (6)	18.8 (6)	25.0 (8)	37.5 (12)
Proportion of female population over 40 receiving annual clinical breast examination	6.3 (2)	6.3 (2)	12.5 (4)	75.0 (24)
Proportion of population over 40 years old having annual blood cholesterol level measurement	3.2 (1)	3.2 (1)	16.1 (5)	77.4 (24)
Proportion of female population 30-60 years old undergoing Pap-smear exam at least once every 3 years	-	-	3.1 (1)	96.9 (31)

The M&E team calculated a summative score for these prevention items. Table 14 shows the distribution of the mean prevention score by facility type and marz. The difference between the FAPs and referral level facilities was not statistically significant. The mean prevention score was significantly higher in Armavir (2.1) versus the other two marzes (1.3).

Table 14. Prevention score by facility type and marz

	Prevention score mean (n)
Facility type	
FAP	1.4 (46)
Referral (Ambulatory/Health Center)	1.7 (31)
<i>Ambulatory</i>	1.7 (27)
<i>Health Center</i>	1.7 (4)
Marz*	
Ararat	1.3 (24)
Armavir	2.1 (21)
Aragatsotn	1.3 (32)
Total	1.5 (77)

**the difference is statistically significant, p <.05*

3.6. Total performance score

A composite score was created summing across all of the items. Table 15 shows the distribution of these mean total scores by facility type and marz. These total performance scores differed significantly by facility type, but were similar across marzes. Appendix 2 presents the mean performance scores by domains and facility.

Table 15. Mean total performance score by facility type and marz

	Performance score mean (n)
Facility type*	
FAP	1.1 (36)
Referral (Ambulatory/ Health Center)	1.8 (29)
<i>Ambulatory</i>	1.8 (26)
<i>Health Center</i>	2.0 (3)
Marz	
Ararat	1.5 (22)
Armavir	1.6 (15)
Aragatsotn	1.3 (28)
Total	1.4 (65)

** the difference is statistically significant, p <.05*

Table 16 compares the baseline scores for the facilities in Zone 1, 2 and Zone 3-1; the total mean scores and most of the section scores are similar across the zones at baseline.

Table 16. Baseline domain & total performance mean score by zone (Zones 1, 2 and 3-1)

Domain	Zone 1 (2006) mean (n)	Zone 2 (2007) mean (n)	Zone 3-1 (2008) mean (n)
Access to/provision of care	2.0 (58)	2.0 (55)	2.1 (80)
Provider relations with community/clients	1.1 (56)	1.0 (55)	0.9 (77)
Environment	1.3 (56)	1.2 (54)	1.3 (77)
Facility management	1.4 (56)	1.3 (53)	1.2 (73)
Primary and secondary prevention	1.3 (53)	1.3 (54)	1.5 (77)
Total performance	1.4 (42)	1.3 (48)	1.4 (65)

3.7. Technical competence of primary health care providers

3.7.1 Nurses

Equipment usage. The M&E team assessed the technical competence of primary health care nurses (Table 17). Regularly used equipment included the adult sphygmomanometer (98.2%) and the stethophonendoscope (91.1%). About 7.1% of the respondents regularly used glucometers . Approximately 60.7% regularly used child scales; and 28.6% adult scales. Other items regularly used by providers included child sphygmomanometers and ear syringe. The remaining equipment listed in Table 17 was rarely, if ever, used.

Table 17. Reported use of common medical equipment at FAPs

	Regularly (%, n)	Occasionally (%, n)	Never (%, n)
Do you use the following instruments in your daily practice?			
Adult sphygmomanometer	98.2 (55)	-	1.8 (1)
Stethophonendoscope	91.1 (51)	3.6 (2)	-
Scale, child	60.7 (34)	1.8 (1)	37.5 (21)
Scale, adult	28.6 (16)	5.4 (3)	66.1 (37)
Glucometer	7.1 (4)	5.4 (3)	87.5 (49)
Child sphygmomanometer	1.8 (1)	7.1 (4)	91.1 (51)
Syringe for ear irrigation	1.8 (1)	1.8 (1)	96.4 (54)
Urine test	-	1.8 (1)	98.2 (55)
Small surgical kit	-	1.8 (1)	98.2 (54)
Peek flow meter	-	-	100.0 (56)
Test for occult blood in feces	-	-	100.0 (55)
Gynecologic speculum	-	-	100.0 (55)

Family nursing skills. Table 18 shows the distribution of responses to a set of questions administered to community nurses about the skills they routinely perform in their practice. The skills are drawn from the skills most commonly expected of a family nurse. The twelve most frequently practiced skills included measuring blood pressure (100.0%), administering childhood vaccines (85.7%), measuring height of children (76.4%), providing first aid in allergic reactions (74.5%), administering intravenous infusions (75.0%), preventing dehydration (73.2%), measuring head circumference of children (69.6%), weighing children (69.6%), positioning of baby at the breast (62.5%), care of burns (57.1%), bed sore prevention and care (57.1%), and measuring respiration rate (51.8%). The remaining skills listed in the table were reported by less than 50% of the respondents. Nurses did not report taking a sputum sample for TB diagnosis, and taking vaginal, cervical and urethral cultures, urinary bladder catheterization, counseling on PAP test screening, and administering CPR to children were reported by one nurse each. Two nurses reported taking throat cultures and palpating thyroid glands.

The M&E team calculated a summative practice score that reflects the percentage of the 32 skills practiced by a nurse. For the whole sample, the mean percentage was 35.5 (Table 19) with Aragatsotn nurses having the lowest mean practice score (25.1%) compared to Ararat and Armavir (41.5% and 47.1%, respectively).

The reasons for not utilizing these skills were also investigated (Table 20). The most cited reason for not practicing a skill was lack of knowledge (36.7%) followed by not having clients needing the skill (24.8%). In many cases, nurses refer clients to another facility (20.2%) or to another provider (1.1%). About 17.2% of nurses reported lack of equipment/supplies to practice the skill.

Table 18. Commonly practiced nursing skills, Zone 3-1

Skill	Yes % (n)	Frequency skill used (last 2 weeks) mean (min - max)
1. Measuring blood pressure	100.0 (56)	26.6 (5-150)
2. Administering childhood vaccines	85.7 (48)	10.9 (0-33)
3. Measuring height of children	76.4 (42)	10.6 (0-30)
4. Providing first aid for allergic reactions	74.5 (41)	0.7 (0-4)
5. Administering intravenous (IV) infusions	75.0 (42)	5.7 (0-25)
6. Preventing dehydration	73.2 (41)	0.9 (0-5)
7. Measuring head circumference of children	69.6 (39)	10.1 (0-28)
8. Weighing children	69.6 (39)	11.2 (2-30)
9. Positioning baby at the breast	62.5 (35)	1.6 (0-7)
10. Caring for burns	58.2 (32)	0.2 (0-1)
11. Preventing and caring for bed sores	57.1 (32)	0.5 (0-5)
12. Measuring respiration rate	51.8 (29)	1.9 (0-7)
13. Providing TB counseling	37.5 (21)	1.3 (0-10)
14. Directing the care of terminally ill patients	35.7 (20)	0.3 (0-1)
15. Providing family planning counseling	33.9 (19)	1.1 (0-3)
16. Weighing pregnant women	32.1 (18)	2.8 (0-7)
17. Immobilizing fractures	25.0 (14)	0.3 (0-4)
18. Administering insulin	23.2 (13)	3.1 (0-25)
19. Teaching breast self-examination technique	21.4 (12)	1.7 (0-4)
20. Overseeing TB treatment	12.5 (7)	2.3 (0-11)
21. Checking serum glucose level	10.7 (6)	2.1 (0-7)
22. Counseling patients with STI and HIV/AIDS	8.9 (5)	0.6 (0-3)
23. Performing adult CPR	7.1 (4)	0
24. Testing urine (with dip strip)	5.4 (3)	4.8 (0-14)
25. Measuring fundal height in pregnant women	5.4 (3)	4.7 (3-6)
26. Palpating thyroid gland	3.6 (2)	1.0 (1-1)
27. Taking throat culture	3.6 (2)	0
28. Performing child CPR	1.8 (1)	0
29. Counseling on PAP test screening	1.8 (1)	1.0 (0-2)
30. Catheterizing urinary bladder	1.8 (1)	3.0 (3-3)
31. Taking vaginal, cervical and urethral culture	1.8 (1)	0
32. Taking sputum sample for TB diagnosis	0	0

Table 19. Application of FN skills, mean percentage score by marz

	Ararat	Armavir	Aragatsotn	Total
Percent score (mean percent)	41.5	47.1	25.1	35.5

Table 20. Reason for not practicing specific family nursing skills, Zone 3-1

	Referred client to another		Lack of		No clients needing the skill % (n)
	facility % (n)	provider % (n)	knowledge % (n)	equipment/supplies % (n)	
1. Taking sputum sample for TB diagnosis	53.6 (30)	-	25.0 (14)	1.8 (1)	19.6 (11)
2. Performing child CPR	20.0 (11)	-	60.0 (33)	-	20.0 (11)
3. Catheterizing urinary bladder	21.8 (12)	-	60.0 (33)	9.1 (5)	9.1 (5)
4. Taking vaginal, cervical and urethral culture	43.6 (24)	-	34.5 (19)	20.0 (11)	1.8 (1)
5. Counseling on PAP test screening	18.5 (10)	-	72.2 (39)	1.9 (1)	7.4 (4)
6. Taking throat culture	55.6 (30)	-	24.1 (13)	16.7 (9)	3.7 (2)
7. Testing urine (with dip strip)	3.8 (2)	-	24.5 (13)	69.8 (37)	1.9 (1)
8. Palpating thyroid gland	28.3 (15)	3.8 (2)	56.6 (30)	-	11.3 (6)
9. Performing adult CPR	21.2 (11)	-	59.6 (31)	-	19.2 (10)
10. Measuring fundal height in pregnant women	36.5 (19)	5.8 (3)	30.8 (16)	26.9 (14)	-
11. Counseling patients with STI and HIV/AIDS	17.6 (9)	-	41.2 (21)	-	41.2 (21)
12. Checking serum glucose levels	-	-	22.0 (11)	76.0 (38)	2.0 (1)
13. Overseeing TB patient treatment	10.2 (5)	-	26.5 (13)	-	63.3 (31)
14. Teaching breast self-examination technique	14.0 (6)	-	76.7 (33)	-	9.3 (4)
15. Immobilizing fractures	16.7 (7)	-	9.5 (4)	33.3 (14)	40.5 (17)
16. Administering insulin	2.6 (1)	-	15.4 (6)	-	82.1 (32)
17. Counseling on family planning	35.1 (13)	-	45.9 (17)	-	18.9 (7)
18. Weighing pregnant women	24.3 (9)	2.7 (1)	2.7 (1)	67.6 (25)	2.7 (1)
19. Directing the care of terminally ill patients	-	-	35.1 (13)	-	64.9 (24)
20. Providing TB counseling	11.4 (4)	-	65.7 (23)	-	22.9 (8)
21. Measuring respiration rate	11.1 (3)	-	44.4 (12)	3.7 (1)	40.7 (11)
22. Preventing and caring for bed sores	-	-	20.0 (5)	8.0 (2)	72.0 (18)
23. Caring for burns	22.7 (5)	-	9.1 (2)	13.6 (3)	54.5 (12)
24. Positioning of baby at the breast	-	4.8 (1)	47.6 (10)	-	47.6 (10)
25. Weighing children	-	5.9 (1)	-	94.1 (16)	-
26. Measuring child head circumference	-	6.3 (1)	18.8 (3)	56.3 (9)	18.8 (3)
27. Preventing dehydration	-	-	12.5 (2)	-	87.5 (14)
28. Administering first aid for allergic reactions	21.4 (3)	-	14.3 (2)	7.1 (1)	57.1 (8)
29. Administering intravenous (IV) infusions	21.4 (3)	-	7.1 (1)	7.1 (1)	64.3 (9)
30. Measuring child height	-	7.1 (1)	21.4 (3)	71.4 (10)	-
31. Administering vaccines	12.5 (1)	37.5 (3)	-	-	50.0 (4)
TOTAL	20.2 (233)	1.1 (13)	36.7 (423)	17.2 (198)	24.8 (286)

Observations. As a practical assessment of community nursing skills, nurses were observed performing two standardized tasks: blood pressure measurement and serum glucose testing. Each procedure was rated using a 14-item observation checklist, assessing a combination of interpersonal skills, technical skills, and adherence to sanitary/safety regulations throughout the process (see Appendix 1 for the observation checklists). Fifty-four nurses were observed on their blood pressure measurement skills (two nurses were not included in the sample because their equipment was not working). Only two nurses' glucometry skills were observed as no other nurses had glucometers.

Table 21 shows the nurses' performance on the blood pressure task. Most nurses (83%) greeted the patient respectfully and explained the procedure and received the patient's consent before starting. Most of the other steps were infrequently or improperly performed. Only 16.7% asked the patient to sit quietly for 3-5 minutes, and only one person washed and dried her hands before the procedure. Only three providers repeated the measurement on another arm. All but two nurses failed to correctly record the measurements obtained from two arms. Only two nurses cleaned the stethoscope bell with the spirit saturated cotton ball. None of the nurses washed their hands after the procedure.

Table 22 presents the distribution of total scores (out of the 14 steps). While none scored zero, less than half of the nurses performed 3 steps correctly. None scored higher than 9 out of 14. Mean summative scores were calculated for the whole sample and by marz (Table 23). The mean total score for blood pressure measurement was 3.9 (median = 3).

The two nurses scored 6 and 8 while performing glucometry. There were too few observations to permit further summarizing and analysis.

Table 21. Zone 3-1 Community nurse observed blood pressure measurement, by step

Step	% (n)
1. Greet the patient respectfully and kindly, explain the procedure	83.3 (45)
2. Receive the patient's consent	83.3 (45)
3. Asked the patient to sit quietly for 3-5 minutes?	16.7 (9)
4. Wash and dry his/her hands	1.9 (1)
5. Properly position the patient	28.3 (15)
6. Properly place the blood pressure cuff on the patient's unclothed upper arm	37.0 (20)
7. Palpate the brachial artery to properly place the stethoscope	9.6 (5)
8. Inflate the cuff rapidly to 30 mm HG beyond which the pulse disappears	22.2 (12)
9. Place the stethoscope bell over the brachial artery.	38.9 (21)
10. Release the cuff slowly to capture appearance and obliteration of brachial pulse	66.7 (36)
11. Repeat the measurement on the other arm	5.6 (3)
12. Record the results	3.7 (2)
13. Clean the stethoscope bell with the spirit saturated cotton ball?	3.7 (2)
14. Wash and dry his/her hands	-

Table 22. Zone 3-1 observed blood pressure measurement, distribution of total scores (max=14)

Blood pressure score	% (n)
1	5.9 (3)
2	19.6 (10)
3	27.5 (14)
4	13.7 (7)
5	11.8 (6)
6	9.8 (5)
7	3.9 (2)
8	5.9 (3)
9	2.0 (1)
Total	100.0 (51)

Table 23. Zone 3-1 observed blood pressure measurement, mean score (%) by marz

	Ararat	Armavir	Aragatsotn	Total
	% (n)	% (n)	% (n)	% (n)
Mean summative score (%)	21.4 (14)	30.1 (14)	30.8 (23)	28.0 (51)

3.7.2 Doctors of ambulatories, health centers and polyclinics

Use of equipment. Table 24 shows the use of common medical equipment by 51 doctors at ambulatories and health centers. Items used daily include stethophonendoscopes and adult sphygmomanometers (100%). Frequently used items include adult scales (90.2%), child scales (86.3%), otoscopes (70.6%), and glucometers (66.7%), ECG (58.8%), syringes for ear irrigation and ophthalmoscopes (52.9%). The other items listed in the table were less frequently used. Among the rarely used items were tests for fecal occult blood, peak flow meters and camertone (Table 24).

Table 24. Reported physician use of common medical equipment (ambulatories and health centers), Zone 3-1

Item	Frequency of use (n = 51)			Regular or Occasional use by		
	Regularly % (n)	Occasionally % (n)	Never % (n)	Family Physician (n=43)	Theraputists (n=3)	Pediatricians (n=5)
Stethophonendoscope	100.0 (51)	-	-	100.0 (43)	100.0 (3)	100.0 (5)
Adult sphygmomanometer	100.0 (51)	-	-	100.0 (43)	100.0 (3)	100.0 (5)
Scale, adult	90.2 (46)	3.9 (2)	5.9 (3)	95.3 (41)	66.7 (2)	100.0 (5)
Scale, child	86.3 (44)	5.9 (3)	7.8 (4)	95.3 (41)	33.3 (1)	100.0 (5)
Otoscope	70.6 (36)	17.6 (9)	11.8 (6)	97.7 (42)	33.3 (1)	40.0 (2)
Glucometer	66.7 (34)	15.7 (8)	17.6 (9)	93.0 (40)	33.3 (1)	20.0 (1)
ECG	58.8 (30)	15.7 (8)	25.5 (13)	83.7 (36)	33.3 (1)	20.0 (1)
Syringe for ear irrigation	52.9 (27)	31.4 (16)	15.7 (8)	97.7 (42)	33.3 (1)	-
Ophthalmoscope	52.9 (27)	29.4 (15)	17.6 (9)	93.0 (40)	33.3 (1)	20.0 (1)
Child sphygmomanometer	43.1 (22)	39.2 (20)	17.6 (9)	88.4 (38)	33.3 (1)	60.0 (3)
Reflex hammer	37.3 (19)	51.0 (26)	11.8 (6)	93.0 (40)	33.3 (1)	80.0 (4)
Urine test	25.5 (13)	17.6 (9)	56.9 (29)	48.8 (21)	33.3 (1)	-
Small surgical kit	25.5 (13)	31.4 (16)	43.1 (22)	65.1 (28)	33.3 (1)	-
Gynecologic speculum	16.0 (8)	22.0 (11)	62.0 (31)	42.9 (18)	33.3 (1)	-
Microscope	13.7 (7)	5.9 (3)	80.4 (41)	23.3 (10)	-	-
Camertone	8.0 (4)	24.0 (12)	68.0 (34)	35.7 (15)	33.3 (1)	-
Peek flow meter	4.0 (2)	30.0 (15)	66.0 (33)	40.5 (17)	-	-
Test for fecal occult blood	-	2.0 (1)	98.0 (50)	2.3 (1)	-	-

Family medicine skills. Physicians at ambulatories and health centers were asked to indicate the frequency they utilize certain skills. Table 25 shows the distribution of responses by skills and physician specialty. Virtually all providers counseled on healthy lifestyle (96.1%), prescribed chest X-ray exam to TB risk group patients (94.1%), and treated patients with low back pain (94.1%). Ninety (90) percent of providers prescribed aspirin to patients with coronary artery disease. Eighty six (86) percent treated patients with skin fungal infections, assessed the vision acuity, and removed earwax. Eighty four (84) percent managed patients with otitis media. Patients with acne were treated by 62.7% of providers. Sixty (60) percent of providers calculated patients' risk for cardiovascular diseases. Approximately 59% felt confident in management of anaphylactic shock and performed suturing/caring of wounds. The rest of the procedures mentioned below were routinely performed by less than 50% of the respondents at surveyed ambulatories and health centers (Table 25). None of the respondents performed pap-smear test.

Table 25. Routinely reported skills and procedures by doctors of ambulatories, health centers and polyclinics (by different types of doctors)

Skill	Total % (n)	Family	Therapist	Pediatrician
		Physician (n=43) % (n)	(n=3) % (n)	(n=5) % (n)
Counsel on healthy lifestyle	96.1 (49)	95.3 (41)	100.0 (3)	100.0 (5)
Prescribe chest X-ray exam to TB at-risk patients	94.1 (48)	93.0 (40)	100.0 (3)	100.0 (5)
Treat patient with low back pain	94.1 (48)	100.0 (43)	100.0 (3)	40.0 (2)
Prescribe aspirin to patients with CHD	90.2 (46)	100.0 (43)	100.0 (3)	-
Treat patient with fungal skin infection	86.3 (44)	90.7 (39)	66.7 (2)	60.0 (3)
Assess visual acuity	86.3 (44)	97.7 (42)	33.3 (1)	20.0 (1)
Remove earwax	86.3 (44)	97.7 (42)	33.3 (1)	20.0 (1)
Manage patients with otitis media	84.3 (43)	88.4 (38)	33.3 (1)	80.0 (4)
Treat patients with acne	62.7 (32)	72.1 (31)	33.3 (1)	-
Calculate patient's risk for cardiovascular disease	60.0 (30)	61.9 (26)	100.0 (3)	20.0 (1)
Feel confident to manage anaphylactic shock	58.8 (30)	60.5 (26)	33.3 (1)	60.0 (3)
Suture/care for wounds	58.8 (30)	65.1 (28)	33.3 (1)	20.0 (1)
Feel confident to perform CPR	47.1 (24)	41.9 (18)	33.3 (1)	100.0 (5)
Prescribe exercises to prevent musculoskeletal disorders	41.2 (21)	41.9 (18)	33.3 (1)	40.0 (2)
Feel confident in early management of severe trauma	39.2 (20)	41.9 (18)	66.7 (2)	-
Perform dipstick urine test	39.2 (20)	46.5 (20)	-	-
Prescribe exercises to prevent CVD	33.3 (17)	34.9 (15)	66.7 (2)	-
Prescribe contraceptives/counsel on family planning methods	31.4 (16)	37.2 (16)	-	-
Remove in-grown nail	25.5 (13)	25.6 (11)	33.3 (1)	20.0 (1)
Take pap-smear culture	-	-	-	-

The M&E team calculated a summative physician skills practice score as the percentage of these 20 skills practiced by a physician. Table 26 shows the distribution of mean summative scores by marz and physician specialty. The overall mean physician practice score was 61.8%. The mean score differences by marzes were not significant. The mean scores for family physicians were significantly higher than the mean scores for therapists and pediatricians.

Table 26. Physician skills practice score by marz and specialty, Zone 3-1

	Skills practice score percent score (n)	
Marz		
Ararat	61.0	(21)
Armavir	61.5	(13)
Aragatsotn	63.1	(16)
Specialty*		
Family Physician	65.7	(42)
Therapist	51.7	(3)
Pediatrician	35.0	(5)
Total	61.8	(50)

* the difference is statistically significant, $p < .05$

3.8. Main findings

The following are the main baseline facility/provider performance assessment survey findings for Zone 3-1 (Ararat, Armavir, and Aragatsotn marzes):

- **Referral centers perform better than FAPs.** In general, health centers and ambulatories received higher total performance scores than FAPs (2.0 for health centers, 1.8 for ambulatories, and 1.1 for FAPs). This difference was recorded across all performance domains.
- **Performance scores are generally similar to Zones 1 and 2 at baseline.** The total mean performance score was 1.4 for Zone 3-1, which is quite similar to the 1.4 (Zone 1, backdated) and 1.3 (Zone 2)².
- **Nurses lacking community/family nurse training practice a limited skill set.** The FAP nurses practiced on average 35.5% of the family nursing skills assessed. This is low when compared to the 69.0% average reported by nurses trained in family nursing as part of the UFNC/Community Nursing trainings course provided by PHCR.² Aragatsotn nurses practiced significantly fewer skills than nurses in Ararat and Armavir (25.1% versus >40.0%).
- **Nurses lacking community/family nurse training perform skills less effectively.** The blood pressure measurement scores were 27.9%, significantly lower than the 72.1% received by Community Nurses in Zone 1 who had completed the UFNC/Community nurse training.²
- **Family physicians practice a wider primary healthcare skill set than do other specialists.** The physicians at ambulatories, health centers and polyclinics practiced on average 61.8% of assessed family medicine skills. Family physicians practiced 65.7% of the skills versus 51.7% by therapists and 35.0% by pediatricians.

² See the baseline facility/provider performance assessment survey reports for Zones 1 and 2 for further details.

	<i>Always</i>	<i>Usually</i>	<i>Occasionally</i>	<i>Never</i>
16. Does a supervising physician take time to see patients in the clinic?	3	2	1	0
17. Does a supervising physician notify the facility of the time and date of the visit?	3	2	1	0
18. Do village mayors provide transportation in case of an emergency with a community member?	3	2	1	0

B. PROVIDER RELATIONS WITH COMMUNITY AND CLIENTS

	Once per month or more frequently	Once in 2-3 months	Once or twice a year	Less frequently than once a year or never
19. How frequently do providers conduct health education sessions with the community?	3	2	1	0

	Always	Usually	Occasionally	Never
20. How frequently do providers prepare for health education sessions adequately (inform community, prepare agenda, organize location)?	3	2	1	0
21. How frequently do providers provide clients with educational materials?	3	2	1	0
22. How frequently do providers conduct health talks with the patients during their visits?	3	2	1	0
23. How frequently the Mayor is involved in solving health problems in the community?	3	2	1	0
24. How frequently patients have the opportunity to choose between different treatment options?	3	2	1	0

	Yes	No
25. Does facility have a suggestion box?	3	0
26. In the last three months has anything changed in your facility based on the suggestions of clients?	3	0
27. Could an outsider get information from patient records at your facility?	3	0
28. Does your facility have private space so that counseling sessions, physical exams, and procedures cannot be observed or overheard?	3	0
29. Do providers keep records of the community's composition (age, gender)?	3	0
30. Do providers keep lists of people in the community who are vulnerable and eligible to get free services?	3	0
31. Are patient satisfaction surveys regularly conducted at the facility? (the survey of clients about the quality of and satisfaction with the care received; conducted using the standardized questionnaire)	3	0

C. ENVIRONMENT

	Yes	No
32. Do providers maintain complete records of cold chain conditions for vaccines?	3	0

	Yes	No
33. Does the facility offer appropriate working conditions for providers?	3	0
34. Does the facility have staff who checks the problems with facility equipment and makes repairs if necessary?	3	0
35. Is the facility being regularly ventilated during working hours?	3	0
36. Is the facility being regularly cleaned?	3	0
37. Are official security checks regularly conducted at the facility?	3	0
38. Are trainings on emergency situations/disaster preparedness regularly conducted for the facility staff?	3	0
39. Is medical equipment being refilled regularly?	3	0
40. Are there any MOH /San Epid regulations on infection control and medical waste management available at the facility?	3	0

	Always	Usually	Occasionally	Never
41. How frequently do providers wash hands before and after each patient with soap and water?	3	2	1	0
42. How frequently are the used needles removed into the sharp containers?	3	2	1	0

D. MANAGEMENT

	Yes	No
43. Are there written documents describing job responsibilities of providers?	3	0
44. Are the registers of patients with chronic diseases maintained at the facility?	3	0
45. Is the current number of staff sufficient to provide high quality services to the population?	3	0
46. Is there an established official procedure of responding to the client complaints?	3	0
47. Do providers have primary health care clinical practice standards available at the facility for reference (clinical guidelines, Job Aids, criteria, protocols)?	3	0
48. Do providers use the standards during their daily work?	3	0
49. Are internal meetings regularly conducted to evaluate the facility activities?	3	0
50. Are records of these meetings maintained?	3	0
51. Is there some type of financial rewarding system for good provider performance at your facility?	3	0

	Yes, all	Yes, some	No
52. Are providers satisfied with their job?	3	1.5	0

FOR AMBULATORIES, HEALTH CENTERS, AND POLYCLINICS ONLY!

53. Are the following quality assurance techniques/tools employed in your facility?	Yes	No
1. Self-assessment of performance.	3	0
2. Medical chart/case review.	3	0
3. Patient satisfaction surveillance.	3	0
4. Other (please describe) _____	3	0

FOR FAPs ONLY!

	Always	Usually	Occasionally	Never
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	<i>Always</i>	<i>Usually</i>	<i>Occasionally</i>	<i>Never</i>
54. <i>Does a supervisor engage providers in problem solving during their visits?</i>	3	2	1	0
55. <i>Do supervisors provide clinical support to providers?</i>	3	2	1	0
56. <i>Do supervisors provide administrative support to providers?</i>	3	2	1	0
57. <i>When problems cannot be solved locally, does the supervisor make all reasonable efforts to solve it by raising it with the authorities?</i>	3	2	1	0
58. <i>Does the supervisor report back to the provider on the status of the issue?</i>	3	2	1	0

E. PRIMARY AND SECONDARY PREVENTION

	More than 75%	50-75%	25- 50%	Less than 25%
59. <i>What proportion of the served population over 20 years old receives preventive blood pressure measurement at least once per year and have a corresponding record in medical chart?</i>	3	2	1	0
60. <i>For what proportion of the served children clinical urine and blood tests are performed at 12 months?</i>	3	2	1	0
61. <i>What proportion of female adolescents 15-17 years are examined and consulted on reproductive health</i>	3	2	1	0
62. <i>What proportion of first antenatal visits is within the first trimester of pregnancy?</i>	3	2	1	0
63. <i>What proportion of pregnant women receive consultation on healthy pregnancy, breastfeeding, child care, personal and sexual hygiene?</i>	3	2	1	0
64. <i>What proportion of the children at age 24 months fully complete immunizations in accordance with the National Plan?</i>	3	2	1	0
65. <i>What proportion of patients with Type 2 Diabetes receives regular blood glucose control - at least 1 blood glucose test per month?</i>	3	2	1	0

FOR AMBULATORIES, HEALTH CENTERS, AND POLICLYNICS ONLY!

	More than 75%	50-75%	25- 50%	Less than 25%
66. <i>What proportion of the served population over 40 years old undergoes blood cholesterol level measurement at least once a year?</i>	3	2	1	0

	More than 75%	50-75%	25- 50%	Less than 25%
67. <i>What proportion of the served children receives hemoglobin measurement at 9 months of age?</i>	3	2	1	0
68. <i>What proportion of the served preschool age children receive preventive examination by neurologist and ophthalmologist?</i>	3	2	1	0
69. <i>What proportion of the served female population over 40 receive clinical breast examination at least once per year?</i>	3	2	1	0
70. <i>What proportion of served female population 30-60 years old undergoes Pap-smear test at least once in 3 years</i>	3	2	1	0
71. <i>What proportion of pregnant women are examined at your facility at least four times for the period of pregnancy?</i>	3	2	1	0
72. <i>What proportion of patients with Type 2 Diabetes receives regular eye funduscopy control - at least 1 eye funduscopy exam per year?</i>	3	2	1	0
73. <i>What proportion of patients with Hypertension and Coronary Heart Disease (CHD) received regular ECG-control - at least 1 ECG-exam per year?</i>	3	2	1	0
74. <i>What proportion of patients with Coronary Heart Disease (CHD) received regular blood cholesterol control - at least 1 test per year?</i>	3	2	1	0

Facility Code _____

Community nurse (Yes / No)

Form F2 (FOR FAP NURSES)

75. Do you use the following instruments in your daily practice:	Yes, regularly	Yes, occasionally	Never
1. Stethophonendoscope	3	1.5	0
2. Child sphygmanometer	3	1.5	0
3. Reflex hammer	3	1.5	0
4. Otoscope	3	1.5	0
5. Adult sphygmanometer	3	1.5	0
6. Glucometer	3	1.5	0
7. Peekfluometer	3	1.5	0
8. Ophthalmoscope	3	1.5	0
9. Camertone	3	1.5	0
10. Urine tests	3	1.5	0
11. Test for occult blood in feces.	3	1.5	0
12. Gynecologic speculum	3	1.5	0
13. Small surgical kit	3	1.5	0
14. Scale – child	3	1.5	0
15. Scale – adult	3	1.5	0
16. Microscope	3	1.5	0
17. Syringe for ear irrigation	3	1.5	0
18. EKG device	3	1.5	0

2. Do you routinely apply the following skills in your practice?			
	a. 1= Yes, 0= No	b. If Yes, how many times in the last 2 weeks?	c. If No, please indicate the main reason for not applying this skill: 1. Referred client to another facility 2. Lack of knowledge 3. Lack of equipment and supplies 4. There was no need, because there were no clients with such problems 5. Other
19. Measuring blood pressure			
20. Checking glucose level in blood			
21. Urine strip testing			
22. Weighting children			
23. Measuring head circumference of children			
24. Measuring height of children			
25. Administering childhood vaccines			
26. Administering intravenous (IV) infusions			

2. Do you routinely apply the following skills in your practice?			
	a. 1= Yes, 0= No	b. If Yes, how many times in the last 2 weeks?	c. If No, please indicate the main reason for not applying this skill: 1. Referred client to another facility 2. Lack of knowledge 3. Lack of equipment and supplies 4. There was no need, because there were no clients with such problems 5. Other
27. Administering insulin injection			
28. Vaginal, cervical and urethral smear taking			
29. Taking smear from throat			
30. Taking sputum sample for TB diagnosis			
31. Overseeing TB patients' treatment			
32. Providing TB counseling			
33. Directing the care of terminally ill patients			
34. Bed sore prevention and care			
35. Performing immobilization of fractures			
36. First aid in allergic reactions			
37. Preventing dehydration with Rehidron			
38. Care of burns			
39. Administering Cardiopulmonary Resuscitation (CPR) to children			
40. Administering Cardiopulmonary Resuscitation (CPR) to adults			
41. Measuring Respiration Rate			
42. Providing counseling on Family Planning			
43. Counseling on PAP test screening			
44. Weighting pregnant women			
45. Fundal height measurement in pregnant women			
46. Positioning of baby at the breast			
47. Counseling patients with STI and HIV/AIDS			
48. Thyroid gland palpation			
49. Teaching breast self-examination technique			

2. Do you routinely apply the following skills in your practice?			
	a. 1= Yes, 0= No	b. If Yes, how many times in the last 2 weeks?	c. If No, please indicate the main reason for not applying this skill: 1. Referred client to another facility 2. Lack of knowledge 3. Lack of equipment and supplies 4. There was no need, because there were no clients with such problems 5. Other
50. Urinary bladder catheterization			

3. Observation checklist: Measuring blood pressure

Procedure		Yes=1 No=0	Notes
	<i>Had the nurse:</i>		
1	Greeted the patient respectfully and kindly, explained what should be done?		
2	Received the patient's consent?		
3	Asked the patient to sit quietly for 3-5 minutes?		
4	Washed and dried his/her hands?		
5	Had the patient comfortably seated with the back up straight, both feet flat on the floor (feet and knees not crossed), the arm on the table and at the level of the heart?		
6	Placed the blood pressure cuff on the patient's unclothed upper arm, 2-3 centimeters above the elbow area, so that the middle part of the rubber bag is on the inner side of the arm, and so that there is a room for one finger between the cuff and the arm (the clothes should not press on the arm above the cuff area)?		
7	Palpated the brachial artery in the area of cubital fossa to properly place the stethoscope?		
8	Inflated the cuff rapidly, simultaneously palpating the pulse on the brachial or radial artery (so that she continues to inflate the cuff up to 30 mm HG above the level at which the pulse disappears)?		
9	Placed the stethoscope bell over the brachial artery. The bell should not touch the cuff or tubing		
10	Released the cuff slowly enough (2-3 mm HG/second) to be able to capture the moment of the appearance and obliteration of the brachial pulse tones?		
11	Repeated the measurement on another arm?		
12	Recorded the highest results of the measurements obtained from two arms (if the difference between the two arms' measurements is more than 10 mm HG, she should record both, indicating which arm they are taken from)?		
13	Cleaned the stethoscope bell with the spirit saturated cotton ball?		
14	Washed his/her hands?		
	Total		

4. Observation checklist: Glucometry

Procedure		Yes=1 No=0	Notes
	<i>Had the nurse:</i>		
1	Greeted the patient respectfully and kindly, explained what should be done?		
2	Received the patient's consent?		
3	Prepared the necessary medical supplies and tools: glucometer, scarifier with needle, strip, cotton ball, and napkin?		
4	Asked the patient to wash his/her hands and dry them?		
5	Washed and dried his/her hands?		
6	Had the patient comfortably seated?		
7	Inserted a new needle onto the scarifier (device)?		
8	Checked the validity period of the strip?		
9	Checked the conformity of the strip and glucometer codes?		
10	Dropped the blood on the strip correctly?		
11	Recorded the data of the display?		
12	Took the strip out with a napkin and threw it into a special box?		
13	Removed the needle safely (the tip covered with a ball) and threw it into a special box?		
14	Washed his/her hands?		
	Total		

Thank you for participation!

Appendix 2. Mean scores by facility (facility performance assessment)

Marz	Facility	Mean score: Access to care	Mean score: Provider relations with community and clients	Mean score: Environment	Mean score: Facility management	Mean score: Primary/ Secondary prevention	Mean score: Total
Aragatsotn	Alagyaz FAP	1.77	.38	1.00	.40	1.00	.91
Aragatsotn	Apnaghugh FAP	.85	.46	.18	.53	.29	.46
Aragatsotn	Berkarat FAP	1.23	.85	.36	.60	.86	.78
Aragatsotn	Geghadzor FAP	1.54	.23	.18	.67	.86	.70
Aragatsotn	Gegarot FAP	1.85	.69	1.09	.47	1.43	1.11
Aragatsotn	Lernapar FAP	1.77	.	1.09	1.00	1.57	.
Aragatsotn	Lusagyugh FAP	1.77	.69	1.27	.	1.00	.
Aragatsotn	Tsaghkashen FAP	1.92	.69	.	1.00	1.29	.
Aragatsotn	Tsilqar FAP	1.85	.46	1.00	.53	1.71	1.11
Aragatsotn	Hartavan FAP	1.15	.85	.27	.80	.29	.67
Aragatsotn	Ghazaravan FAP	1.62	.62	.18	.67	.86	.79
Aragatsotn	Meliqgyugh FAP	1.85	.	1.00	.	1.29	.
Aragatsotn	Mulqi FAP	2.23	.85	1.00	.87	1.57	1.30
Aragatsotn	Nigavan FAP	1.85	.69	.64	.40	.71	.86
Aragatsotn	Nor Amanos FAP	1.85	.54	.64	.60	1.57	1.04
Aragatsotn	Nor Yedasia FAP	1.85	.31	.91	.13	.43	.73
Aragatsotn	Norashen FAP	1.62	.62	1.00	.70	1.00	.99
Aragatsotn	Voskehat FAP	1.54	.38	.64	.50	.86	.78
Aragatsotn	Vardablur FAP	1.85	.54	.36	.60	1.14	.90
Aragatsotn	Vardenut FAP	1.85	1.15	.91	1.13	1.14	1.24
Aragatsotn	Verin Bazmaberd FAP	1.31	.77	.27	.40	1.43	.84
Aragatsotn	Tsamaqasar FAP	2.08	1.15	1.09	.20	1.14	1.13
Aragatsotn	Avan FAP	2.08	.62	.09	1.00	1.57	1.07
Aragatsotn	Arutch MA	3.00	1.85	2.45	2.70	2.19	2.44
Aragatsotn	Kosh MA	2.63	1.85	2.73	2.10	2.13	2.29
Aragatsotn	Bazmaberd MA	2.25	1.46	3.00	1.95	2.00	2.13
Aragatsotn	Shenavan MA	2.25	1.69	2.55	2.10	1.19	1.96

Marz	Facility	Mean score: Access to care	Mean score: Provider relations with community and clients	Mean score: Environment	Mean score: Facility management	Mean score: Primary/ Secondary prevention	Mean score: Total
Aragatsotn	Voskevaz MA	2.63	1.31	2.45	1.95	1.50	1.97
Aragatsotn	Ujan MA	2.63	1.15	2.45	1.20	1.25	1.74
Aragatsotn	Parpi MA	2.63	1.23	2.45	2.70	2.06	2.21
Aragatsotn	Aragats HC	3.00	1.85	2.45	2.70	1.94	2.39
Aragatsotn	Tsaghkahovit HC	2.25	1.23	2.64	1.35	1.69	1.83
Ararat	Aygepat FAP	2.15	.92	1.18	1.50	.71	1.29
Ararat	Araqsavan FAP	1.54	.38	.91	.73	1.00	.91
Ararat	Baghramyan FAP	1.46	.77	.91	.	2.00	.
Ararat	Berqanush FAP	1.69	.38	.82	1.20	.43	.90
Ararat	Ditak FAP	2.15	.92	.91	1.30	1.86	1.43
Ararat	Lusashogh FAP	2.38	.54	1.18	1.33	.29	1.14
Ararat	Hnaberd FAP	2.00	.54	1.00	.73	2.14	1.28
Ararat	Hovtashen FAP	1.77	.31	.82	.	.43	.
Ararat	Mrganush FAP	1.62	.38	.73	1.27	1.00	1.00
Ararat	Mrgavet FAP	1.69	.85	.73	1.50	2.00	1.35
Ararat	Narek FAP	1.77	.77	1.18	1.67	.71	1.22
Ararat	Nor Kyurin FAP	1.69	.54	.91	1.00	.71	.97
Ararat	Azatavan MA	2.63	1.00	1.82	1.35	1.88	1.74
Ararat	Aygestan MA	2.63	1.23	2.09	1.05	2.00	1.80
Ararat	Verin Dvin MA	2.63	1.46	1.91	.90	1.75	1.73
Ararat	Burastan MA	1.38	1.31	1.55	1.05	1.38	1.33
Ararat	Getazat MA	2.13	.92	1.36	1.50	.	.
Ararat	Dalar MA	2.50	1.00	1.27	1.35	1.38	1.50
Ararat	Dimitrov MA	1.88	2.00	2.09	2.10	2.13	2.04
Ararat	Zangakatun MA	2.50	.92	1.45	1.80	.56	1.45
Ararat	Masis MA	1.25	.62	.45	.00	.	.
Ararat	Marmarashen MA	2.13	1.31	1.45	1.05	1.00	1.39
Ararat	Mkhchyan MA	2.50	1.31	2.36	1.80	1.81	1.96
Ararat	Jrashen MA	2.50	1.54	1.82	1.65	1.31	1.76

Marz	Facility	Mean score: Access to care	Mean score: Provider relations with community and clients	Mean score: Environment	Mean score: Facility management	Mean score: Primary/ Secondary prevention	Mean score: Total
Ararat	Verin Artashat MA	2.63	1.62	2.73	1.50	2.13	2.12
Ararat	Qaghtcrashen MA	2.63	1.31	1.55	2.10	.69	1.66
Armavir	Aygek FAP	2.31	.85	1.27	1.27	2.57	1.65
Armavir	Aygeshat FAP	2.15	.38	1.18	.	2.14	.
Armavir	Arevashat FAP	2.38	.85	1.18	1.33	2.71	1.69
Armavir	Argina FAP	2.15	.62	.09	.	1.29	.
Armavir	Bergashat FAP	2.23	.62	.36	.53	2.43	1.23
Armavir	Tsaghkalanj FAP	2.54	.46	.64	.93	2.00	1.31
Armavir	Tsaghkunq FAP	2.69	.77	.73	.83	2.00	1.40
Armavir	Haykashen FAP	2.23	.23	.36	.	.	.
Armavir	Hovtamej FAP	2.46	1.08	1.27	1.27	2.71	1.76
Armavir	Metsamor FAP	2.38	.23	.64	.80	1.71	1.15
Armavir	Shenik FAP	2.69	1.46	.	1.80	2.29	.
Armavir	Vanand	2.15	1.08	.	1.20	2.57	.
Armavir	Aragats MA	2.50	1.23	1.82	1.35	1.88	1.76
Armavir	Baghramyan MA	2.25	.62	1.73	1.65	2.00	1.65
Armavir	Getashen MA	2.25	1.54	1.82	1.80	2.13	1.91
Armavir	Qarakert MA	2.63	1.92	2.64	1.50	2.00	2.14
Armavir	Merdzavan MA	2.50	1.08	1.45	1.65	1.94	1.72
Armavir	Musaler MA	2.13	.	2.09	1.35	1.88	.
Armavir	Noravan MA	.00
Armavir	Shahumyan MA	2.13	.77	1.55	1.80	2.19	1.69
Armavir	Samaghar MA	2.13	1.00	1.18	1.05	1.88	1.45
Armavir	Gay HC	.	.77	1.09	.60	1.19	.
Armavir	Yervandashat HC	2.63	1.08	1.18	1.80	1.81	1.70